Redirecting Academe-Industry Partnership for Countryside Development

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Abstract

Universities in the Philippines have been considered as one of the main agents in reducing poverty. Universities can achieve this social development through the utilization or commercialization of its knowledge-based resources through industry aside from providing skills to its students. The vision to be an agent for social transformation can only be realized if its personnel can perform high-quality research. With Samar as the study site, the study was conducted. Assessment of institution's human resources in the year 2000 revealed that it was not yet ready for such vision, thus aggressive policy towards research productivity was implemented. Because the fourfold functions of the University must be in harmony with each other, the industry-academe partnership aimed at helping the University in generating income and improving the school's operations and graduates quality needs to be redirected. Gradually, the University is positioning itself to become a known research university in the future with research outputs utilized by the community or the industry. This vision, if fully realized, is expected to provide the University the much-needed resources for its operation.

Keywords: Industry, Samar, Human Resources, poverty reduction, university

I. INTRODUCTION

The development of society requires the involvement of several players from grassroots organizations, government and non-governmental agencies, research institutions (universities, etc.), and funding institutions to achieve the goal of societal growth. In most cases, these players work together and at times even compete to achieve the goal of community growth (Hwang, 2006). Furthermore, all human actions should eventually lead to human development and human happiness (Hegde, 2007). It is in human nature to look for a community where there is less stress where the basic needs are available and accessible.

Education produces literate people, and literacy will lead to social development. Literacy will lead to societal development. It is an empowering skill which reduces many fears. It also increases access to many types of information to achieve a more satisfying life, carry out one's responsibilities more efficiently and effectively, even to challenge and reject if necessary what has been learnt through one's socialization in an unequal society. It provides the potential (but not a guarantee) for a better life politically,

culturally, socially, and economically (Department of Education, India, 1997). The traditional definition of literacy is simply the ability to read and write. However, the United Nations Educational, Scientific and Cultural Organization (UNESCO) defines literacy as the "ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts". Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society."

Many policy analysts consider literacy rates as a crucial measure to enhance human capital. This claim is made on the ground that literate people can be trained less expensively than illiterate people and belongs to higher socio-economic status (The Phonics Page, 2007). The study entitled Manpower and Education published in 1965 found out that there is a positive relationship between the levels of human resource development of the nation to its economic development except for the Philippines. In the report, the Philippines has high literacy rate but it did show an increase in per capita Gross National Product (GNP). The culprit of the non-concurrence (human resource and economic development relationship) is because many of the literate members of the society have limited opportunity to apply what they have learned from the school especially in Samar. The National Statistical Coordinating Board (NSCB) reported that the employment rate in the country for 2011 (partial data) is about 92.6%, about 2.9 points higher than the 2009 data. For every 10 employed individual in the Philippines, about two are underemployed. On the other hand, the employment rate in Eastern Visayas is 94.6%. For every 10 employed individuals in the region, eight are underemployed. This can be attributed by an increase in the number of available labor force but job creation in the region is very slow.

Samar State University has continuously supplied the Philippine labor force in the province, region, country and abroad for almost 100 years now. In the late 1970s and early 1980s, Samar School of Arts and Trades started producing graduates with baccalaureate degrees in industrial technology and industrial education. During this period many institutions of learning started to produce more college graduates which eventually entered into the workforce. This rapid increase caused a tougher competition to find a job opportunity. The large-scale production of college graduates resulted in unemployment and underemployment.

Despite the thousands of professionals produced by the institutions of higher learning in the region, Eastern Visayas is still considered poor. Samar Island Provinces considered as the poorest. Based on 2010 National Statistical Coordinating Board (NSCB) report, the three provinces of Samar Island namely; Samar (Western Samar), Northern Samar and Eastern Samar belonged to the poorest provinces in the country with poverty incidence ranging from 40.2 to 52.2% in 2003.

The paper aims to present how universities in the countryside can redirect its focus by addressing key issues such as the university's ability to train people considering the strengths and weaknesses of the service area it operates in.

II. METHODOLOGY

The paper is based on secondary information available from local government institutions, the local government units and the example university, the Samar State University. It uses data mining strategies in generating

relevant information needed in the presentation of concepts.

III. RESULTS AND DISCUSSION

A. Status of Industry, human resource and employment in Region 8 and Samar Philippines

The employment rate in Eastern Visayas is relatively high at 94.6%. However, this rate does not depict the appropriate placement and employment of graduates. Of these employed, many belonged to the informal sectors. In 2009, around 43% of these employees were wage salary workers, 38% are categorized as owned-account workers, and the rest are unpaid family workers (NEDA, 2009).

Underemployment may have been aggravated more by the decline of industries as shown in figure 2. In the 2008 data of National Economic Development Authority (NEDA) sourced from the Department of Trade and Industry (DTI), a decline of about 15.4% number of establishments was recorded in the region. In Samar, about 17.7% decline of the number of establishments was observed. In 2009 alone, about 25 establishments in the region resorted to permanent closure/retrenchment due to economic reasons and a total of about 395 workers were displaced.

The highest number of available establishments in Samar is in the wholesale and retail trade (56%). This was followed far by quarrying, mining and manufacturing sector (17%) and hotel and restaurants (8%). Except for store managers and those involved in managing of these wholesale and retail trade companies, the said establishments did not require specialty skills on its labor force requirement. Since there are college degree holders without jobs in the region, most of them are left without a choice but to grab any available job opportunities thereby increasing the underemployment rate in the locality. For example, education degree holders working as sales agent in a department store, or computer science or computer engineering graduates working as data encoders and other positions that can be handled even by a highschool graduate.

Aside from the fact that there is a limited availability of industries where the professionals or skilled workers can work, there is also a problem of mismatch on the available workforce and needed workforce. Looking closely into the number of graduates in various discipline and available jobs clearly shows the problem.

Eastern Visayas is primarily an agricultural region with palay, coconut, sugarcane, banana and abaca as major crops. It is the country's top producer of abaca and the third largest coconut-producing region. Its sea and inland waters are rich in salt and freshwater fish and other marine products (NEDA 8; 2010). Despite this fact, very few students are attracted to enter the agriculture and fishery related courses. Only about 3.7% of about 96,397 students in Eastern Visayas have taken up fishery, agriculture, forestry and related courses during school year 2007-08. On the other hand, about 4.2% of the 15,952 graduates acquired diploma in the same courses. This means that if agriculture, fishing and forestry related industries are established, the bountiful resources in Eastern Visayas are utilized, and then economic condition will generally improve. These industries will create more job opportunities which will encourage students to take-up courses in these fields.

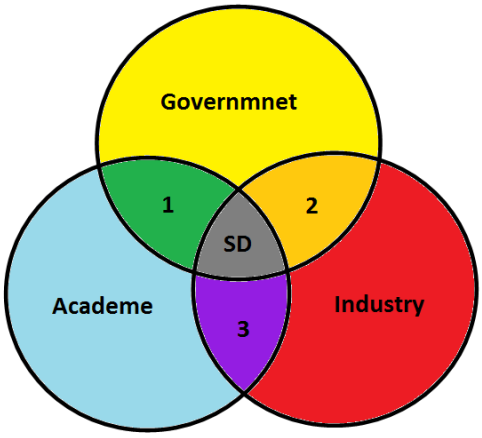
The enrollment trend in SY 2007-2008 in Eastern Visayas dominated by business administration and related courses (20.2 %) followed by education and teacher training (19.6%), and third by engineering and technology (14.6%). The flock

of students into the business related courses did not result into creation of new business industries. Instead, it has reduced. In the same case, the engineering and technology related professionals were not also able to enhance the number of industries where their work is very much needed. This is probably because, good engineering graduates and those in the technology related courses preferred to work in big cities like Manila and Cebu and even abroad. The SSU tracer study revealed that a lot of engineers after graduating and after passing the board exams left Samar and worked somewhere else. This deprives the province from the human resources needed for development and enhancement of industrial performance in the province.

Technical-vocational related training programs are regularly conducted by the Technical Education and Skills Development Authority (TESDA) and its accredited schools. Figure 5 revealed that there are about 75,629 human resources that have been certified by TESDA to have acquired the technical skills in various fields. Skilled workers in the tourism (18.2%), agriculture and fishery (16.7%) and Maritime (15.4%) etc., acquired TESDA certification of their skills. These workers will fill-in the requirement of skilled workers needed by local industries.

As HEIs in the country, the region or specifically in Samar continuously produce new graduates, the unemployment and underemployment will continue to increase. If the new graduates in the formal or informal education will not match the needed labor requirement, the problem will remain, and the envisioned social development will be unattainable. Social development requires support from vital stakeholders especially the government, industry and HEIs.

Figure 6 is a simplified relationship between the sectors that will influence social development. The government includes the Local Government Unit (LGU), regulatory agencies such as Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE), National Economic and Development Authority (NEDA), Technical Education and Skills Development (TESDA), Department of Health (DOH), Department of Science and Technology (DOST). The Commission on Higher Education (CHED) will provide a conducive investment climate through provision of support to the academe in terms of capability building programs



(1)– University provide/assist LGU in policy inclined research; evaluate/assess programs impact, etc. It can also provide capability training programs.
(2)-Government provides support services and enacts or implements laws to support local industry and investors to thrive. Thriving industry will give the government the needed revenue to finance its operation, projects and programs
(3)-University provides capable and competent human resources to the industry. The University can provide continuous capability training programs to its workers and technologies for utilization or commercialization.
(SD)-Improved socio-economic condition will be attained if the three work harmoniously

The industry and government both can help improve the resources of the university through financial support and as the site for exposure trainings, etc.

Figure 1: The tripartite relationship between the three top players for social development

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as well as funding to conduct relevant research and development projects needed by the industry or by the local government units. Since the policies and programs of LGUs are founded on the real and existing problems, the efficiency and effectiveness of implemented policies is expected to increase (shown in Figure 1, No. 1). The government sector can also provide the industry support services and enact or implement laws to support local industry and investors to thrive (Figure 1, No. 2). In this model, the university will play a vital role in providing direction to all sectors based on facts gathered scientifically. It will continue to provide capable and competent human resources, continuous capability training programs and conduct policy related researches to aid local government. The university also should be able to supply the industry with a competent workforce, equipped with the necessary skills. It also provides the local industry technology research outputs for them to commercialize (Figure 6, No. 3). If the three major players work together, a much-needed social development (Figure 1, SD) will be realized.

The role of the academe to the industry and to the government, specifically the local government unit is clear. It is to provide the industry with a competent workforce, knowledge based resources such as technical inventions or innovation, better procedures/processes, and skills development. On the other hand, the role of the academe to the government is to provide them technical experts, social and policy-related researches where the LGU can use for productivity enhancement. To implement this, the University must possess the required skills in research and development/extension services.

B. The Historical Profile of the Industry-Academe partnership of Samar State University

CY 1980-1993. In 1980, when SSAT offered the Bachelor of Science in Industrial Technology that the concept of industry immersion. The On-the-job training (OJT) was integrated in the curriculum in compliance to the prescription cited in the Philippine Educational Act (PEDA) of 1973 which showed a mismatch between the available workforce and the needed workforce. The PEDA recommended a closer relationship between the academe and the industry where SSAT was implemented. Every summer the students underwent a minimum of 240 hours of OJT with industry immersion in their senior year. This was complemented by a regular training course of the faculty specifically during summer. This training course included industry immersion programs aimed at experiencing the real working conditions. Later on, faculty members were sent to formal schooling for their graduate degrees in Metro Manila. More than half of the personnel, specifically those teaching technical and science-based courses underwent massive retraining courses through the various government programs.

Students who underwent OJT in the industries benefited from the program summarized as follows;

1. The program enhanced the employability of a student after graduation. During that time, more than half of student-trainee had been absorbed by the company where they had their OJTs.

2. The student-trainees were able to make use of facilities that the institution had not been able to provide.

3. It provided the student the real-life experience in the workplace, where the theories and concepts taught in the school were applied, including work ethics.

However, the said training program increased the cost of education on the part of the students. This is especially true to those who had their OJT in Manila and other industries outside Catbalogan. As a matter of policy, students were not allowed to receive remuneration for the service rendered. This policy was to encourage companies to admit a student as their trainees. This premise was derived from the fact that the industry will spend valuable time of their workers to mentor the student trainees. Some companies considered the trainees as liabilities rather than asset of the company.

On the other hand, the faculty that was sent to summer training and exposure to industries had provided them additional inputs for their instruction. The immersion of faculty in the industry allowed them to experience the actual work for most of the faculty that time has limited or no industry experience. It provided them a more in-depth understanding about the real life scenario which was necessary to effectively teach students the skills under actual circumstances.

However, the partnership was limited only to industry immersion and not helping the industry become more efficient and effective, termed as consultancy work. Consultancy services are generally provided by higher education institution all over the world. This is because the faculty in any university is supposedly expert in their field, capable of making critical analysis enhanced through research expertise. The program for faculty in SSPC was just like that of the students; they were there in the industry only to learn but not to provide solutions to the industry problems.

Almost all of those sent to formal graduate schooling had no re-entry plan. After they had acquired their graduate degrees, they had no significant contribution towards uplifting the research capability of the institution was observed. The administration was not able to inculcate to the faculty scholars their responsibilities as graduate degree holders. Instead, these faculty members developed a misconception that when they have already graduate degrees, they will be the next managers of the institution but never a researcher or technology developer/ innovator.

The technology that the faculty was able to develop as project requirement for their graduate degrees stayed in the institution and was never transferred to industries. The potential revenues from product commercialization or utilization of the industry were not realized as it was not the priority of the faculty and even the administration. The lack of appreciation on this knowledge-based product is probably because the government has not been serious in demanding utilization of knowledge-based resources in the industry. During that time, the funds support from the government is abundant and not strictly regulated.

1993-2000: Programs in any state university are always in peril specifically when there is a change in leadership or change in priorities of the government or funding agencies. It is in this period that the massive skills upgrading of personnel gradually faded away. Fewer members of the faculty were sent to training, unlike the previous administration. Faculty undertaking their graduate degrees outside of the institution was declining. Many members of the faculty have their graduate and post graduate degrees in SSPC wherein the courses do not require industry immersion. The students continued to attend OJT as requirement for graduation. All students in the undergraduate programs are required to undertake industry immersion with the courses in the College of Industrial Technology having the longest industry exposure of two semesters in

the students' senior year aside from the 240 hrs summer OJT. Civil and electrical engineering courses offered in 1982 also include industry immersion as a requirement for graduation, the first to do so in Region VIII.

One major change in the industry-academe relationship in the whole country was when the Technical Education and Skills Development Authority (TESDA) was put into law. TESDA's focus was on skills training and licensing/accreditation. TESDA provided the link between the academe and the industry. The number of members of SSPC faculty was tapped by TESDA as skills trainers and assessors. This collaboration enhanced/ strengthened the partnership between the academe and the industry.

2000-2005: In this period, the financial support from the government started to decline that greatly affected the operation of almost all SUCs in the country. Hence, the institution was forced to be prudent on its spending and find ways and means to continue to deliver its mandates and objectives through public-private partnership or linkages.

It is also during this period that the Institution was converted into a University. As a University, the government and its immediate community expected a much better performance from its students, and personnel. The two contradicting fact, the reduced funding support and higher mandate as a University were the greatest challenges to the administrator on how to let ends meet. This predicament forced the Institution to engage in income generating projects immediately. The university would like to generate income from the products of researches, but it was impossible due to limited capability and lack of commercially viable knowledge-based products.

The ideal interaction/relationship of the four-fold functions of a tertiary education institution; instruction, research, extension and production is shown in figure 7. A university through research

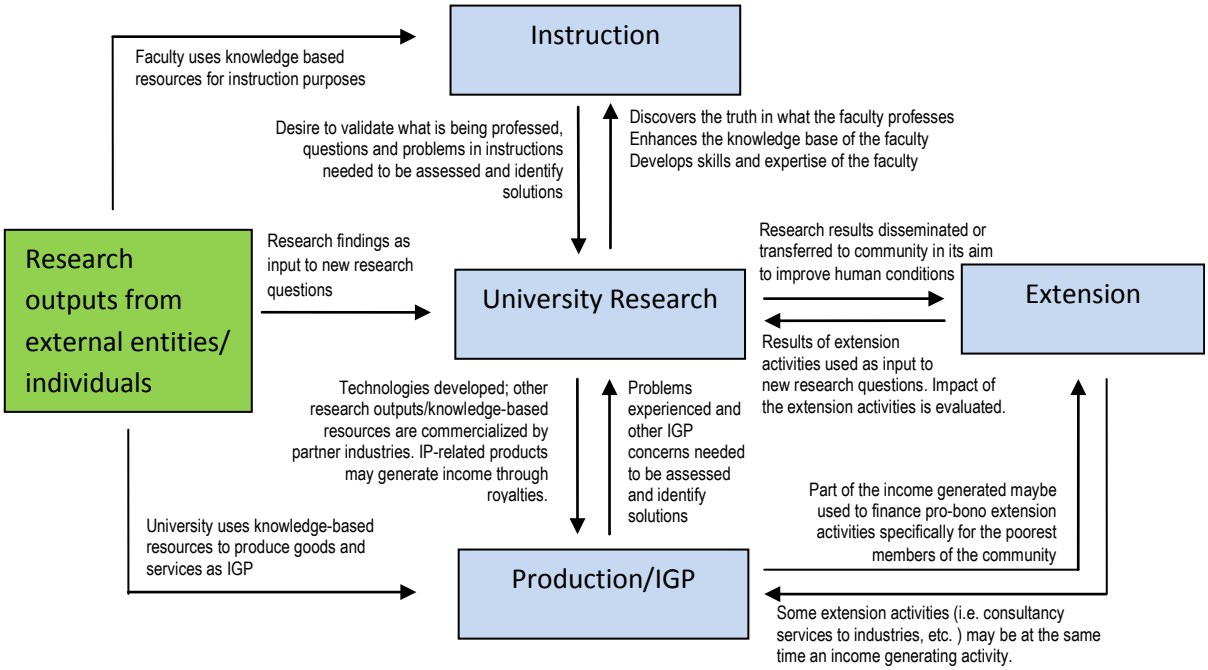

Figure 7: The ideal relationship of the fourfold functions of a University

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is a knowledge creator or a technology developer/innovator. The new knowledge becomes additional inputs to the instruction that can also be disseminated to its target clienteles as part of its extension services. The research process will require the faculty to read more and discover more. This will provide significant input to instruction. Truth regarding what the faculty is professing is proven through research which makes the discussion and analysis of problems, issues, situations, cases, etc. with the students become more in-depth. The technologies developed, information generated, and other research outputs are transferred/disseminated and utilized by the community that will lead to societal development. The industry can commercialize or utilize developed technologies, processes, and other research outputs to improve companies operation. Extension services like consultancy work can generate income for the faculty/consultant and to the university.

The model shown on figure 8 illustrates the vital role of the industry in providing the much-needed financial resources for the better operation of the university. The same model is also anchored on the research capabilities of the university to perform efficiently and effectively. If maximized, the university will be able to improve instruction, research and other infrastructure facilities. Before the introduction of the model to the university academic and administrative council, the office of planning research and extension funded an institutional research. It aimed at evaluating the human resources capabilities and found out that the institution is not yet ready for such model. This is because there are few personnel having the required track record to be considered experts with the personality to conduct industry related researchers and consultancy services.

A. Redirecting towards a better Industry-Academe Partnership

Early in the conceptualization of the Samar State University, the idea of utilizing its human resources and knowledge-based resources was put in the pipeline. The framers of the University had in their mind an institution with research potentials capable of generating knowledge-based resources that could be transferred to the community or to the industry for commercialization. Initially, the framers of SSU envisioned of an external affairs office with concurrent function as resource generator who would manage the institute knowledge-based resources. Upon evaluation of its potentials, the University falls short to be able to implement such relationship with the industry. This forced the framers of the university to re-shape its plans and focus on the things that should be done first before the more ambitious plan will be implemented.

The University is one of the low performers in terms of research productivity in the region having rated between level 2 and level 3 in this area in 2005 to 2008. In answer to this, the University came-up with strategy to improve its operation to increase its level along research and extension through partnership and linkages. Hence, SSU could not attain the vision to contribute to social development, when its key players are not capable of delivering the needed skills and resources.

1. The Formulation and Implementation of SSU R&D Roadmap

The analysis of the University human resources in 2000 revealed that the faculty has low R&D/E capabilities by choice. The low R&D/E productivity can be attributed to the educational qualifications of the SSU personnel. As shown on Figure 9, most faculty of SSU has masters and graduate degrees in education and

management as of 2010. Very few of them are graduates in science and technology related courses which may have contributed to low R&D in the University.

The conduct of the R&D/E function in a university is led by senior faculty with higher academic ranks, but in SSU its different. Research productivity of instructors is the highest compared to those other academic ranks. This research climate in the institution was weak for various reasons that have been aggravated further by the limited funds available for this purpose. The University looked into several models how to address the problem of low R&D productivity, but none would fit in for SSU case was unique. Many SSU personnel have masters' and doctoral degrees, not of their fields. Most of which are in education and management, instructors led the R&D/E activity, and senior faculty members are in their comfort zones for very long time, and doing R&D/E is just an added burden to them.

Knowing that only through R&D/E will the University be acknowledged as a great university, the R&D/E office proposed a roadmap, as shown on Figure 10, to the SSU administrative and academic council, which later was approved by the Board of Regents. Raising the R&D capability of the university will encourage industry-academe partnerships and other linkages here and abroad. These partnerships will produce the much-needed resources of the University. The main idea used in the roadmap is learning to conduct R&D by doing. The roadmap kicked off in the year 2000 through massive in-house R&D capability programs. Since human nature usually strives for more, simple research projects will graduate into much better projects later on. The faculty is expected to gain confidence to share his/her project outputs and join various R&D competition and product exhibition and research dissemination through publication. These practices will lead into the building of the University prestige as home of competent faculty, who are capable of developing new technologies, processes, etc. This prestige will encourage linkages with the industry and other institutions here and abroad. By the year 2030, the SSU is hoping to be one of the best universities in the country and acknowledge in the world. More importantly a significant social impact in its service areas is already felt and eventually become an instrument for the social and economic progress of Samar province.

2. The SSU Research and Extension Manual of Operation

The first R&E Manual was developed and approved in June 5, 2006 thru BOR Resolution No. 14, series of 2006. It aimed to regulate the processes and procedures on the implementation of research and extension programs/projects/activities. The manual guides the faculty, students and management as well as funding agencies. Other linkages in the conduct of R&E such as equivalent loads of the research implementers, incentives, approval and utilization of GAA funds for research. In 2011, it was updated to address the problems encountered during its implementation since 2006. These updates include dissemination and utilization of research outputs by the

target beneficiaries (communities and industries).

3. **Intellectual Property Policy Manual**

This manual was developed and approved by the BOR to ensure that the investments of the University are properly protected and that the University and the researchers will benefit from their intellectual work and outputs. This SSU-IP Policy is community-stakeholder-friendly as it provides an avenue that the IP of the product/technology maybe waived in favor of the community beneficiary. This policy ensures that the faculty-researcher and technology developer/innovator are properly protected and compensated. With this policy, more faculty and students are encouraged to work on technology development and innovation. In fact, about seven entries of technologies will compete in the Regional Invention and Contest and Exhibit (RICE) to be held on August 22-26 in Tacloban City.

4. **Capacity building program for the university and other government agencies**

The SSU-public/private partnership has been considered as a venue for the building capabilities of the university human resources. In 2001, the University became the host/secretariat institution of the Eastern Visayas Consortium for Industry and Energy Research and Development (EVCIERD). An extension arm of the DOST-Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD) provided avenue to SSU-public/private partnership. Massive trainings were conducted and provided to a member institution that built the capabilities of the faculty along research and technology development and transfer.

With these training programs, about 20 faculty were recognized and registered as consultants under the DOST programs on manufacturing and Productivity Extension (MPEX) Program and Agriculture Productivity Enhancement Program (CAPE). The program aims to assist and support the Micro, Small, and Medium Enterprises (MSMEs) and agriculture and fishery based industries in the region improve and increase productivity. These serve as a kick-off in the building private partnership with the University. As of this writing, about 20 SMEs had been partners of the University relative to technical expertise requirements, research and technology needs provisions.

B. Current University-Academe partnership

With better-trained faculty members of the university, more and more consultancy work, and collaborative undertakings with the industry have been established. Currently, the university-industry partnership includes the following;

1. Contractual research and development
2. Support of an industry's research and development activities
3. Consultancy by university faculty
4. On-the-job training of students in industry

Aside from the MPEX and CAPE program that have helped a number of local industries in the region, the University with the help of NEDA, DOST-PCIEERD, DTI, DOLE and other agencies including the Korean Overseas Assistance (KOIKA) was able to assist small scale business in Catbalogan and nearby municipalities. The University has strong collaboration with the Catbalogan Water District (CWD) where both parties benefited a lot from each other.

In 2010, the civil engineering curriculum of SSU implemented 1800 hours of OJT from the previous 240 hours. In the current year (2011) SSU was able to tap a total of about 77 industries for the student OJT programs. These industries are found in Metro Manila (28), 23 from Catbalogan City, 16 from other parts of the region and ten from other parts of the Philippines. This program provides additional skills to the students of SSU; that help them land better jobs here and abroad. In future years, the University envisioned to enhance the collaboration with the industry not only for the students to experience the real work scenario but to make them partners in generating new knowledge and technology innovation.

IV. CONCLUSIONS AND RECOMMENDATIONS

All universities are knowledge generators and technology innovator/developers. The fourfold functions of the university which are the research, instruction, extension and production are inter-related and must not be taken separately from each other. From this context, the following conclusions and recommendations are presented.

Faculty in the HEIs must contribute to building a body of knowledge that will be used for the benefit of uplifting the conditions of the community.

The demand from the universities to generate income must not be a reason to engage in IGP and other programs that deviate to its mandate and program offerings.

IGP activities and other programs by the university, through the community or the industry must also be an avenue for student and faculty training.

Commercialization of knowledge-based resources is the ideal income generating projects of the university. Such IGP includes consultancy work, commissioned researches conducted by the members of the university faculty. This IGP program is the ideal as it interact the other three functions.

This kind of production activity anchored on research will provide the much-needed financial resources needed to improve the operations of the University.

The IGP model illustrated in this paper is anchored to research; therefore, capabilities of faculty in doing research must be prioritized. Sending of faculty to further studies in their field of specialization in a research university should be considered.

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