ACITYA

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Telkom University

THE CHALLENGE OF TEL-U IN "UTAMA" CLUSTER

CONTENTS

Telkom University
MUST DO RESEARCH

I f we talk about higher education, it cannot be separated from Three Pillars of National Higher Education (Tri Darma), namely learning, research, and community service. It is because the demand in higher education is quite different from that in other levels of education which only demand teaching-learning activity. Business process in higher education institution is aimed not only to educate students, but also to have a real contribution to community and nation. This is the reason why higher education is now under the Ministry of Research, Technology and Higher Education (Kemristek), not to the Ministry of Education.

A large number of higher education institutions in Indonesia already exist, starting from the big ones, to the small ones. All of these higher education institutions are obliged to contribute to develop knowledge; it also applies for Telkom University (Tel-U). Administratively, this university is considered new, however, it has so many experiences in education world for more than 20 years.

One of its ways to contribute to community is by finding something new. How to find it? By conducting researches. Besides that, research can be a reference for teaching-learning activity. For that reason, research activity is very important for the development of science, improvement of teaching process, and any recent case in many fields applied in community.

As one part of higher education world, Tel-U is not free from research obligation. In fact, there are a huge number of funds allocated for research activity, especially for lecturers' researches. Various kinds of grants for research from Directorate General of Higher Education (Dirjen Dikti) are constantly available. All of them are aimed to improve the quality and quantity of lecturers' researches due to the demand of research that should be conducted by all higher education institutions.

As motivation, Directorate General of Higher Education has categorized higher education institutions into four cluster; they are: Mandiri, Utama, Madya, and Binaan. These four categories are strongly related to research grants that will be awarded to each higher education institution. The position of Tel-U nowadays is as a Utama Cluster that will receive around 60 % RIP-based research grant, and 40% research multi-year. This campus is also allowed to review the researches that will be granted by the Directorate General of Higher Education. Still, Tel-U cannot be satisfied only with this position. The urge to self-improve and develop the quality and quantity of researches are always there. Lecturers who have not done any research should be supported to start one. Research schemes in this university should be improved to give bigger chance for the lecturers to do research.

The aim is to become a research-based university (Research University), along with the main aim in fulfilling the Three Pillars. When it is running, the contribution of Tel-U to the society can be improved by the implementation of the research findings. ❖

THE CHALLENGE OF TEL-U
IN "UTAMA" CLUSTER

Similar to other higher education institutions, Telkom University (Tel-U) also needs to stand out among other universities, especially, in the area of research. Although it has become a university for only three years, for research matter, this campus has reached a variety of achievements. In the last two consecutive years, this campus has been placed in the "UTAMA" Cluster by the Directorate General of Higher Education, in terms of the research performance. Of course, it is a pride for Tel-U since Tel-U has proven to defeat other campuses that were established earlier than Tel-U. Yet, the achievement still needs to be improved.

The categorization or the clusterization of higher education institutions depends on the research performance, determined by the Directorate of Research and Community Service (DRPM) of Kemristek Dikti to improve the quality and quantity of research in universities. According to the Director General of Kemristek Dikti, Djoko Susanto, in an assessment report of university research performance in 2010 – 2012 periods, there are four clusters of university determined by their performances, i.e. Mandiri, Utama, Madya, and Binaan. There are several factors that become the basics of assessment towards the universities to determine these groups, such as research resources, research management, research outcomes and revenue that are acquired as the follow-ups of the research results.

Grouping the educational institutions was done as a real form of decentralization of activities of Tri Dharma. According to the evaluation results, Tel-U occupies the primary cluster since it achieved high

rates in the components of research management (Manaje-men Penelitian) and research resources (Sumber Daya). While the components of Research Outcomes (Luaran Pene-litian) and Revenue Generating (RG) are slightly higher than the national average. In the group, major strengths of this university are the MP and SD components.

"The objective (of this grouping) is related to Tel-U external funds granted by DRPM. Being in the Utama Cluster, Tel-U can decide which lecturers' researches that will be financed by DRPM. In fact, if the rank climbes up to Independent, Tel-U is free to determine the researches and funding provided by DRPM. But, if its rank goes down to the Madya or Binaan Cluster, the reviewers for lecturers' researches that will be financed by DRPM are determined by DRPM" said Vice-Rector IV for Tel-U Student Affairs and Research, Dr. M. Yahya Arwiyah, SH, M.H.

The research funding granted by Dikti for the universities is based on the clusters. For

> The objective (of this grouping) is related to Tel-U external funds granted by DRPM. Being in the Utama Cluster, Tel-U can decide which lecturers' researches that will be financed by DRPM."

Mandiri Cluster, the 100% fund is allocated for RIP-based researches. Then, Utama Cluster will receive 60% for RIP-based researches and 40% for multi-year researches. Then, Madya Cluster will receive 35% for RIP-based researches and 65% for multi-year researches. Lastly, Binaan Cluster will receive 25% for RIP-based researches and 75% for multi-year researches.

According to Yahya, at least

this achievement must be maintained because it can stimulate the lecturers to create high-quality researches, in addition to increase the quantity. The higher the rank of group or cluster of university, the greater the funds disbursed by DRPM for research activities.

In 2015, Tel-U has five internal research schemes; they are: Internal Fund Research, Partnership, International Grants, Leading Universities, and Independent Grants. As for external researches, Dikti only provides two schemes; they are: the National Competitive and Decentralization.

Research decentralization is essentially a delegation of tasks and authority on higher education in the management of research in order to create qualified, programmed and continuous academic climate. There are seven research schemes offered for decentralization of Higher Education in 2015. Namely, Leading Researches for Universities (PUTP), Competitive Research Grant, Fundamental Research, Graduate Studies, University

Cooperation Research (Pe-kerti), Doctoral Dissertation Research, and Young Lecturers Research.

In addition to that, the National Competitive Research is divided into six schemes. *First*, the National Strategic Research (Pusnas). *Second*,

University & Industry Leading Research (RAPID). *Third*, International Cooperation Research & International Publication (KLN). *Fourth*, Competition Research (HIKOM). Fifth, the National Strategic Research (Stranas). Lastly, Research of Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI). In 2015, Tel-U has produced 180 internal researches and 33 external researches.

Yahya said that the development of research at Tel-U constantly shows some improvement from year to year. "If I am asked about re-

search, it's been quite encouraging. Now there are 893 lecturers involved in one or several studies that have been running since Tel-U was established on August 14, 2013. As for research papers that have been accepted in international journals in 2015, there are already 118 papers. So, its development has been quite significant, " said Vice Rector IV of Tel-U.

Currently, the Utama Cluster has already been achieved by Tel-U, but the research challenges for Tel-U are still great. According to Yahya's opinion, it is not easy to encourage lecturers to do research, although they are the part of the Tri Dharma. "There are lecturers who have not conducted research, but we always give them motivation. The causes vary, some of them said that they have not yet tried, are doubt, and fear of rejection, and some are indeed hiding and does not want to do research. This is not right and in time, punishment will be given to them based on the prevailing system in the university. For example, lecturers who refuse

to do research will be given penalties that affect their earnings, as one measure of lecturer performance is doing research, or he will be questioned for his responsibility towards Tri Dharma. So, inevitably everyone who is a lecturer must do research. Lecturers may prefer one aspect of Tri Dharma, but still other aspects must be implemented too, " he explained.

Moreover, Tel-U already has started to direct its researches to be oriented on the finished products. Although it is difficult, but the stages to go towards that direction has been done, which cooperate with Bandung Techno Park (BTP), the one of affiliated units of Telkom Foundation (YPT) to downstream a number of studies that can be commercialized. Moreover, Tel-U has accommodated lecturers' researches that have a sense of "newness" by registering them as Intellectual Property / Kekayaan Intelectual (KI). The aim is to preserve the work of Tel-U civitas academica's researches. So, it will not vanish into thin air, or be admitted by other par-

Dr. M. Yahya Arwiyah, S.H., M.H

ties, or further, it could be created into the products of technology, art or management.

Conference as Publication Improvement Solution

Not only encouraging the lecturers to improve the quality and quantity of the research, Tel-U also provides a facility for the lecturers to publish it. One of the activities is by conducting a conference. It was not easy at the beginning because to manage a conference that is recognized by international journal management, a conference should be attended by many participants.

Yahya emphasizes, the enactment of international conference for each faculty at Tel-U gives a significant influence for many things, both internal and external recognition.

"So, the challenge is truly hard. When people attend a seminar or conference, the first thing that comes to their mind is what they will get and whether the articles will be published in Scopus or Thomson-indexed Journal or not. The point is, every participant want to get a benefit when he/she attends a seminar or conference. So, how can a conference held by Tel-U can be indexed by international journal management if the Tel-U itself is not very famous? That is why we make cooperation with journal organizer management or we try to sell Tel-U conferences so hard to get many participants,"said this ex-inhouse lawyer of PT Telkom Indonesia.

When holding a conference, a higher education institution will not be directly recognized by journal organizer management, except, it has already established a cooperation previously. Tel-U itself has conducted an international conference in collaboration with a journal organizer management. One of them is Global Illuminator; it is an institution that already has international network to improve research, learning, knowledge sharing, innovation, and capacity building.

This network unites academician coming from multiple sciences to create academic superiority, innovation, human development, and research competent for the whole world. The purpose is to make sure that the materials presented in the conference can be published in Scopus, or Tomson-indexed journal. However, there are also independent conferences held by Tel-U, such as, International Conference on Information and Communication Technology (ICoICT). This is the conference held by School of Computing of Tel-U that has already been Scopus-indexed since two years ago.

"So, the conference held is not directly indexed, except, we already have networking with journal organizer management. That is why we work together with journal organizer management to verify papers that are submitted to the conference. In our opinion, it is quite challenging, but it is worth trying. Since everything in this world is considered hard at the beginning. But there are many proofs that lecturers who are accustomed to Scopus, international conference, etc. are people who love to try. There will be no masterpiece, without a small work," said Yahya, philosophically.

For that reason, Yahya wished that research at Tel-U can be an actual product that can be commercialized. "Researchers get satisfaction, the result can be applied for community need, and nation can enjoy the freshness that is created in technology, science, and art. I wish that this kind of activity will support lecturers' component and encourage students to do research. There are many researches that are submitted in international championships. Now, it is time for us to produce research results to be massive products, so it can be mutualism symbiosis. These are also the things that push us to enhance the collaboration with many universities inside and outside Indonesia, and others. We also establish some collaboration with practitioner as a business doer," Yahya said, concluding the conversation.❖

CONTROL SYSTEM
to Ease Human Business

The facilitation for human activity is getting more and more real. Along with technology improvement, things that are typically done manually now can be preceded automatically. It is because human creates automatic and control system. The ability to design and create this automatic and control system is needed to make everything under control and guaranteed. In the end, the efficiency and effectiveness rate in a process of something can be achieved.

SCHOOL OF ELECTRICAL ENGINEERING

- Major
  Bachelor of Electrical Engineering
- Title
  Guaranteed Cost Model AT Uncertain Neutral Systems Article Search Google Delay Time That Changed Against Time : System Control And Filtering (Filtering)
- Researcher Team
  Dr. Erwin Susanto, S.T., M.T.
  Junartho Halomoan, S.T., M.T.
- Fund
  IDR 61,500,000
- Scheme
  Fundamental

- Major
  Bachelor of Physics Engineering
- Title
  Design Reactor Producing Hydrogen and Methane From Organic Waste As Energy Future
- Researcher Team
  Mukhammad Ramdlan Kirom, S.Si, M.Si.
  Achmad Qurthobi, S.T., M.T.
  Salafudin, S.T., M.Sc. (ITENAS)
- Fund
  IDR 70,000,000
- Scheme
  Competitive Grant Research

There are many researches related to control system that are conducted to achieve the stability in many uncertain systems. In this research, it specifically discusses how to design a control system of neutral system; a system with delay period, and change of delay period, so it can achieve optimum and stable condition.

Optimum can be defined that cost and time function is efficient and economical, while stable can be explained as follow: even though a system faces uncertainty that is caused by many things, such as disturbance and system physical changes, but control system that is designed can result a strong system reaction to overcome the uncertainty.

The application of this control system can be found in daily life, nowadays. Including the simple one, for example, feed water tank. If it is done manually, it is easy to fill out the tank, only by turning up the faucet, waiting for the water to fulfill the tank, and turning it down after the tank is full. However, this method is considered ineffective, inefficient, and not optimum, since human should continually monitor the tank, whether it is already full or not.

For that reason, control system appears to optimize and ease human job. So, people make a control system for the feed water tank using some instruments that can replace the eye and hand of human; for example by using censor, automatic switch (electronic, mechanic, and hydraulic instruments), and the result is changed to energy that moves motor to turn on and off the faucet. So there is automatic works performed by instrument using simple algorithm that replace human brain.

So, water feed using this automatic system can work alone, without human supervision. For example, when water already reaches given minimum limit, faucet will turn on and when water already reaches maximum limit, this faucet will also turn off, automatically.

Initiated from Steam Machine by James Watt

Control system is a set of equipments to control, to order and to arrange a state of system.

Researcher Chairman Profile

ERWIN Susanto, S.T., M.T., Ph.D active as a lecturer of Signals and Systems and Control Engineering in Electrical Engineering Department Telkom University (Tel-U) since 2007. Lecturers were initially pursue the field of Electricity is starting to focus on control systems in line with the development trend of weak current electro technology.

Graduated Bachelor of Electrical Engineering in ITS 1998, Erwin took Master on Mechanical Settings to research topics Predictive Control in ITS and graduated in 2006. In 2009, taking Post Graduate at Kumamoto University to research topics Optimal Control and Robust Control in Intelligent Control Laboratory until 2012.

In 2007 and 2009 he get a research grant funds Internal and Young Lecturer Higher Education. Year 2014 - 2015 conducted research with the Fundamental Research Grant scheme. In 2015, Erwin being a member of the National Excellence research with nano-satellite development topics.

This study was published in Indonesia and Japan, among others in ICIC Express Letters (icicel.org) and IMA Journal Mathematic Control & Information and Telkomnika June 2015 edition. ❖

Erwin Susanto, S.T., M.T., Ph.D.

There are many methods and algorithm of control system that are applied, starting from simple system such as automatic feed water tank, to a very complicated system with huge scale, such as aerospace control system.

Control system itself started from the invention of steam machine by James Watt. The first work that is very important in control system was centrifugal governor to control the speed of this steam machine made in 18th century.

Another important work in the development of control theory was made by Minorsky, Hazen, Nyquist, et al. In 1922, Minorsky made an automatic controller to drive a ship and he showed how to determine the stability from differential equation that pictured physical system.

In 1943, Hazen introduced ReleServomekanis term that responded to changing input. During 1940s decade, frequency method enables the engineer to design linear feedback control that fulfils working requirements. The frequency response method enabled engineers to design linear control system with feedback that fulfilled working requirements. By the end of 1940, until the beginning of 1950, the method of position of root in control design greatly developed and it has been used until now.

Control system actually can be found not only in electronics engineering but also in mechanics area, process chemistry or other areas of knowledge. It is true that control system is dominated by electronics engineering area, considering the easiness of the conversion, storage and process of electrical signal.

The character of this research is fundamental and it is focused on math modelling, and continued by strong control design (robust) for system with uncertainty character. Later on, the outcome of this research is expected to be implemented, for example, in control system of rotation and electrical motor and others.

For that reason, as the continuity of control system research, a research is being conducted in which the outcome is the implementation of control design on reaction wheel that is applied in Nano satellite. Besides that, this research also found important outcomes for teaching activity, i.e. enriching teaching materials of control system, so it will improve lecturers' and students' knowledge in control design. ❖

Cited from a research:
"Model Guaranteed Cost Pada System Netral Tak Pasti dengan Waktu Tunda yang Berubah Terhadap Waktu: Sistem Kendali dan Penyaringan (Filtering)"
by **Erwin Susanto, S.T., M.T., Ph.D and Junartho Halomoan, S.T., M.T.**

SCHOOL OF ELECTRICAL ENGINEERING

- Major
  Bachelor of Computer System
- Title
  Prototyping Hardware and Software Keylogger For Security Penetration Testing Computer Systems and the National Intelligence Purposes
- Researcher Team
  Yudha Purwanto, S.T., M.T.
  Surya Michrandi Nasution, S.T., M.T.
  Ir. Agus Virgono, M.T.
- Fund
  IDR 50,000,000
- Scheme
  Competitive Grant Research

- Major
  Bachelor of Telecomunication Engineering
- Title
  Design and Implementation of Remote Sensing Systems to Achieve Independence Nanosatelit Payload Satellite College
- Researcher Team
  Dr. Heroe Wijanto, MT.
  Dr. Erwin Susanto, S.T., M.T.
  Budi Prasetya, S.T., M.T.
  Budi Syihabuddin, S.T., M.T.
  TPM - Bandung Techno Park (BTP): Inung Wijayanto, S.T., M.T.
- Fund
  IDR 700,000,000
- Scheme
  National Strategic Excellent

The Era of Social Network Analysis (SNA) for Business Area

According to Dr. Tronick, human has a nature to make a relationship with others since they were born. We know it as social relationship. A number of toddlers who meet somewhere will somehow end up in conversation and play together even though there are no instructions from the adults. Adults who have the same hobby or interest will gather in a community.
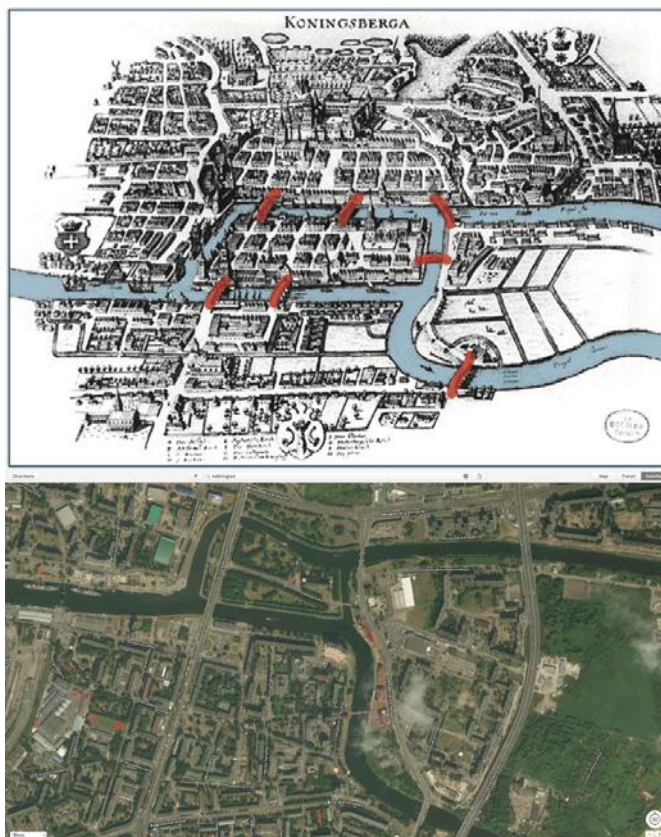
The seven bridges of Königsberg then (common.wikimedia.org) and now (screen capture from Apple Map). From the seven bridges in Euler era, two were destroyed because of world war two.

In Bandung City, we can find a wide range of communities for almost every hobby. For example, in Jalan Taman Sari, we can find the secretariat of Yamaha NMax scooter owner community. In Jalan Purnawarman, we can find a place where people who love and learn French culture gather together.

In Pasteur, especially in a mall, we can see people play or have a regular competition held by the community of Tamiya car fans. Of course, there are many other similar locations in Bandung.

Does a community make it compulsory to provide a physical location as a place to gather? It is apparently not.

By the end of 20th century, Indonesian students who were studying abroad formed an online community, namely KasKus (now it is famous for its trading activity). In the beginning of 2000s, the owner of Apple made a community in the form of mailing-list apple-id. There are also photography fans that established a photographer community dot net.

A community, especially online community, almost barely recognizes organizational structure. Although a community has one or more people who role as pioneers, but, during the activity, it is the contributions from the members that make the community alive.

If there is no formal regulation in a community, can we measure the performance of the community? How? This is where we are introduced to graph theory.

Before that, let us go to Königsberg City (It is now

called Kaliningrad). In the 18th century, there was a challenge to cross 7 bridges of Königsberg. Not only to cross it, but also to finish the challenge, someone must pass the bridges once.

Being curious with the solution, a mathematician, Leonard Euler showed the blueprint of bridges into a graph. Through this visualization, Euler showed that the challenge was impossible to resolve.

Euler tried to represent the bridges and lands connected by nodes (dots) and edges (lines). Land was symbolized by node, and bridge was symbolized by edge. So, if a land was connected to another land by a bridge, there would be a node and another node that was connected with a line (see figure 2). The solution that was invented in 1936 is believed to be the basic of graph theory, one of the branches of math.

Now, how can we use the graph theory in a community? We can use the same analogy as one used by Euler. If Euler
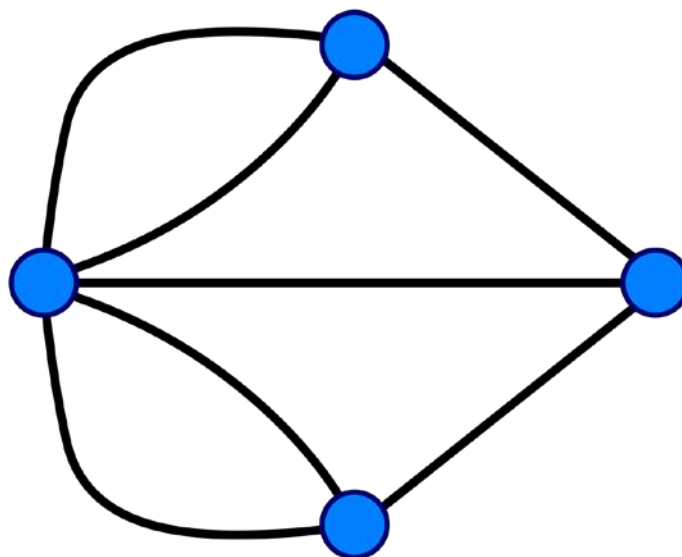
Representation of 7 Bridges of Königsberg in the form of nodes and edges (common. wikimedia.org)

used a node and an edge to symbolize a land and a bridge, we can use a node and an edge to symbolize people (or internet users), and identify the correlation that might happen.

In social life, this graph theory becomes the basic of a method namely Social Network Analysis (SNA). Is it a breakthrough in social media era? The answer is yes and no.

No, because the use of SNA was already applied by Jacob Moreno (a psychiatrist) in 1930s, to analyze the correlation of friendship in an elementary school. It utilized

a very simple way; it observed the activity of students in that elementary school during break time, and Moreno noted the activity of the students in that elementary school.

Every student was symbolized by a node. If a student played or talked to other students, Moreno drew a line (an edge) from a node that represented that student to another node that represented his friend. After he drew it into a graph, Moreno could see the most popular student. For example, by counting who had the most edges in the graph.

(see figure 3b). it is a simple Method, isn't it?

The other answer is: Yes, since digital record from every activity in social media simplify the task of the researcher to collect relational data of internet users. Social media becomes one of the dominant factors to make SNA method repeat its popularity.

The activity in social media can be interpreted in a graph by, for example, symbolizing the user as a node, and an edge to connect that user with his uploaded messages or with other users who are actually his friends in that social media.

For example, figure 3 shows the representation of a graph from social interaction that was taken from Telkom University facebook page. Here, the nodes represent facebook users that participated in that page, and also messages contained in that page. While the edges represent the relationship between facebook users and messages. For example, if a user writes a message in Telkom University
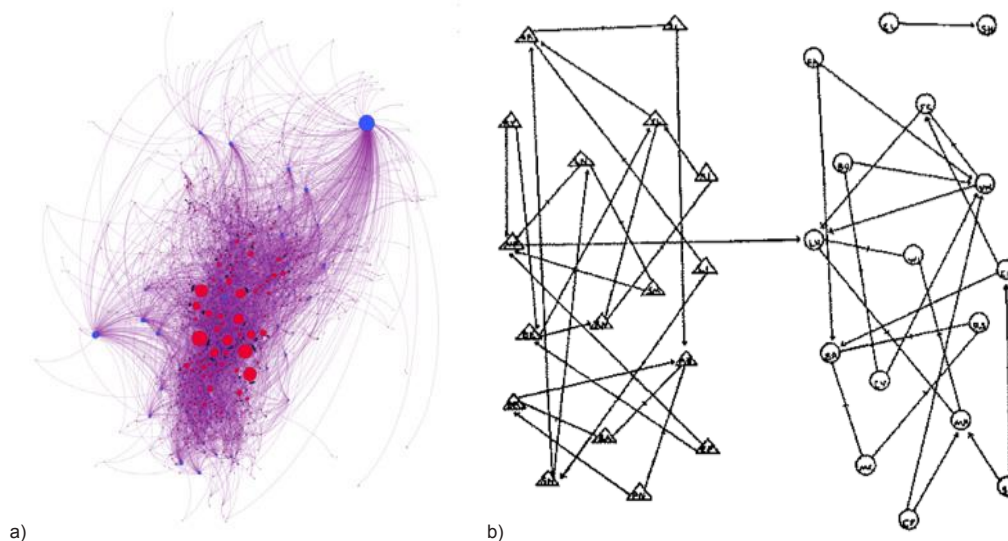
a) Representation of correlation graph among users at Telkom University facebook page (Peranginangin, Y., Alamsyah, A., 2015)   b) Representation of correlation graph among students in a school (Newman, M. E. J., 2010)

facebook page, there will be a line (an edge) between two nodes that represent the user and the message that he wrote. Also, when someone does "like" or "share" a message.

The problem is when a network consists of more than ten thousand nodes, and they are connected, how can we analyze them? Visually, the representation of the graph as seen in 3a might not talk much. But there is a piece of good news.

Graph theory provides a number of matrices that can be used to analyze complex networks. Some most-used matrices, such as central-ity (who the central actor is, or what the most important node is in a network), modularity (how a group or community is shaped in a network), and density (how dense the relation among the nodes in a network). And there are still many other SNA matrices.

Instead of doing manual calculation, just like how it was done by Jacob Moreno, algorithm software can do the task for us. It is just because the speed of the algorithm is limited by the power of hardware (in this case, it depends on the processor power). The calculation speed is also related to network complexity that will be analyzed.

In social network, if the number of the nodes in a network increases, the com-

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- Major
  Bachelor of Telecomunication Engineering
- Title
  Accompanied Learning Tool Development Interactive Media Using Adobe Flash and Powerpoint Program to Improve Outcomes Learning Algorithms And Programming On University Students Telkom Bandung
- Researcher Team
  Hurianti Vidyaningtyas, S.T., M.T.
  Leanna Vidya Yovita, S.T., M.T.
  Ratna Mayasari, S.T., M.T.
  TPM - Universitas Tanjungpura:
  Dr. Drs. Bambang Hudiono M.Pd.
  Dr. Yulis Jamiah M.Pd.
- Fund
  IDR 76,000,000
- Scheme
  Partnerships Research

- Major
  Bachelor of Telecomunication Engineering
- Title
  Implementation Steganography Text With the DCT Compressed and Encrypted with LZW - RSA on Android
- Researcher Team
  Iwan Iwut Tritoasmoro, S.T., M.T.
  Gelar Budiman, S.T., M.T.
  Ledya Novamizanti, S.Si., M.T.
- Fund
  IDR 55,000,000
- Scheme
  Competitive Grant Research

plexity level of the network also increases exponentially. With a huge number of nodes, say millions, it is important to have more processors to count SNA matrix faster. One of ways to fasten the counting with limited processor is by optimizing the existed algorithm.

One of ways that has been done is by doing graph compression. We merge same nodes and edges to become supernodes and superedges. The aim is to reduce graph complexity that finally fastens the calculation process.

The result shows that the network data that is saved (for some cases) can be reduced up to 40%, and the calculation process of SNA matrix is faster up to 50%. Every effort in simplifying the graph will surely lead to the decrease of the accuracy of the calculation result, and this is a work that is included in the agenda of our next research.

Efficient algorithm, in the end, will make analysis process cheaper. The availability of abundant and real-time social media data opens opportunity for stakeholders to make a more agile organization.

Imagine if we can monitor the responses from a community of our marketing program in real-time. Or, we can predict staff's performance in an organization without doing time-consuming survey. Organization policy can be more effective, and organization can have backup resources that can be allocated for more important aspects.

The key is how an organization adopts this technology fast, and makes it a competitive advantage. ❖

Cited from a research:
"Penyederhanaan Kompleksitas Meterik Centrality dalam Large Scale Social Network di Bidang Ilmu Manajemen"
by **Yahya Peranginangin, S.T., MBA and Andry Alamsyah, S.T., MBA.**

The Profile of the Head of Research Team

Yahya Peranginangin, S.T., MBA

YAHYA Peranginangin, S.T., MBA graduated from Mechanical Engineering (Aeronoutics), Bandung Institute of Technology (ITB) for his undergraduate program in 1998. After accomplishing his master degree in Business in 2004, Yahya started to work as a Tel-U lecturer (fka Telkom Institute of Management – IM Telkom) in 2011.

Previously, Yahya had worked in a security company based in Australia for Indonesia branch. In this company, Yahya developed visual technology intelligent to change manual security system (done by human) into technology.

Besides that, Yahya had worked in a developer house to develop some systems. His interest in Tel-U (fka IM Telkom) was because of his focus that lied on technology (Telecommunication and Informatics) even though his educational background was management. It was in line with his profession that mostly involved in IT Business. ❖

1. Publication in an international seminar "The 1st ISCLO" entitled: "Effective Knowledge Management using Big Data and Social Network Analysis".

2. Publication in an international seminar "The 2nd ICOICT" entitled: "Social Network Modelling Approach for Brand Awareness".

3. Publication in an international seminar "The 2nd ISCLO" entitled: "Learning Organization using Conversational Social Network for Social Customer Relationship Management Effort".

4. Publication in an international seminar "The 3rd International Conference on Computation for Science and Technology" entitled: "Reducing Computational Complexity of Network Analysis using Graph Compression Method for Brand Awareness Effort".

5. Publication in an international seminar "The 3rd ICOICT" (2015) entitled: "Social Engagement Analysis in Online Conversation of Indonesia Higher Education".

6. Publication in an international seminar "The 3rd ICOICT" (2015) entitled: "Network Market Analysis using Large Scale Social Network Conversations of Indonesia's Fast Food Industry".

7. Publication in an international seminar "The 3rd ICOICT" (2015) entitled : "Indonesian Music Fans Group Identification using Social Network Analysis in Kaskus Forum".

8. Publication in "Graph Sampling Approach for Reducing Computational Complexity of Large Scale Social Network".

9. Publication draft for an international journal "Journal of Physics" entitled : "Multiple Regression to Analyse Brand Awareness in Social Graph".

RESULTS GAINED IN RESEARCH ACTIVITY

SCHOOL OF ELECTRICAL ENGINEERING

- Major
  Bachelor of Electrical Engineering
- Title
  Implementation Purnarupa Adaptive Modulation And Coding and Adaptive Resource Block on Broadband Wireless Technology
- Researcher Team
  Dr. Ir. Rina Pudji Astuti, M.T.
  Dr. Arfianto Fahmi, S.T., M.T.
  Linda Meylani, S.T., M.T.
- Fund
  IDR 59,500,000
- Scheme
  Fundamental

- Major
  Bachelor of Electrical Engineering
- Title
  IPTV Network -Based Broadband Network Homeplug AV PLC
- Researcher Team
  Dr. Ir. Basuki Rahmat, M.T.
  Muhammad Iqbal, S.T., M.T.
  Ratna Mayasari,, S.T., M.T.
- Fund
  IDR 56,000,000
- Scheme
  Competitive Grant Research

Moral Messages from
Traditional Games

Lately, there are many communities in social media that upload so many kinds of traditional games that used to be played, long time ago. The memories of these traditional games are unforgettable for those who played it. However, it is now abandoned.

SCHOOL OF ELECTRICAL ENGINEERING

Yes, a number of traditional games are substituted by modern games that mostly utilize the technology of gadget. But actually, traditional games are easier, cheaper and have more moral values.

Luckily, there are many societies that are still concerned about traditional games. One of them is Zaini Alif through Hong Community that relentlessly invites children to play traditional games. He has also conducted many researches to collect a number of traditional games to preserve it from extinction. Furthermore, Zaini Alif focuses himself in a research about traditional games and he made a community that is concerned about traditional games.

Even so, there are still many people who are less concerned about the conservation of traditional games as part of culture. Therefore, the researches about traditional games were re-conducted to market, remind, and reconstruct this idea, especially to kids.

According to Zaini Alif, Indonesia has more than 800 kinds of traditional games. This record was gained after a field study and observations were conducted. This number may have increased, since there are many traditional games that have not been listed in the database.

Specifically in West Java, there are around 250 kinds of traditional games that have been listed since 2003–2011. However, from this number, there are only some that are still remembered and played by children. Even for today, especially in rural areas, such as Bandung and its surrounding, there are many children who do not know about the forms of traditional games from West Java.

For that reason, 2 lecturers from Visual Communication Design (DKV) program, School of Creative Industry, Sonson Nurusholih and Gandara Permana assisted by Affan Miraza (a student of DKV program), conducted a research by documenting some traditional games from West Java that still exist. This research strives to visualize some kinds of traditional games in the form of documentary photos. The aim is to change the paradigm; traditional games considered old-fashioned and not fun must be changed to be something fun and playable. The community also exists as part of Indonesian traditional culture, not only as an ornamental accessory, but also as a value that clings to the society itself.

In this research, researchers selected 20 kinds of traditional games that would be played and they would be the research objects. These twenty games were: Bebeletokan, Bedil Jepret, Boyboyan, Cingciripit, Congklak, Dam-daman, Engrang, Engrang Batok, Galah Asin, Galah Bandung, Hompimpah, Kokoleceran, Kukudaan, Paciwit-ciwit Lutung, Rorodaan, Sondah, Suten Suit, Tetemute, Ucing Peungpeun, and Ucing Sumput. Although there are still many other games and traditional games tools in West Java, these games were selected based on the investigation of playability, especially in Bandung. Until now, Zaini Alif has listed 130 games that are still played in West Java.

Gathering kinds of traditional games, especially in West Java region is not an easy thing to do because there are many games that has already disap-

peared, or even unrecognized by the community. There is nothing in the previous research that discussed traditional games from scientific point of view. Another problem is the lack of literature review from previous researches and references for this kind of research. For instance, the categorization of shapes, kinds, rules, how the games are played, number of players, the end of the games and other classifications have not been stipulated until now.

The Educational Values of The Game ala Bloom

For the research that was conducted in 3 months, researcher chose Cimahi as the location of the research. The reason is because, a few years ago, there was still a place to play traditional games, in a field that was surrounded by bamboos. This research used quantitative approach by descriptive analysis method and data was obtained by field observation, deep interview and literature review.

The first thing to do was finding as much as information through literature review. Information was gathered from a

book wrote by James Danandjaya about Indonesian folklore. The book states that traditional game is divided into several categories.

First, it is divided into three parts; a game that trains the sensitivity through sound, movement and development, and that prepares for their adulthood (special). Second, observation and simulation was conducted with the help of the children in Cimahi – Cimahi city. This simulation was, then documented by camera and the result was selected and analyzed.

The result of the observation shows that there are traditional games that use special tools, for example Engrang uses bamboo, Engrang Batok uses batok (hard shell of coconut), and there are also games that uses stem of banana bunch, leaves, wood, etc.

There are 20 traditional games that are modelled in the simulation based on James Danandjaya category. This is where traditional games consist of two characters; the first is games characterized as play (recreative – play, games in the form of simulation) and games characterized as games (competitive)

Another point of this traditional game simulation and documentation if it is associated with domain initiated by Benyamin Bloom or known as Bloom Taxonomy, it found the existence of education purposes, which is cognitive, affective, and psychomotor.

that is divided into three parts, they are: games of chance (take turns to win and lose), games of strategy, and games of physical skills (games that need power and agility).

The result of the documentation from simulation shows that one game could be interpreted differently because recreative and competitive game is only

slightly different. For example, game of Bebeletokan is a form of game that is categorized as recreative game in the form of the tool (Bebeletokan – gun). However, in the practice, this game is considered as competitive game when children agree to develop a game to contest the group by playing battle. So, based on the research conducted by Zaini Alif, previously, to decide the group of recreative or competitive can be taken from the dominan character of the game itself.

The other result of traditional game documentation is related to the area or domain that is stated by Benyamin Bloom or it is widely known as Bloom Taxonomy. It is found that there are activities that are aimed at educational results; those are cognitive, affective, and psychomotoric process.

It is proven from simulation of traditional games played, for example, in Galah Asin and Galah Bandung, children are demanded to work together and find a good strategy to pass the enemy lines.

Also in other traditional games, such as Engrang, Eng-

rang Batok, Bebeletokan, Bedil Jepret (psychomotoric), Boy-boyan, Cingciripit, Congklak, Dam-daman, Hompimpah, Kokoleceran, Kukudaan, Paci-wit-ciwit Lutung, Rorodaan, Sondah, Suten Suit, Tetemute, Ucing Peungpeun, and Ucing Sumput, after the activities were analyzed, they contain numerous educational values, both physically and spiritually.

From the explanation above, it can be concluded that by documenting the kinds of traditional games in West Java, it is expected that there will be appreciators who are interested in them and try to preserve them from extinction. This research can also be a reference for anyone who wants to make the same research and it is wished that there will be an improvement for further research. ❖

Researcher profile

SONSON Nursholih was born in Bandung, January 21st, 1974. After completing his undergraduate degree in Visual Communication Design (DKV) program, STISI Bandung (now known as School of Creative Industries, Telkom University), he pursued his master degree at Institut Seni Budaya Indonesia (ISBI) Bandung.

The researcher, who loves photography, writing, and travelling, has written some books related to travelling and other things linked to Indonesian culture, especially traditional games. The researcher, now, is a lecturer at School of Creative Industries, Visual Communication Design program, Telkom University. ❖

Sonson Nursholih, M.Sn

SCHOOL OF ELECTRICAL ENGINEERING

- Major
  Bachelor of Telecomunication Engineering
- Title
  Development of New Algorithm Variable CCH / Sch Interval Multichannel Mac (Vcimmac) Effect Against Node Mobility In the IEEE standard 1609.4 (Vanets)
- Researcher Team
  Dr. Ir. Rendy Munadi, M.T.
  Doan Perdana, S.T., M.T.
- Fund
  IDR 200,000,000
- Scheme
  Basic Research of INSINAS Ristek 2015

- Major
  Bachelor of Electrical Engineering
- Title
  Multi - band Spectrum Sensing Multiple Testing Procedure Based on Cognitive Radio
- Researcher Team
  Dr.Ing. Fiky Y. Suratman, S.T., M.T.
  Gelar Budiman, S.T., M.T.
  Iswahyudi Hidayat, S.T., M.T.
- Fund
  IDR 200,000,000
- Scheme
  Basic Research of INSINAS Ristek 2015

INTERNAL FUND RESEARCH 2015

INTERNATIONAL GRANT RESEARCH

10

PARTNERSHIP RESEARCH

1

SCHOOL OF ELECTRICAL ENGINEERING

SCHOOL OF INDUSTRIAL ENGINEERING

3 INTERNAL FUND RESEARCH

4 INDEPENDENTLY RESEARCH FUND

10 PARTNERSHIP RESEARCH

10 INTERNATIONAL GRANT RESEARCH

SCHOOL OF COMPUTING

- Major
  Bachelor of Computational Science
- Title
  Characterization Graf Operating Results Kromatiknya f- Based Index for Supporting Computational Time Optimization
- Researcher Team
  Dr. Adiwijaya, S.Si., M.Si.
  Bayu Erfianto, S.Si., M.Sc.
- Fund
  IDR 66,000,000
- Scheme
  Fundamental

- Major
  Bachelor of Informatics Engineering
- Title
  Study and Application of Process Mining On Business Process Audit
- Researcher Team
  Angelina Prima Kurniati, S.T., M.T.
  Imelda Atastina, S.Si., M.T.
  Guntur Prabawa Kusuma, S.T., M.T.
- Fund
  IDR 69,500,000
- Scheme
  Competitive Grant Research

INTERNAL FUND RESEARCH 2015

INTERNAL FUND RESEARCH — 9

PARTNERSHIP RESEARCH — 6

INDEPENDENTLY RESEARCH FUND — 2

INTERNATIONAL GRANT RESEARCH — 2

SCHOOL OF COMPUTING

SCHOOL OF COMPUTING

INTERNATIONAL GRANT RESEARCH

1

INTERNAL FUND RESEARCH

15

SCHOOL OF ECONOMICS & BUSINESS

■ Major
Bachelor of Informatics Engineering
■ Title
Easy Used And Customizable General Reporting Application
■ Researcher Team
Kusuma Ayu Laksitowening, S.T., M.T.
Yanuar Firdaus Arie Wibowo, S.T., M.T.
■ Fund
IDR 61,000,000
■ Scheme
Competitive Grant Research

■ Major
Bachelor of Informatics Engineering
■ Title
Palm - Biometric study of Palm as a Feature Individual Identity
■ Researcher Team
Tjokorda Agung Budi Wirayuda, S.T., M.T.
Bambang Pudjoatmodjo, S.Si., M.T.
Febryanti Sthevanie, S.T., M.T.
■ Fund
IDR 60,500,000
■ Scheme
Competitive Grant Research

■ Major
Master of Informatics Engineering
■ Title
Insertion Extraction Feature Fingerprint On QR Code
■ Researcher Team
Ir. Ari Moesriami Barmawi, M.Sc., Ph.D.
Fazmah Arif Yulianto, S.T., M.T.
■ Fund
IDR 55,000,000
■ Scheme
Higher Education Excellenct

INTERNATIONAL GRANT RESEARCH

1

INTERNAL FUND RESEARCH

12

PARTNERSHIP RESEARCH

2

SCHOOL OF COMMUNICATION & BUSINESS

INTERNAL FUND RESEARCH

17

SCHOOL OF CREATIVE INDUSTRIES

PARTNERSHIP RESEARCH

1

INTERNAL FUND RESEARCH

14

INDEPENDENTLY RESEARCH FUND

16

SCHOOL OF APPLIED SCIENCE

PARTNERSHIP RESEARCH

2
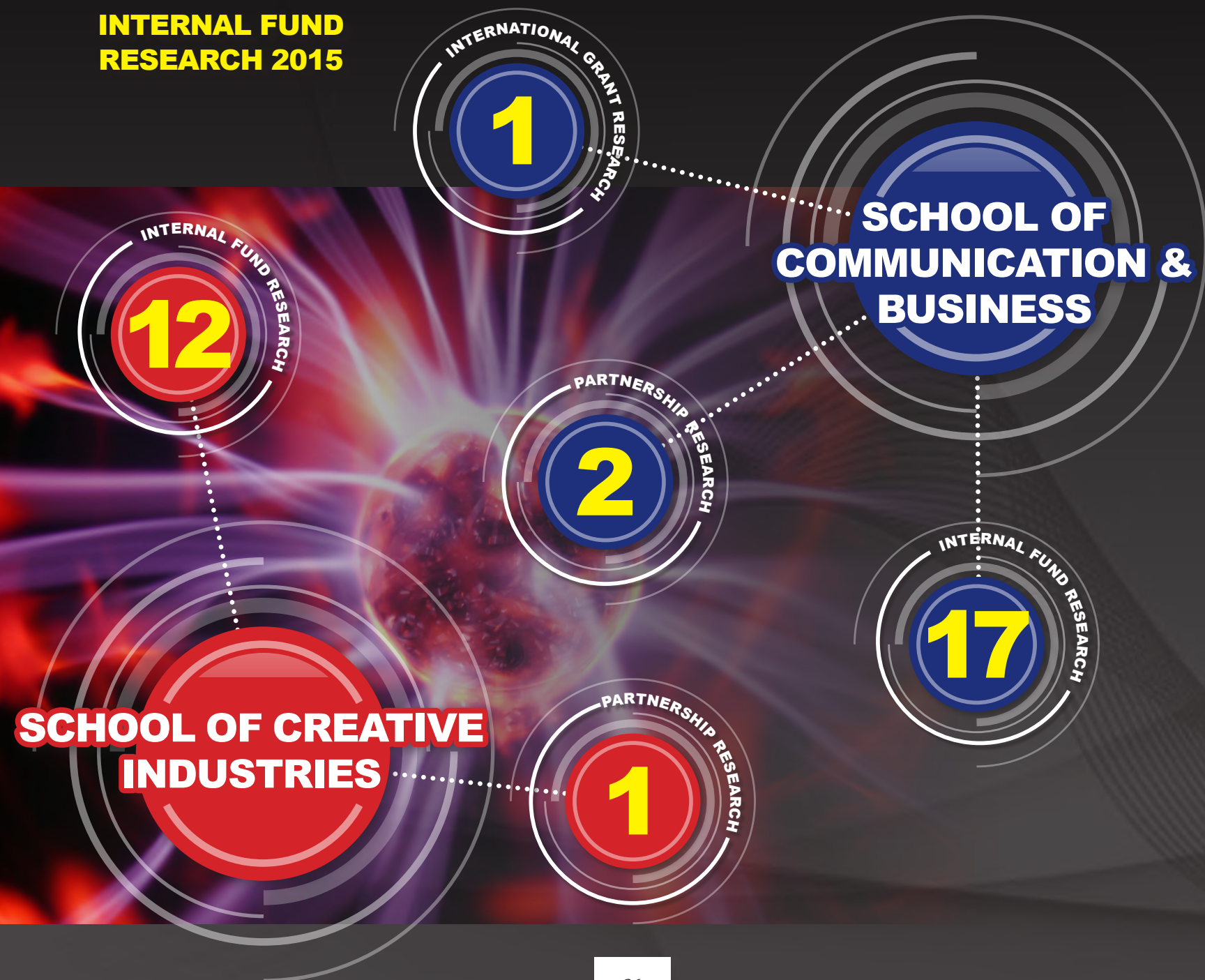
SCHOOL OF COMPUTING

- Major
  Bachelor of Informatics Engineering
- Title
  Social Network Analysis for Social Media Marketing In Title Helps SMEs (Small and Medium)
- Researcher Team
  Warih Maharani, S.T., M.T.
  Dr. Adiwijaya, S.Si., M.Si.
  Alfian Akbar Gozali, S.T.,M.T.
- Fund
  IDR 60,000,000
- Scheme
  Competitive Grant Research

- Major
  Bachelor of Computational Science
- Title
  Analysis of High Performance Computing Approach For High Complexity Computational Issues Case Study : Travelling Salesman Problem With Genetic Algorithm
- Researcher Team
  Yuliant Sibaroni, M.T.
  Fitriyani, M.T.
  Fhira Nhita, M.T.
- Fund
  IDR 60,000,000
- Scheme
  Competitive Grant Research
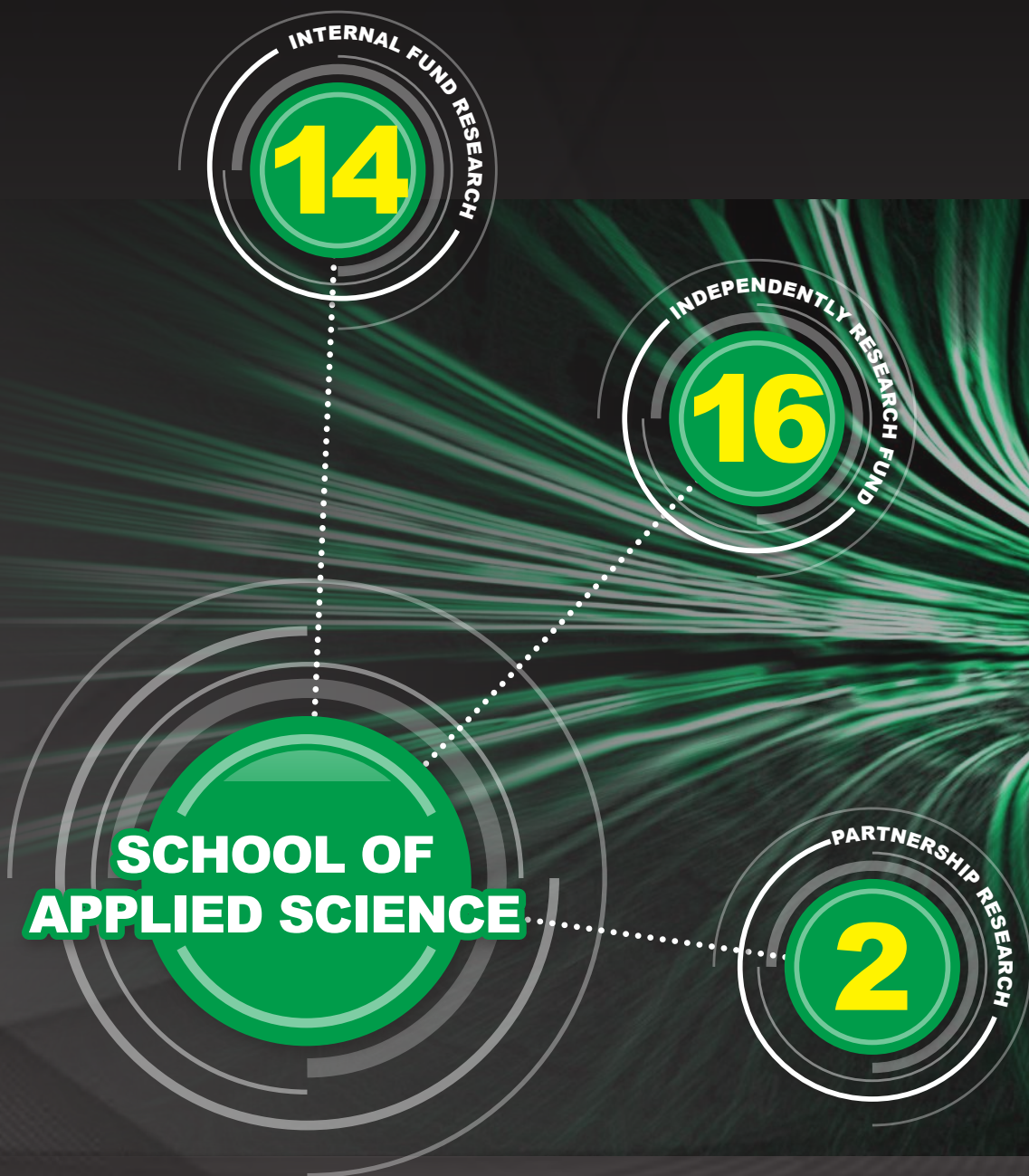
Dr. Eng. Asep Suhendi, S.Si., M.Si.

Functioning Overseas for the National Development

Functioning based on the area of expertise is one of a person's satisfactions. However, functioning in a field that is enjoyed by many people, even people coming from other countries, and admitted by people from other countries is, indeed, a big pride. It is because that person is able to introduce Indonesia's good reputation. It is too bad, because there are only few who go back to their country and share the knowledge, because many of them prefer to stay overseas. This is not what happened to a lecturer of Telkom University (Tel-U), Dr. Eng. Asep Suhendi, S.Si., M.Si.

Dr. Eng. Asep Suhendi, S.Si., M.Si.

After finishing his doctoral program and completing his research in Japan, the graduate of Hiroshima University decided to go back to Indonesia for teaching. In fact, he is already listed as a researcher with most Q1 publication.

"The term Q1 actually became popular recently in Indonesia. In other countries, it is called impact factor for science publication. There, I have a target to publish with impact factor of 3. Meanwhile, the impact factor of Q1 is 2. So, the number of papers that I have published during my Doctoral study is about 8 papers, and they are already included in Q1. After that, during my duty at Tel–U, I have already published five papers," said Asep.

The term Q1 or impact factor is the influence of one journal to other journals that is submitted or cited or referenced by other researchers and also the influence of this journal to the related science. The higher the impact factor of a journal, the bigger the contribution of the paper to science.

The researches conducted

> **"**
> The term Q1 actually became popular recently in Indonesia. In other countries, it is called impact factor for science publication. There, I have a target to publish with impact factor of 3. Meanwhile, the impact factor of Q1 is 2. **"**

by Asep during his stay in Japan were done with his advisor pofessor, and most of his researches are realted to industry. The researches conducted by Asep in Japan are divided into two parts: research during his Doctoral study on chemical engineering and research of his Post-Doctoral in magnetic material (FE16N2).

Asep was previously competent in instrument area.

"My expertise is in instrument area, and then I used it for photosynthesis material. So, I applied some methods to synthesize some materials in controllable manner. Then, I wrote some papers from those methods. The researches I made are mostly related to nano particle. I usually utilized silica mixed with polystyrene to make particles with many kinds of shape and structure, i.e. solid, hollow, or coated. The size of particle usually ranged from tens to hundreds nanometre," he said.

Meanwhile, his post-doctoral research was a Japanese project directed to an effort to energy saving. According to Asep, aside from finding renewable energy, Japan strives to save energy and one of them is by conducting a magnet material research. The use of magnet material is widely found in automotive and industrial machines. The use of a strong yet cheap magnet will result in effective and efficient machine performance. This research was conducted with the collaboration with the in-

SCHOOL OF COMPUTING

- Major
  Bachelor of Computational Science
- Title
  Determination These Public Transportation Systems
- Researcher Team
  Sri Suryani Prasetiyowati, M.Si.
  Izzatul Ummah, M.T.
  Mahmud Imrona, M.T.
- Fund
  IDR 64,000,000
- Scheme
  Competitive Grant Research

- Major
  Bachelor of Computational Sciencei
- Title
  Godunov Method For Road Network with Phase Transitions
- Researcher Team
  Erwin Budi Setiawan, S.Si., M.T.
  Rian Febrian Umbara S.Si.,M.Si
- Fund
  IDR 60,000,000
- Scheme
  Competitive Grant Research

- Major
  Bachelor of Informatics Engineering
- Title
  Expansion Method Perfomance Factor Analysis (PFA) To Predict Knowledge Group In Collaborative Learning
- Researcher Team
  Dade Nurjanah, S.T., M.T., Ph.D.
  Hetti Hidayati, S.Kom., M.T.
- Fund
  IDR 59,000,000
- Scheme
  Fundamental

dustry and it was supervised by the Ministry of Economy, Trade, and Industry of Japan.

"In this research, our lab was assigned to separate particles, since particles are usually agglomerated or attached one to another. It is because the synthesis process needed high temperature by using Bead-mill's dispersion method, which is the grinding process of particles, helped by micrometric solid ball to pound and separate the particles. These dispersed particles were easier to manage. Further, the particles were arranged in a very strong magnetic field; the magnet was given a strong adhesive to make their intensity very strong. It was possible because the size of the particle was only 60 -70 nanometre and it has a single magnet momentum, so, it could be directed in a homogeny way," explained this Physic Engineering lecturer.

His interest in the field of instrument started from his hobby in fixing his computer, both the hardware and software since he was in high school where he majored in Computer Electronics. After he graduated from Tech-

nical Vocational High School (STM) Pembangunan Bandung in 1999, Asep started to work. In 2001, he was finally accepted in Physics Engineering, Faculty of Math and Science, Bandung Institute of Technology (ITB).

This was where Asep was introduced to low current instrument measurement system, such as electric current which is under nanoampere size. In 2008, Asep graduated from his Master program of ITB and he worked for two years in an exploration company. Having had a scholarship, Asep finally continued his doctoral program in Japan until 2013. In 2014, he was accepted at Tel-U. However, he was active in this campus after he finished his research contract in Japan in 2015.

Researcher Must be Careful in Making a Publication

Living for a long time in Sakura Country makes Asep understand the research culture there. This is what has changed Asep, from a curious boy into a meticulous and detailed person. His mindset changed after he met a very meticulous Professor. In fact, Asep was guided to be able to write well for his

research publications. According to Asep, the meticulousness and reader-oriented writing are the skeleton key for good publication.

"I started from technical vocational high school, bachelor and master degree as a curious practical person. When I started my doctoral program, I had to be able to write for publication. It was indeed hard. But in Japan, I was guided on how to express my ideas and research findings in the form of writing. No mat-

ter how good your research is, if it is not written, nobody will know about it. The most important things are meticulousness and details. Even to produce one paragraph, there will be repeated examinations and discussions to produce the best version. Secondly, when we draw, it should be reader-oriented, or it is understandable by the readers. My professor said that it should be understandable even for my wife and my kindergarten kid. It means that the pic-

ture should be detailed and easy to understand, so people can easily read and follow its flow," explained this man, who was born on May 6th, 1980.

According to Asep, an understandable and meticulous piece of writing will influence the reviewer examination. If reviewer finds mistakes when he is assessing it, he will perceive that the paper is not well written.

For overseas research, researcher is not allowed to have another focus when conducting a research. While in Indonesia, there are many researchers whose focus is divided between doing research and teaching, or thinking of other targets that should be accomplished.

"The experience of conducting research overseas can solve problems in writing, since in other countries, researcher has no other focus than conducting research, research and research. That is why I appreciate lecturers here who are still able to write with limited condition. In Japan, every sentence in a paper should be brief, concise, and clear. The use of this kind of sentences usually

makes a difference in Q1 and Q2. So, we should read many high-quality papers that are understandable," he further explained.

Asep described the differences of the research environment between Japan and Indonesia that influence the quality and direction of the research. The differences start from grants, cooperation, facility and research roadmap. In Japan, University researchers are only required to conduct two researches in a year even though the achievements always exceed the target.

In addition to that, researchers should not worry about funding, because it usually has been fixed from the very beginning. Aside from university funding, research grant is usually added from industrial community that usually comes to ask solution for their company's problems. Besides that, the need of facility is already solved by providing complete infrastructure. Finally, research roadmap in Japan is already formed even for the next ten years (gabare project).

"It is rather different here. Even though there is a fund-

ing system for research, but the realization is sometimes different from the initial plan. For facility, it is not complete here; there is no characterization equipment that is very important for nano research. However, we establish cooperation with other institutions that have these tools. For example, for Scanning Electron Microscope (SEM) tool, we usually go to ITB. Or, if the needed tool is not available in Indonesia, I usually contact my connection in Japan. But, it impacts to the duration of the research; the research will take longer time. For that reason, if Indonesia wants to improve its research, it is important to build cooperation with stakeholders, for example, higher education institutions, governments, and industries. For the time being, for the universities in Indonesia such as Tel-U, it is hard to start cooperation with industries, but it is not impossible for Tel-U to encourage the lecturers and students to be accepted in global community. One of the ways is by inclusion in international-scale researchs," he concluded.❖

SCHOOL OF ECONOMICS & BUSINESS

■ Major
Bachelor of Management Business Technology and Informatics
■ Title
Simplifying Complexity Community Detection For Large Scale Social Network in the Field of Management Science
■ Researcher Team
Yahya Peranginangin
Andry Alamsyah, S.Si.,MSc.
TPM - Institut Teknologi Bandung (ITB):
Dr. Muchtadi Intan Detiene, M.Si.
■ Fund
IDR 80,000,000
■ Scheme
Partnerships Research

■ Major
Bachelor of Management Business Technology and Informatics
■ Title
Business Process Design Supply Chain Management For Small and Medium Business Center Sablon Using Model SCOR (Supply Chain Operations Reference)
■ Researcher Team
Ir. Dodie Tricahyono, M.M., Ph.D.
Herry Irawan
Ratih Hendayani
■ Fund
IDR 55,000,000
■ Scheme
Competitive Grant Research

Ithenticate
Reminder of Plagiarism
for Researcher

Plagiarism or imitation of scientific works has become the main topic for researchers and academics. Trust is at stake when a lecturer or researcher once is caught to conduct plagiarism. It is certain that the researchers would not be trusted by other parties and the owned title will possibly be revoked by the authorities. Not to mention if the parties being plagiarized could not accept, the matter of plagiarism must be sued in the realm of law. Plagiarism is considered to be the same as the theft of works, so that it could be a long and complicated affair if it is caught.

Telkom University (Tel-U) has a number of strategies to avoid plagiarism toward its academic community. One of them is by preventing plagiarism through the examination of scientific works created in the internal environment of Tel-U. Before the scientific papers are published to the outside, the campus will examine a number of scientific works through Ithenticate application.

"This application is in order to support us in Tel-U, so there is a kind of internal filter to the scientific works prior to broader publishing," said the Library Manager of Tel-U, Nurul Fitria ST, MM.

Ithenticate application is app-plied by Tel-U as a plagiarism filter after a number of studies. At first, the campus must choose the types of applications that can be used to filter incoming works. Instead of us-ing ithenticate, a number of existing campuses use other applications for internal filter, for example Turn-It-In application. However, after some

consideration, finally Tel-U chose Ithenticate.

"From our point of view, Ithenticate features are more powerful and more focused on research. While Turn-It-In more towards case studies for high schools, " he continued.

Ithenticate had some packages offered to college in its use with different prices. Tel-U itself tries to use the package with a subscription fee of $ 13,500 per year, with a given quota for only to 200 users. This application came into its use in 2014 at Tel-U. Although it is considered to be quite expensive, this application is very supportive of Three Pillars of National Higher Education (Tri Dharma Perguruan Tinggi) and maintains the credibility of the academic community.

According to Nurul Fitria-- Wuwul --her nickname, from the quota of 200 users, Ithenticate can be used to upload 10,000 documents for all kinds of scientific works with a number of provisions per document, both of megabytes size and number of pages per document. Admittedly, the use of Ithenti-

cate is not optimal, because it is still newly applied.
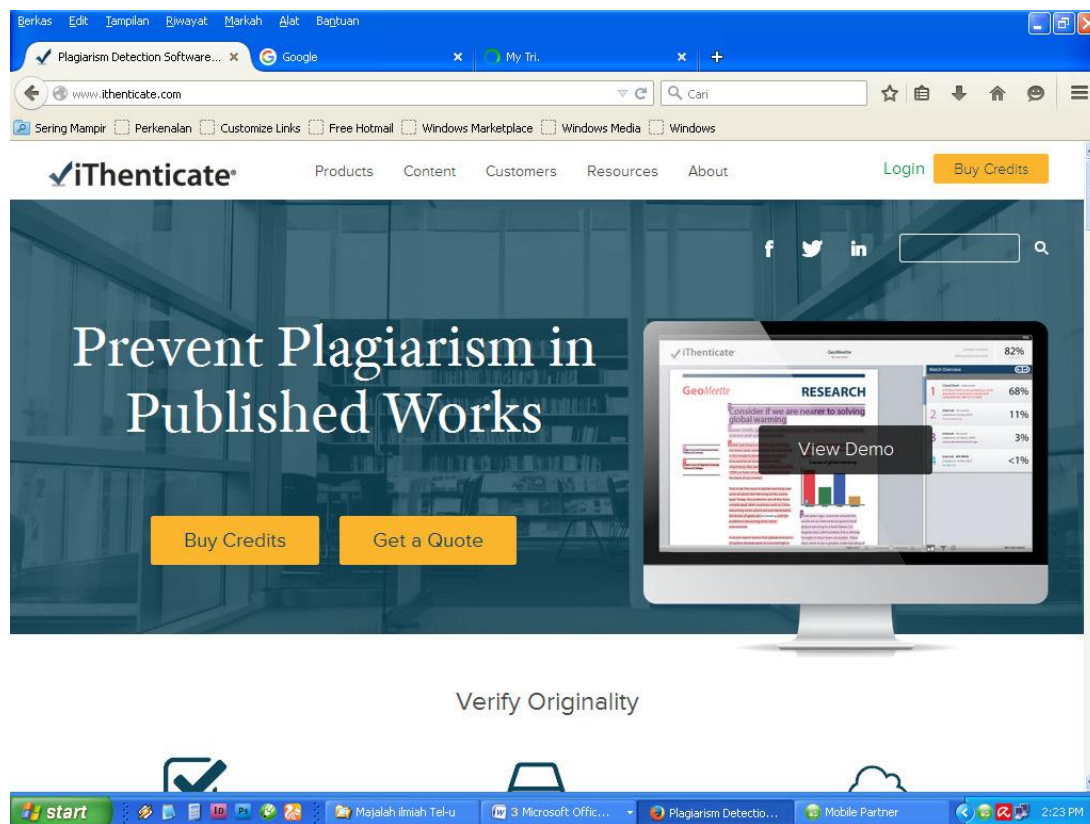
"We started using the application at the end of 2014. For 2015, only around 140-150 documents from 10,000 documents provided were uploaded. From the number of 200 users, we grant access to each unit requiring, among others are to PPM unit as super admins, as related to research. Then, one access to each study program and to each of the total 30 expertise groups, and to the organizers of the journals at Tel-U, and the rest is by request, " Wuwul explained.

Work Content Similarity Detection

Ithenticate actual application can not directly check whether a work belongs to the

category of plagiarism or not. Ithenticate systems work by finding the percentage of similarity of an uploaded document with other existed documents.

Ithenticate is not the kind of application that can be purchased and installed directly by the college. But, when purchasing Ithenticate, Tel-U got a username and password to access this application in www.ithenticate.com.

When accessing Ithenticate, then starting uploading documents, the application will immediately look into its database. One of the privileges is that it is able to penetrate into international journals, both of which have been subscribed by Tel-U or not. The goal is to find the document similarity to works that already existed in the journal.

"When there is content on the uploaded document similar to the existing scientific papers in international journals, Ithenticate will give information if these documents have in common in what percentage. So the part that is similar will be marked in red and be directly linked to an

"

When there is content on the uploaded document similar to the existing scientific papers in international journals, Ithenticate will give information if these documents have in common in what percentage. So the part that is similar will be marked in red and be directly linked to an international journal in question. We can simply click on the journal pages to find out the similarities."

international journal in question. We can simply click on the journal pages to find out the similarities. But, if we do not subscribe to international

journals in question, the pages of the journal can not be clicked or opened. That is the output, "said Wuwul.

According to Wuwul, to decide if a work is considered plagiarism or not may refer to the provisions of the Directorate General of Higher Education (Dirjen Dikti), the percentage of similarity of documents. If the resemblance is still below 30 percent, it is not considered plagiarism. However, if the similarity is over 30 percent, it is considered plagiarism. Or provision of plagiarism can also be determined by each higher education institution.

Wuwul hope, the quota of 200 users will be quickly used up, because it is based on the needs of the institution. "If the quota of 200 is quickly used, we are happy, because this is also the beginning of the requirement. Ten thousand documents could be in the form of paper, proceedings, etc., and even could be in the form of Indonesian documents. We still discuss for the scientific final project (TA) of student, " he said.❖

Manufacturing Process Lab
Learning CNC Optimization to Get Certification

"Practice makes Perfect". This expression is usually intended for anyone who wants to quickly master a skill. The more one practices, the faster he becomes an expert. It is the same as the learning process in college. Students will not be able to adapt in society if they are not equipped with the expertise. One of them is through activities in the laboratory.

Currently, learning in the classroom is not enough. Lecture materials require real practice closer to the reality in the world of work in the future. For that, there are laboratories that can accelerate the ability of students in terms of hard skills. In addition, the laboratory is to help the academic community to do research. So, not only learning in theory, but the practical expertise will also be obtained.

Telkom University (Tel-U) is trying to equip students with the practices to prepare the students to face difficult situations in the world of work; one of them is laboratory facilities. Starting from the engineering to non-engineering fields, procurement of the laboratory is a major concern. The reason is that every year, the number of students continues to increase, so that the occupation and the availability of laboratory need to be taken into account.

One lab which is relatively new is the Manufacturing Process Laboratory which is under the School of Industrial Engineering (FRI). The new three-year stand, but the intensity of its use has been pretty solid. According to the Head of Trustees of Manufacturing Process Lab, Rino Andias Nugraha, ST, MM, in addition to practi-

cum, the lab is also used for research and certification of professions.

"This laboratory is aimed to support the course of the Manufacturing Process. In addition to practicum, TA research, lecturers and industry, it is used also for student certification. Industrial Engineering students are required to have certification. So, they are trained for 3-4 days, then are tested and received certification, " he said.

Certification of profession given by Manufacturing Process Laboratory is Computer Numerical Control (CNC) programming. Actually, the certification of students may be done off campus. Only Tel-U has not yet found a vendor who can issue certification of CNC Programming. Thus, Tel-U provides it by itself. The reason is that this lab is dedicated to the mastery of CNC machines to be used in the production process in the industry.

The CNC machine itself is an automation system that is operated through commands abstractly programmed and stored in the storage media. This machine is an industrial revolution in the design process, thereby saving production time, but the results are still precise and meticulous. With CNC machines, the accuracy of a product can be guaranteed up to 1/100 mm, workmanship mass product with the exact same results, and fast machining time.

CNC machine has several parts, i.e. a program, a control unit / processor, an electric motor to drive the servo control chisel, an electric motor to move / rotate the chisel, a chisel, and a holder. There are two working principles of CNC machine.

First, programmers create a CNC program suitable with products to be made by typing directly on a CNC machine or create on a computer with CNC programming software. Second, CNC programs with (G-Code) are delivered and executed by the processor in the CNC machine, resulting in a servo motor controlling on the machine to move the gear that

moves the process of machining and produce products according to program cuts.

"Two kinds of CNC machines are milling and turning machines (lathe). CNC milling machines are used to produce parts that require a high degree of precision. While turning machine (lathe) is for the cylinder material. A non cilinder uses milling machines. Materials used can be metal or non-metal. For examples, producing parts or automotive

parts (motor), factories and others, " Rino said.

Especially in Manufacturing Process Lab of Tel-U, there are two CNC machines, four groover machines or mini size milling machine, and five CNC simulators. Groover machine is normally used to produce a soft material such as plastics, polymers, and wood. This machine is also more frequently used for practicum students. While the simulator is used for CNC programming training so that

the material does not directly enter the actual CNC machine to avoid risk. CNC machine owned by Tel-U currently has three motion axes (XYZ). While CNC machines in the industry already have more axis movements. The difference lies on chisel eye's ability in shaping the product.

To support the needs of practicum and research, Manufacturing Process Lab specifically employs the services of the retired of PT Dirgantara Indonesia (DI) as the laboran. According to Rino, the laboran already has 25 certifications, so he is quite an expert in his field. It is the laboran who will teach the students to practice and to develop laboratories and equipment in it. Furtheremore, the lab assistants are selected from third-year students who have passed the course of CNC Programming and got an A. In every batch, 15 lab assistants are selected to serve as trainers on the certification of professions for their juniors.

"The difficult thing about CNC Programming lies on how to optimize it. For example, when making / cutting, punching holes and scraping material. The difficult part is determining which steps should be done first. In order to optimize the use of the machine, meaning that we should optimize the program. Why? It is due to the use of large electricity of CNC machining. Moreover, the material is also expensive. If it is not optimal, the chisel can wear faster. It might cause the programming to be inconsequential for the not optimal finished product. For the correct optimization, the manufacturing of finished products can be done in five minutes, but if it is inconsequential, it may be up to two hours. So, the challenge is to make optimal and fastest program without changing the chises and others processes. Everyone can make a program, but not everyone can optimize it. It requires experience, understanding, and skill, " he explained.

Inspite of only three years of existence, Process Manufacturing Lab has established a wide range of cooperation with the industry to conduct research and product manufacture. Among other things, the cooperation with the processing plant of Batik Komar, motor spare parts from Cikarang factory and textile factory in Banjaran related to molding machine of weaving patterns that are still running. In fact, according to Rino, because of the success of Manufacturing Process Lab when working with the mill motor spare parts in making the motor spare parts, new tools were provided for this lab by the factory.

Rino hopes that Manufacturing Process Lab can improve the completeness of its equipment and expand research activities that involve the lecturesr. Moreover, this lab is attempting to initiate research collaboration with the University Tun Hussein Onn Malaysia (UTHM). "One of the requirements of this cooperation is having the tools that we haven't had yet, to share the same contribution. Moreover, only a few of lecturers get involved in the researches in this lab, because the field is rather hard, " he concluded.❖

EXTERNAL FUND
RESEARCH 2015

SCHOOL OF APPLIED SCIENCE

- Major
  Diploma of Computer Engineer
- Title
  Markers parking with Ultrasonic Sensor Utilizing Alternative Energy Solar Panels
- Researcher Team
  Giva Andriana Mutiara, S.T., M.T.
  Anak Agung Gde Agung, S.T., M.M.
  Rini Handayani, S.T., M.T.
- Fund
  IDR 55,000,000
- Scheme
  Competitive Grant Research

Increasing Contribution towards the
Research
for Commercialization

The achievement of Telkom University (Tel-U) to become a world-class university which is brilliant in the field of research has brought changes to the research result targets. Previously, lecturers must publish their research results in international journals, but now, they are directed to the commercialization of the research results.

Until now, Tel-U researchers are still pursuing various international publications to disseminate research results to the outside world. However, product-oriented research has already been started in earnest on this campus as Tel-U wants greater contributions to the nation.

To that end, Tel-U has cooperated with Bandung Techno Park (BTP) to realize the results of their research work to be followed up in the form of ready-made product, ready for production until ready to enjoy by the wider community. This cooperation started in 2015 by initiating a number of research results of Tel-U lecturers by BTP. The goal was to find out the feasibility of Tel-U during Research Downstream Program which began in 2016.

In 2015, Tel-U has 19 research results presented to the BTP to be selected towards the commercialization of research results. However, the success of this research downstream is largely determined by the willingness and openness of the industry and the Tel-U itself to commercialize its products.

It is not easy, given that most Tel-U researches are oriented to journals or scientific publications. However, the desire to contribute more to the community creates a shifting of a mindset on campus researchers.

Research certainly cannot be separated

from its utilization in real-world applications. If during these days, Tel-U lecturer researches are more oriented on publications, there is no harm because it can enrich the scientific fields studied. However, if the research can produce real products that can be exploited by people, it will pronounce more effect on the researchers and institutions.

Research and Community Service (Penelitian dan Pengabdian Masyarakat - PPM) Unit, which manages the results of Tel-U researches, began to orient the researches not only towards the journals, but also towards commercial purposes. With the downstream study, campus gives significant contribution to the nation.

Tit for tat, as it turns BTP is highly concerned about the development of the research effort into something that can be sold to the public. BTP is a unit under Telkom Foundation (YPT) that is in charge of helping to sell the results of research into the industry with synergy of education (academic), industrial (business), and the government.

According to the representatives of BTP, Iwan Iwut Tritoasmoro, ST, MT, there are three fundamental things as assessment factors. "There are three criteria for a study to enter the market, namely technology readiness, readiness of business models, as well as a solid team," he said.

Iwan explained the requirements of these three criteria. First, the readiness of technology where research must have really been completed up to 5 Technology Readiness Level (TRL 5). It means that the research prototype has already been tested in an appropriate environment. In terms of its components, they have been adjusted. As for products that are ready to be mass produced, normally readiness of the technology is in TRL 8 or 9.

Secondly, the readiness

> When the product is offered to the market, there would be a validation process, for example, any shortcomings or anything that needs fixing as a kind of feedback from the industry to the researchers."

of the business model which should be superior and unique to be the productmarketability. For example, the product is not only good in concept, but also has the advantage to be sold to the public. If the product is good, but there is no business model, it will not be sold.

Finally, a solid team which should be able to accompany the product until it is ready for sale to the industrial market.

"When the product is offered to the market, there would be a validation process, for example, any shortcomings or anything that needs fixing as a kind of feedback from the industry to the researchers. Well, this is where the function of the team is solid and complete to be able to adjust to the possibilities of the failure (jail development). A solid team should be able to accept inputs to improve more products, " Iwan said.❖

YPT.OR.ID

Research Incubation with BTP 2015

School of Electrical Engineerinf

- Major
  Telecomunication Engineering
- Title
  Position Information System for Fishermen
- Researcher
  Angga Rusdinar, S.T., M.T., Ph.D.

- Major
  Electrical Engineering
- Title
  Weather Forecasting Information for Boat Prot
- Researcher
  Ramdhan Nugraha, S.Pd., M.T.

- Major
  Electrical Engineering
- Title
  Portable Turbine Generator Using Bulp
- Researcher
  Reza Fauzi Iskandar, S.Pd., M.T.

- Major
  Physics Engineering
- Title
  Portable Refrigerator
- Researcher
  Tri Ayodha, S.T., M.Eng.

- Major
  Physics Engineering
- Title
  Anaerobic Reactor CSTR type laboratory scale
- Researcher
  M. Ramdlan Kirom, S.Si., M.Si.

- Major
  Telecomunication Engineering

- Title
  Antenna Design Frequency Reconfiguration with Transmission Line Modeling Loss
- Researcher
  Dr. Bambang Setia Nugraha, S.T., M.T.

School of Industrial Engineering

- Major
  Industrial Engineering Information System
- Title
  Advance Database with My SQL and Oracle
- Researcher Team
  **R. Wahyoe Witjaksono
  Muhammad Azani Hasibuan
  Riza Agustiansyah
  Nur Ichsan Utama**

- Major
  Information System
- Title
  Mini Green Power Plant
- Researcher Team
  **Rd. Rohmat Saedudin
  Andri Gautama**

- Major
  Information System Industrial Engineering
- Title
  Mini Green Train
- Researcher Team
  **RD. Rohmat Saedudin
  Haris Rachmat**

School of Computing

- Major
  Informatics Engineering
- Title
  Development of Islamic learning application for Kids
- Researcher
  Mira Kania Sabariah

- Major
  Informatics Engineering
- Title
  exploiting IT Growing Taste for Love Motherland in Children
- Researcher
  Dody Qori Utama

- Major
  Informatics Engineering
- Title
  Awareness Raising Case Against Hiring Minors Through Game
- Researcher
  Dody Qori Utama

- Major
  Informatics Engineering
- Title
  Web Application Development for Developing Delivery Business
- Researcher
  Mira Kania Sabariah

School of Applied Science

- Major
  Diploma of Infomatics Management
- Title
  Application monitoring Thesis / Final Project
- Researcher Team
  Wardhani Muhammad
  Dahliar Ananda
  Aas Suhendar
  Muhammad Khusnan

- Major
  Diploma of Informatics Engineering
- Title
  Andi adventure
- Researcher Team
  Muhammad Fauzan
  Mutia Noor Hafid
  Herlangga Wicaksono

- Major
  D3 Teknik Telekomunikasi
- Title
  SQUARELOCK
- Researcher Team
  Denny Darlis
  M Salman Abdul Qohar
  Yuda Oktavian
  Laode M Rayhan

- Major
  Diploma of Telecomunication Engineering
- Title
  Light Phone
- Researcher Team
  Denny Darlis
  Hasanah Putri
  Gusti Iqbal Rinaldi

- Major
  Diploma of Computerization Accounting
- Title
  Application Control Installment Credit Sales To Determine Per Period Method Annuity Due Compound Interest
- Researcher Team
  Risma Siti Maryam
  Asti Widayanti
  Irna Yuniar

- Major
  Diploma of Computer Engineer
- Title
  Practice Kit Microcontroller, and Peripheral Interface
- Researcher Team
  Simon Siregar
  Cyntia
  Aris Pujud

Expertise Group of Accounting Information Systems

Creating an Aplication towards *Cashless Society*

Speaking of money, it has to be detailed in the reporting. It has to be applied not only in large companies, small and medium enterprises, but also in the domestic sphere. To that end, the accounting is presented as a solution to modern financial records. But in the current era of modern technology, the issue of financial reporting, taxation, and other accounting fields issues no longer need to be done manually. Hence, Telkom University (Tel-U) has a course of Computerized Accounting.

Studies in Accounting collaborated with technology at Tel-U, among others, are performed in the Expertise Group (Kelompok Keahlian - KK) of Accounting Information System (Sistem Informasi Akuntansi - SIA) in the School of Applied Sciences (Fakultas Ilmu Terapan - FIT). KK focuses on the field of information technology (IT) –Accounting based, including information about the system of taxation, finance, and others.

According to the Chairman of KK SIA, Anak Agung Gde Agung, ST, MM, KK SIA was established along with the merger of Tel-U in 2013. Earlier, KK of Accounting stood apart from KK of Information System. In addition to monitoring the research activities of lecturers and formulating the teaching materials for the field of Computerized Accounting, KK is currently developing a business incubator and research. "We are developing a business incubator and research. Currently, the lab is being prepared at FIT, " he said.

To support research and learning activities, KK SIA already has two laboratories, the Laboratory of Enterprise Resources Planning (ERP) and the laboratory of Accounting. ERP laboratory focuses on the study of technology, such as the use of SAP applications and modifications to the application, while the Accounting Laboratory examines the problems in accounting, taxation and finance.

"We intended to underway business incubators and research laboratories for the next semester, according to the new curriculum. Currently, we prioritize the students who are doing final projects, " Agung added.

KK SIA has 16 members and all are FIT lecturers. For the direction of the research, this KK has created a number of applications that can support the activities in the field of accounting, tax, finance, production, and so on. In addition, SIA KK directs research on financial records. "So, when the studnts do a Final Project (Proyek Akhir - PA), they also write a journal. There may be more adjusment in the new curriculum, " explained this lecturer of Information System.

Agung admitted that the understanding of the study program of Computerized Accounting which oversees KK SIA is still under debate. Although part of this study program is related to accounting, this study program falls under the Information Systems considering several similar studies abroad are under the specialization of Information Systems, because the portion of the IT is larger. However, according to Agung, for Computerized Accounting study program at Tel-U, the portion of the learning tends to be balanced and will be adjusted in the new curriculum in the upcoming odd semester of 2016.

Accounting Information Systems itself has three important functions in an organization. First, collecting and storing data about the activities and transactions. Second, processing the data into information that can be used in the decision making process. Lastly, precise controlling of the assets of the organization. Accounting Information

Systems has subsystems dedicated to processing a variety of financial and non financial transactions that directly affect the financial transaction processing.

There are three subsystems in Accounting Information Systems. Those are transaction processing systems that support the daily business operations, general ledger system / financial reporting, as well as the closure system and reversal. Last subsystem is a reversal and closure of reports created with reversing entries and journal covers producing financial statements, such as profit / loss, balance sheet, cash flow, tax returns, and so forth.

For its implementation, in addition to conducting the research in this field, KK SIA has also collaborated with industry, usually small and medium enterprises (SMEs) that were targeted as KK SIA research. The reason is because there are

many SMEs having problems since they have no Accounting Information Systems or irregular financial recording process. As for cooperation with banks, according to the Court, it remains a challenge.

"The cooperation with related SIA banking is still difficult, because of issues of confidentiality and sensitivity of the data. As for SMEs, we have often helped many SMEs in the socialization and tax reporting. These activities were conducted at the community service. For the field of taxation, we usually help or do the PA in the form of a simulation calculation. Although only a simulation, students can understand the real world implementations and helps users of the application in the calculation of the tax, " Agung said.

Cashless Society Research

Although the KK SIA is new, it has already directed its

research to the development of business incubators and research. Moreover, in line with the wishes of Tel-U which leads to the concept of digital-based smart living, KK also assisted in planning the concept of Accounting Information Systems-based smart living. It is because the concept of digital-based smart living at Tel-U has been gradually implemented; one of them is with the use of T-Cash

for lunch payment tool for lecturers and students.

T-Cash is a product of PT Telkomsel which can be used as means of payment in some places. According to Agung, this concept can be expanded with the implementation of the cashless society for the academic community of Tel-U. For example, T-Cash system is integrated in the Student Identity Card (KTM).

"To go towards a cashless society, reforming must be done first, starting from reinforcing the infrastructure and creating strong regulations. The most important thing is to change the culture of the community towards the digital direction. Those are our targets, " he continued.

It may not be easy to realize the plans of each KK that has different research roadmaps. This also applies at Tel-U which has 32 KKs. However, there is no harm in utilizing the facilities already provided by the university, as done by KK SIA.

To realize the concept of a cashless society, it starts from research laboratories and a clear roadmap. Thus, research funding and assistance for publications provided by the university should be best utilized. According to Agung, it is better to accelerate and motivate researchers, particularly the ones in KK SIA.

"In fact, now there are also grants from Alumni Forum (FAST) that are followed up in addition to several research schemes of Tel-U. Indeed, one of the challenges today is the bustle of lecturers in structural position. To coordinate, in addition to holding meetings, we also make use of email and social media. For example, just like this moment, discussing the title of PA is more effectively done through social media rather than meeting in person, " he said.

Agung hopes that there will be an increase in facilities and infrastructure of the university, especially the addition of the laboratory, because the vocational students need a lot more practice than theoretical understanding. Research carried out will be more on implementations of a product or application to solve a problem (case study). Ideally, students get a portion of the practice of vocational and practical learning as much as 70% rather than the theoretical one.

"The increase in the number of students of Applied Science still has not been accompanied by the improvement in the facilities and infrastructure, especially the laboratories for practical work. As for teaching and learning activities, they have been helped by a general lecture hall. Laboratories should also be added. We hope, KK is contributing to the real world, no matter how much, for example, our students assist SMEs which often suffer losses. Besides that, our students can assist to improve financial records, and to create supportive applications. Although it may be seen as a small impact, but it provides benefits to the real world, " he said.❖

ICoICT 2015

Conference
Must Make a Contribution

"No matter how good one's ideas or research results, they will not be recognized by others if they are not conveyed in a peer reviewed paper." This phrase often serves as a motivation for researchers to be able to publish his/her work to the community. The reason is that a work would be considered good if it is already recognized by others, given the assessment, and may be used as a reference for future research.

This also applies to Telkom University (Tel-U) which always encourages lecturers to publish their research results. Nonetheless, the number of researches published at international level still needs to be improved. Therefore, in addition to encouraging researchers to publish the research results to the community, Tel-U also provides a means of publicizing held by internal parties.

Thus, every school at Tel-U is required to host international conferences. The goal is, in addition to serving as a publication media for internal researchers, to invite external parties to participate.

One of the conferences that have been regularly held at Tel-U every year is the International Conference on Information and Communication Technology (ICoICT). It was initially organized by Telkom Institute of Technology since 2013, but since 2015, organized by the School of Computing of Tel-U. Although considered new, the interest of the participants in this conference is relatively high. In 2015, ICoICT was held again in Kuta, Bali, on Wednesday - Friday (27 - 29/5).

According to the Committee Chairman of ICoICT 2015, Dana SulistiyoKusumo, Ph.D., the purpose of conducting ICoICT in Bali was to attract many participants from other countries. "Bali is well known abroad, so it was held in Bali to draw more participants from abroad," he said.

Dana added that Tel-U collaborated with the Information Technology department ofUdayana University, the oldest state university in Bali. Not only that, ICoICT 2015 employed collegial systems of Tel-U lecturers with a number of potential speakers from abroad. It was easier for Tel-U in carrying out international conferences because the speakers were well known.

One of the keynote speakers invited to the ICoICT 2015 was Prof.Kouichi Sakurai coming from Kyushu University, Japan. He was previously the PhD thesis supervisor of Tel-U's Vice Dean II of School of Computing during her doctoral program. Another keynote speaker was Prof. Mike Wald of the Universityof Southampton, UK. Prof. Wald was a colleague of Dade Nurjanah, PhD, the Director of

Tel-U Graduate School and Advanced Learning, when she was completing her doctoral program at the University of Southampton, England.

The theme for the 2015 ICoICT was "Smart ICT for Daily Life". With this theme, 114 papers were submitted and screened for display. A total of 68 papers came from Tel-U. The conference itself wasfocused on the field of Informatics and covered the fields of Computer Science, ICT, and others. The confere was technically sponsored by IEEE's Indonesia section.

According to Dana, compared to similar conferences abroad, ICoICT is still somewhat more general in nature because the Informatics can be broken down into several sub-disciplines. Even so, the participants' interest was moderately high in this conference. In fact, the conference has already been indexed in Scopus and IEEE.

"Usually, a conference is said to be bona fide or prestigious if the field of study is highly specific. It is because in the future, the generated contribution to knowledge is already deep. But, although the coverage of ICoICT is still considered general, it

does not simply mean that this conference is less prestigious than other similar conferences, because the submitted papers are fairly prominent, " said Dana.

The management system of a conference greatly affects the quality of the conference. To that end, ICoICT is strived to be organized with strong international environment annually. Although the organizer isTelkom University, ICoICT is planned to be held not only in Indonesia or in Bandung. The result can be seen from the incoming papers.

In 2015, there were 15 countries participating in this conference, among others, Saudi Arabia, Japan, the United Kingdom, the People's Republic of China, Malaysia, Indonesia, Switzerland, Germany, Italy, Australia, New Zealand, Czech Republic, Taiwan, India, Sri Lanka, and Thailand. In fact, Malaysia has always been the second country with the largest number of papers submitted to this conference.

"This conference has been pretty consistent, and began to receive attention and a place in the wider academic environment, not only in Indonesia," Dana said.

According to Dana, holding a conference, especially the international one, can be fairly tricky. It could be easy, if you have obtained good recognation. However, it could also be difficult when reviewing the submitted papers. When the quality of the submitted papers areeither bad or problematic, it will impact on the conference itself and its indexing.

"The cross-reviewing system is applied during the paper review process. For example, if the incoming papers are from Tel-U, the reviewer should not come from Tel-U as well to avoid the conflicts of interest, " Dana said. The review process was also double-blind review.

ICoICT 2015 already has a good track record because it has been indexed in IEEE and Scopus. Moreover, in terms of the materials presented, ICoICT 2015 has contributed to the use of technology in everyday life. It was disclosed by one of ICoICT 2015 keynote speakers, Prof. Mike Wald, entitled "Digital Ac-

cessibility". In his presentation, Prof Wald mentioned that technology can assist people with special needs in living their lives. For example, the conversion of text-to-speech which can be used by the visually impaired people.

Hence, Dana hopes that the next ICoICT activities can involve more participants, especially from abroad because it will increase the recognition and the level of the conference. "So, later on, an international conference will be perceived as something that is needed and makes a contribution," he affirmed. ❖

LIST OF PAPER
ON JOURNAL

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- Publisher
  Icic Express Letters

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- Author
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- Publisher
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- Author
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  Aa Nugroho
  S. Riyadi
  GR. Blake
  N. Mufti
  TTM Palstra
  PHM Van Loosdrecht
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  Asep Suhendi

- Publisher
  Langmuir, Washington, DC 20036

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  Journal Of Advanced Material Research, Advanced Material Research And Production, Switzerland

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  IEEE Asia Pacific on Wireless And Mobile Conference 2015 (Apwimob2015), Bandung, Indonesia

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  International Journal of Imaging and Robotics, India

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  2015 International Conference on Industrial Internet of Things, Samosir Sumatera Utara

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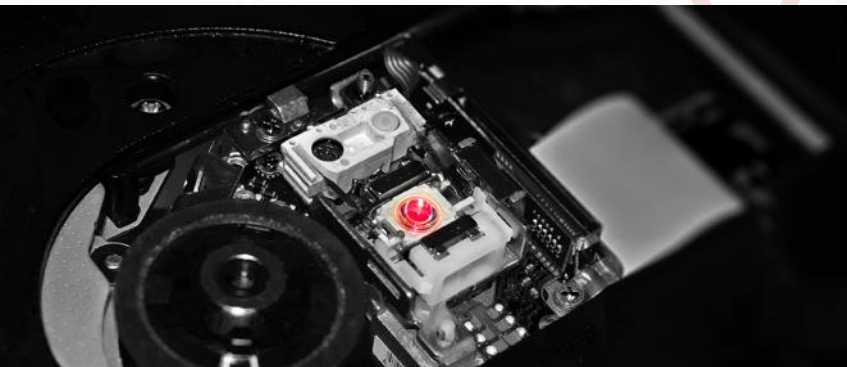
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KNOWING PATENTS

by : Geraldi Gunawan S.E*)

You often hear the term "patent"? Typically, this term is used to indicate that the authenticity of a product or goods is guaranteed. The term patent is also used for an item recently discovered and can not be imitated. In legal terms, the patent is now an important aspect of a technological invention. Thus, the patent regulation, the procedure to be patented, and others are already regulated in the state legislation.

Referring to Law No. 14 of 2001, it becomes the basis of patent law. It is mentioned that, any activity of solving a specific problem in the field of technology, either in the form of a product of process, is referred to invention and may be registered under the patent protection as long as it meets the basic principles of protection registration of Intellectual Property (Kekayaan Intelektual - KI), i.e. considered novel, involving inventive steps, and considered industrial applicable. Some examples of patents that can be registered among other are machine technology, machine production process, drug manufacturing process, chemicals, and others.

Basically, protection towards Intellectual Property is divided into two kinds, namely Copyright and Industrial Property Right.

Copyright is defined as the exclusive right which arises automatically under the declarative principle after a work is manifested in a tangible form without prejudice to the provisions of prevailing laws and regulations. Copyright covers a work in the form of arts (including fine arts, sculpture), science (computer applications, papers, books), and literary works (poetry, adapted work, anthology).

Industrial Property Rights consists of several types of KI; one of them is patent. In addition to patent, there are several other types of Industrial Property Rights, i.e. brands (such as logos, symbols), industrial designs (such as designs of simple tools, machine design, packaging), layout design of integrated circuits (such as integrated electronics on semi-conductor equipment). Then, there is the geographical indications (typically related to an object associated with a characteristic of a region), the protection of plant varieties (such as new crop varieties, tissue culture, cell culture), as well as trade secrets (such as business methods, know-how business developed by the School of Economics, food recipes).

Longer Patent Process

The process of obtaining a patent tends to take longer time compared to other types of KI. The reason is that there are several processes that must be passed by the applicant, until the patent is issued by the government. Generally, the registration process of patents reaches 72 months (6 years) consisting of the application, announcement, substantive examination, and issuance of patent certificate.

The first stage, the application takes about 18 months up to the announcement process (related to the fulfillment of administrative requirements of the registered patents). The second stage, namely the announcement, it takes around 6 months for the announcement of the invention and then waiting period if there are any objections from other parties towards the patent has been registered. If no objections, the

next request is for substantive examination from the inventor. So, in total, it will take approximately 18 additional months to enter into substantive examination process.

The next stage is the substantive examination carried out within a period of 36 months. At this stage, the directorate of KI will ascertain whether the registered invention has met the requirements to be granted a patent or not. If considered to meet the requirements, it will be included in the process of granting a patent certificate. But if not (denied), it takes about nine months to get into the Patent Appeal Commission for further proceedings.

The last stage is a patent certificate granting for inventions that have served their substantive examination. Although the process is long, the invention that is still under the registration process is allowed to be published if the applica-

tion of the registered invention has a registration number and date of receipt.

Another reason that makes the patent process longer is because the elements of a patent involve technology in which the components are only known by the inventor. Thus, Directorate General of KI needs to get very detailed information on the components contained in an invention which will be registered, by involving a comparison. Patent registration could not be proceeded if there is an objection or appeal in the registration process, and if there is also a similar technology that has been registered previously.

The process is time-consuming and has various levels of difficulty. Therefore, an inventor should do a search first before registering a patent, whether the technology has already been registered or not. Patent searches can be done through several pages.

Especially at Telkom University (Tel-U), eight patents have already been registered in which two of them fall into the category of the Grant of Directorate General of National Higher Education. The obstacles of patent registration process at Tel-U still faced by IPR Clinic are associated with the patent drafting processing.

In addition to registration forms and other administrative documents (ID cards, personal statements, letters of transfer of rights, etc.), registration of a patent application requires the Patent Drafting. It includes abstract, description, and claim of the invention which will be registered, in which only the inventor who knows what kind of invention that will be registered.

Furthermore, during the Patent Drafting, there are certain criteria used as reference. One of them is that the used language phrase should not be promotional (advertising).

Currently, there are several KIs at Tel-U in which the application process is still suspended because the patent drafting has not been attached or the use of the language does not meet the criteria. In the future, it is expected that Tel-U IPR Clinic can assist to create the Patent Drafting to facilitate the potential inventors at Tel-U to protect the invention that has been generated.

The easier and the more understandable, the faster the patent of IPR Clinic process can be filed, so as to motivate potential inventors to continue working. ❖

Author: Tel-U IPR Clinic Staff.

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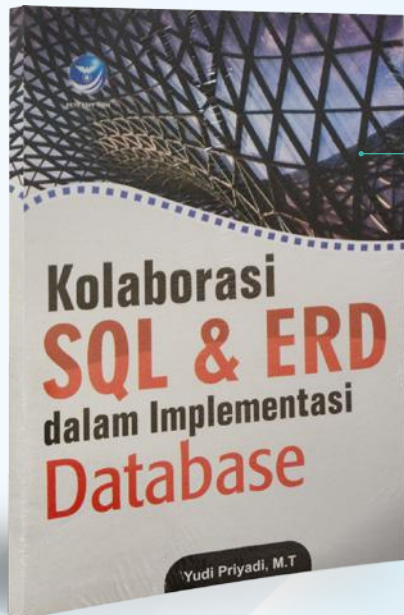
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- Author
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- Author
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- Jurnal
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  Didit Aditya Permadi
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  Bambang Pudjoatmodjo
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  Achmad Ali Muayyadi
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  Niken Dwi Wahyu Cahyani
 **Ritchie Fergindo Andreta**

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- Author
  Faidhon Nur
  Agung Nugroho Jati
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- Conference
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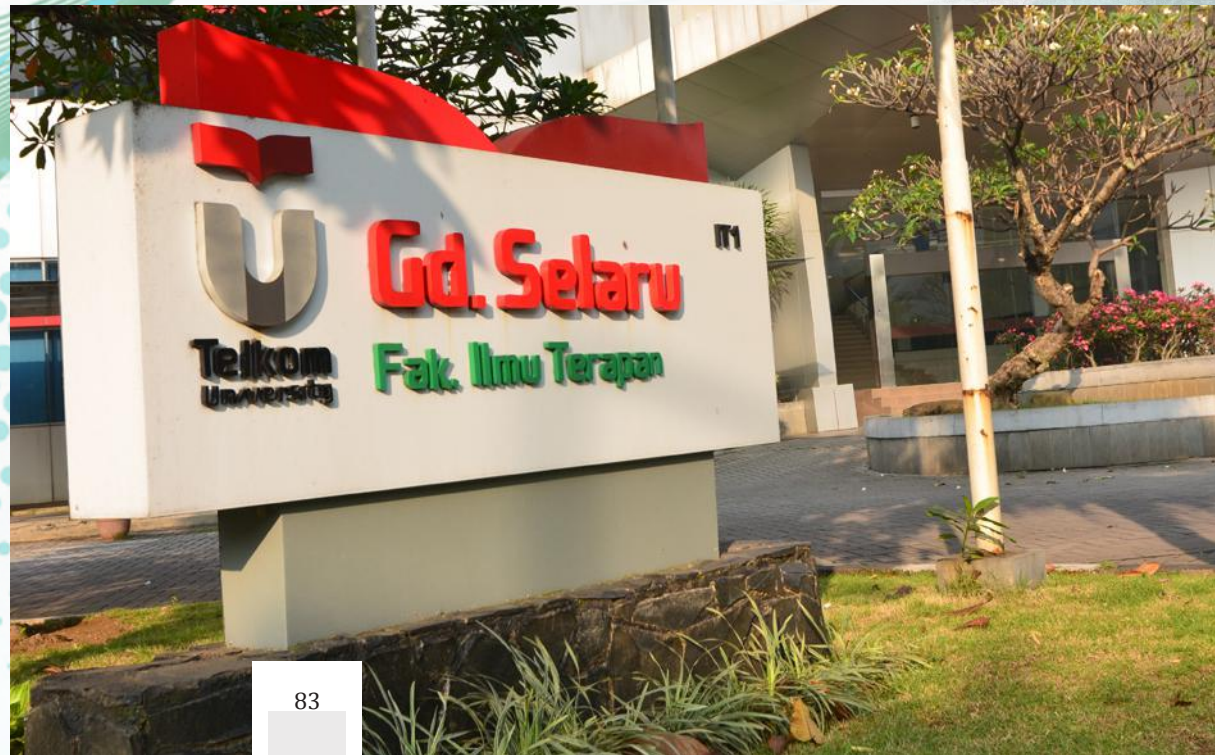
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