GIS EDUCATION AND INTERNATIONALIZATION – SUGGESTIONS FOR A FOUNDATION FOR INTERNATIONALIZATION OF EDUCATION

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ABSTRACT:

The catch word in education in the era of globalization is "Internationalization". The key driver in globalization is economics, but the same is not strictly true about internationalization in education. Similar to the scenario in industry and commerce, where globalization means a diverse market, and a consequent enhanced income, internationalization of education has similar connotations.
Nevertheless, akin to globalization, internationalization will ultimately lead to competition and improvement in quality of education and enhanced transfer of skills between nations.
In this paper the state of education and international cooperation in southeast and south Asia are reported. The analysis shows the involvement of countries like Great Britain, Australia, and Russia.
It will be shown that German Universities should be engaged to a greater extent in international education for mutual benefits.
Internationalization needs drivers and the foremost of these drivers are alumni networks. The Stuttgart University of Applied Sciences as an example realizes this and wishes to leverage it for the overall development of the University.
It is in this context that the idea of a Foundation for Internationalization of Education (FIE), a nonprofit organization to be established jointly by the Stuttgart University of Applied Sciences (SUAS) and the alumni (through Active Alumni Groups) is exemplified mooted. Such a foundation primarily aims to bring about better international understanding of German science and technology excellence and also act as a catalyst for promoting techno-cultural exchanges with other nations, particularly in south Asia, south-east Asia and Africa. The findings are reported from the point of view of geo-scientists, but can be transferred to other sciences as well.

1. MOTIVATION

As motivation some personal experiences of one of the authors, A. P. Pradeepkumar, should be mentioned:

Before arriving at Stuttgart for my Masters studies, I have had little exposure to high-quality infrastructure that should exist for meaningful research and development. But even before coming over to Germany I have had the opportunity to make use of German expertise in the form of chemical analysis of the rock and mineral samples I was studying for my thesis work, back in the University of Kerala, in India.

The collaboration was with Prof. Raith and his team of students from the Department of Geology of the Universität Bonn. This was a mutually beneficial collaboration because I did not have the analytical facilities with me, while Prof.Raith did not have access to these rare rock types in a remote corner of India and also its equivalents in Madagascar and Antarctica, which his team was also interested in studying. So the collaboration that ensued was mutually beneficial and brought out results that would have been impossible to obtain alone. This resulted in significant peer-reviewed publications that vouch for the success of the program of collaboration. And the professor and his students gained access to some field areas which would otherwise have been inaccessible to them, if they were on their own.

This experience brings out the importance of collaboration: these can involve small teams or it can involve whole Governments.

But the outcome remains the same: better science and overall quality improvement and generation of scientific, socio-cultural, economic and political goodwill.

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2. INTERNATIONALIZATION

It is in this context that internationalization gains importance. A university is never an island. In the olden days scholars came from afar to involve in the affairs of the University. Its equivalent today would be students coming from the world over to the University. Here the University becomes an international, evolving entity that grows by assimilating the intellect of the incoming student and adding value to the student by inculcating in him the University's culture and expertise. This effort becomes truly successful when the student who comes in is capable of involving intellectually in the University and can take back his experiences home, to better his own and his surrounding's status.

Internationalization needs drivers and the foremost of these drivers are alumni networks. The driving forces of alumni networks are: mutual advantages, life-long networking, internationalization , and professionalization. 'Alumni networks can serve as a critical enabler of competitive institutional advantage, and constitute one of the few external organizations universities can exert considerable influence over', opines the Illuminate Consulting Group, in the 2006 study on alumni networks [1].

It is this increasing importance of alumni networks that the Universities realize and wish to leverage for the overall development of the institution.

2.1 Background

In this chapter the importance of education, science and research is exemplified for the state of Baden-Württemberg. Similar aspects can be found for other states of Germany and for other developed countries as well.

2.1.1 Strengths of Baden-Württemberg

Baden-Württemberg was established in 1952. Its industries like motor vehicle, high-precision machinery, IT industry, pharmaceuticals and laser technology are known world-wide, a tribute to the ingeniousness of the people of the state. Mr. Günther H. Oettinger, the Minister President of Baden-Württemberg has said that the future of the state lies in education, science and research and since the state lacks in natural resources, investment is in its most valuable capital, viz., the skills and abilities of its population [2].

The Innovations Index 2006 [11] has placed Baden-Württemberg as the most innovative region in the EU. Investment by the state government in education, science and research is also reflected in the number of educational institutes: nine universities, 25 universities of applied sciences, six universities of education, eight art and music academies, a film academy, a pop academy, eight polytechnics, seven private science institutes and 11 state-accredited technical colleges.

Technology transfer has been identified by the Minister as having prime importance and research scientists in Baden-Württemberg are involved in the most important research areas of the future. This has resulted in Nobelwinning work by researchers working in the state, for example, by Nobel laureates Christiane Nüsslein-Volhard, Klaus von Klitzing and Bert Sakmann.

Prof. Dieter Lenzen, Vice-president of the Hochschul-rektorenkonferenz at Bonn (The Conference of Presidents and Rectors of Universities and other Higher Education Institutions in Germany) has stated that Germany definitely needs intensification of internationalization in different fields [12]: as a management task of the Universities's management, for the education of students, for the research, for marketing activities in abroad for overseas students.

An exporting economy definitely needs well-educated technical people trained in Germany who live abroad, and who have cultural and educational ties with Germany. Global economic relations can be sustained and expanded only if the participants are able to understand the university, the way of intellectual work, the science systems, and the nature of the degrees awarded. Once foreign students return home they are the best ambassadors of German culture and economy.

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) has stressed on the need for attracting students to Germany, and thus through them build up capacity in the originating countries, for example by offering Summer universities in developing countries.. Their 'Welcome to Germany— Serbian schools, fit for Europe' program is a typical example (http://www.gtz.de/en/aktuell/21241.htm). In 2007/8 up to 150 young people should be invited from Serbia to learn about life and learning in German schools especially in Frankfurt and Offenbach. The Federal Ministry of Education and Research (BMBF) [5] has found that German researchers are increasingly involved in international cooperation. Over one third (37%) of scientific publications in 2003 were written with at least one foreign co-author, whereas it was under 20% in 1991. Basic researchers cooperate internationally more often than applied researchers. International cooperation will continue to increase, although prospectively less strongly than in recent years. Even though the USA will continue to be the most important cooperation partner, SouthEast Asian countries, particularly China, will play a much increased role.

2.1.2 Globalization and internationalization

Globalization has increased competition on world markets and internationalization of education is one route to tackle this. Through internationalization the best talents from the world over can be tapped, as also the best ambas- sadors created. Marketing of the plus points of the University is essential for successfully attracting the best brains. Now the United States of America is skims away the cream of students.

Even though Germany is not gaining monetarily by opening up its education to foreign students the intangible benefits are very high. And the information about the benefits of studying in

Germany should be publicized and should reach an international audience.

Internationalization is progressing in German universities—48% of university governing bodies have an internationalization strategy. The share of researchers who are of foreign origin currently averages 7.3% at German universities. The more application-oriented an institute is, the greater is this share and the extent to which the institute actively searches for staff abroad.

Periods spent abroad while at university stimulate a person's international orientation and raise the probability of international cooperations in the course of their academic or research career. For 57% of German researchers the USA is the main country of collaboration and visit despite the future importance of SouthEast Asia, and China in particular.

Most institutions experience a net utility gain from their international activities. Internationalization helps German and foreign researchers to make a name for themselves and have a strong presence in their own fields of study. International activities accelerate knowledge generation, avoid duplicated work, increase competencies and increase researchers' and Universities' output. For foreign students and researchers, a better working environment and equipment is an important motive for opting to study in or collaborate with Germany. Therefore the important motives for German universities are to increase their own attractiveness (competition for researchers and students) and obtaining funding from third parties like the EU.

Alexander von Humboldt Foundation (http://www.avh.de/en/-index.htm) and German Academic Exchange Service (DAAD), as well as the EU and the German Research Foundation (DFG) support is very important for international activities. The Alexander von Humboldt Foundation issues up to 600 research scholarships each year to foreign academics. The Individual institutions in Germany generally have a positive attitude to international activities and the presence of specialized units to offer administrative support is of great importance. BMBF recommends the creation of alumni systems (including former visiting researchers) and specialized units established to provide practical support for international activities in both directions. For the universities in particular, this means that additional funds must be found [5].

The BMBF has conceded that the development of alumni networks at German research establishments and universities is still in its infancy and ought to be strengthened immediately. It has been established that contacts established when foreign researchers spend time at German establishments lead to lasting network cooperations abroad. Alumni networks can perpetuate this effect and it is with these networks that foreign alumni can identify. This is decisive for subsequent cooperation. BMBF has said that the brand of the umbrella organisation carries considerable weight internationally and that the universities and research establishments (as umbrella organisations) should increasingly build infrastructure for alumni networks which can be used in a flexible manner by the individual institutes.

China, India and Russia have been identified as important players in the global knowledge economy and collaborations with these countries would be essential in the future [5]. South American countries also have certain specific niche strengths.

In terms of the number of cooperation agreements with German universities, USA, United Kingdom and France rule (according to Hochschulrektorenkonferenz, http://www.-hochschulkompass.de/); China ranks fourth and Russia fifth.

3. SOUTH-ASIAN AND SOUTHEAST ASIAN EDUCATION

The SouthEast Asian countries are Singapore, Malaysia, Thailand, Philippines, Vietnam, Indonesia, Laos, Cambodia and Myanmar. SouthEast Asian economy and its education has come under intense study in recent years. Sjöholm [7] of the Stockholm School of Economics has opined that the traditional export of relatively low-skilled products from SouthEast Asia is facing increased competition. An upgradation of production techniques in the region which requires a more skilled and educated labour force is needed. Education has not been emphasized in SouthEast Asia but this is changing [7].[1]

UNESCO has found that in the less-developed countries in the region, higher education systems are severely under-funded and face escalating demand, under-qualified academic staff and poorly planned curricula, and hence poorly taught students. Many of these systems are undergoing restructuring against a national, regional and global backdrop of higher education reforms in areas such as funding, resources, governance and curriculum development [8]. One of the key developments in the area has been the increasing growth of transnational education and cross-border exchange, providing an opportunity for SFIE to play an active role in the educational upliftment of the area.

Most countries of SouthEast Asia have public and private universities, while Vietnam has semi-public universities and Malaysia has universities owned by public corporations. Malaysia has university colleges (with limited number of faculties) and Thailand has Rajabhat universities (which used to be teacher training colleges). Several countries have community colleges, but Vietnam has people-founded universities and colleges. Quite a number of countries, e.g. Malaysia and Vietnam, host offshore campuses of foreign universities. A trend towards increased transnational education has also been noted, with Malaysia identified as one of the most developed and experienced in the region. Many countries in the region are importers of cross-border education from advanced countries like Australia, UK and USA, but nowadays universities in the advanced SouthEast Asian countries like Malaysia and

[1] Similar statements can be made fort he countries of South Asia like Laos, Vietnam, Nepal, Bhutan.

Singapore provide educational activities in Thailand and Vietnam.

3.1 Educational improvements in SouthEast Asia

The need for educational improvements in SouthEast Asia has accelerated because of the increased competition in low-skilled production and export, which has traditionally been the region's engine of growth. The educational standard differs substantially between countries in the region but none of the countries have put emphasis on education like that by Japan, South Korea and Taiwan. Countries in SouthEast Asia with a high income level tend to spend more on education, have higher enrollment rates and lower student / teacher ratios, than countries on a lower income level. But Philippines and Vietnam have an educational standard that is better than that indicated by these countries' low income levels. Though Singapore is the wealthiest country in the region and has the most developed educational system, education in Singapore still lags behind developed countries. Amongst the countries in SouthEast Asia, Singapore, Malaysia, Thailand, the Philippines and Vietnam are doing reasonably well in the area of education. But Myanmar, Cambodia, Laos, and Indonesia are faring badly. In Singapore, Malaysia and Indonesia there is a widespread concern that educational reforms are needed to achieve or sustain economic development. Malaysia has been emphasizing education throughout the last decades but it seems that the country has not achieved sufficient economic returns on the large educational investments. The main constraint on educational reforms in Indonesia seems to be financial. The widespread expansion of basic education in Indonesia in the 1970s has not been followed by similar expansion of higher education or by improved quality of the education. Such reforms will be difficult to pursue within the near future since the government is lacking the resources for costly reforms.

3.2 Internationalization of Higher Education in SouthEast Asia

Since the year 2000 the mobility of students and academicians around the world has increased. Student flows among countries in SouthEast Asia and beyond continue to rise. The governments are increasingly willing to aid student mobility with support programmes, helping them benefit from the educational and cultural experience of overseas study and professional development programmes.

In this context the term *transnational* education has to be mentioned. Following the Euopean Students Union (http://www.esib.org/index.php/issues/38-modes-of-education/-98-transnational-education), transnational education can be defined as any teaching or learning activity in which the students are in a different country (the host country) to that in which the institution providing the education is based (the home country). This situation requires that national boundaries be crossed by information about the education, and by staff and/or education materials.

Transnational education and the development of foreign branch campuses have helped reach the educational standards associated with higher education in developed countries such as USA, UK and Australia to a new generation of students who may not be able to afford or obtain the scholarships necessary for overseas study.

3.3 Consequences of international cooperation

Many countries of SouthEast Asia, such as Malaysia, Thailand and Vietnam, are importers of transnational education from Australia, UK and USA. European Universities, especially German ones, are nearly totally absent. In UK however, Universities are also engaged in transnational education like the Westminster University does (http://www.wmin.ac.uk/page-4658). This trend is forecast to grow: the UK alone expects the demand for UK-sourced transnational education in Malaysia and Singapore to grow from 67.000 students in 2003 to 271.000 by 2020 [9].

In importing transnational education on the one hand, countries such as Malaysia, Thailand and Singapore have also become exporters on the other by providing educational services to students from neighbouring countries and in setting up institutions across borders. All three countries have national objectives to become educational hubs in the region. This strategy is most developed in Malaysia and Singapore, where active government support and incentives have been given to overseas providers to set up branch campuses in their countries, e.g. Nottingham University in Malaysia and the University of New South Wales in Singapore.

Internationalization not only includes international student mobility, but also mobility of academic staff, educational programmes and institutions. The UNESCO Convention of Studies, Diplomas and Degrees in Higher Education in Asia and the Pacific formulated in 1984 anticipated this trend and the need for accompanying support and recognition measures. The Convention aims to promote greater cooperation to support the educational development for students, researchers, academics and professionals through the mutual recognition of studies, diploma and degrees in higher education in the Asia-Pacific region. At the heart of the Convention is the creation of conditions to facilitate greater and smoother mobility for educational and cultural exchange. To date, 20 countries have ratified the Convention, reflecting the growing commitment and trend for internationalization and cross-border exchange of students and academics to support economic, social and educational development. A key trend related to internationalization has been international mobility of leading academics and students to support the future capacity and development of local host institutions. For example, Singapore is picking up some of the best students, the best professors, the best institutions with the aim of them staying on to develop and build the international reputations of their institutions.

Nevertheless, not all cross-border activities are for commercial purposes. International development aid from more developed countries has supported countries such as Laos and Cambodia in student fellowship and academic staff development programmes as part of wider strategic initiatives to develop the capacity of the higher education systems. The General Agreement on the Trades of Services (GATS) will have a direct impact and influence on the higher education policies and developments in the region.

3.3.1 Cambodia

Let's examine some cases of education and internationalization in South- East Asia. In Cambodia, the ACC is the educational quality assurance agency, Without large commitment from all stakeholders, it will be hard for the embryonic ACC to carry out its mandatory duties in assuring and monitoring the quality of higher education throughout the country. ACC has obtained technical and financial support from foreign countries and international agencies.

Germany, or for that matter Europe has not put in any effort to assist this most backward of SouthEast Asian economies, in its educational effort. Here also SFIE can play a pioneering role. University of Phenom Pehn already has individual collaborations with 29 foreign universities [10].

3.3.2 Indonesia

In Indonesia the Director General of Higher Education is the main funding agency. Competitive research grants are also provided by other national institutions.

In 2000, there were 17.431 Indonesian students studying in Australian universities, topping the list of overseas students in Australia. Their spending is estimated at around 400 million a year, which was larger than the total higher education sector budget in that year. It is estimated that around 100.000 students study abroad each year. Even though the Government has not issued any permit for an overseas university to open a local programme, in reality there are already many overseas institutions operating in Indonesia. The presence of visiting scholars through international collaboration is also quite common in many universities. In short, all four modes of supply have already existed in the country for sometime. However, it was not seen by the academic community as a problem. The National Education System Act No. 20/2003 has stipulated that only an accredited foreign university can open a programme and that it has to collaborate with a local university. The Ministry of Trade proposed the following regulations for foreign universities to deliver services in Indonesia:

1. Only a foreign accredited university can conduct programmes of study; unaccredited foreign institutions are not allowed
2. Its presence is limited to five major cities (Medan, Jakarta, Bandung, Bogor and Yogyakarta)
3. It has to collaborate with a local university, invest in infrastructure, and involve local staff in its operation
4. It also has to comply with national regulations, including a mutual recognition agreement.

3.4 Understanding the Indian Education System

India today has the second largest higher education network in the world [6]. Universities in India are set up by the Central or State Governments by means of legislation, while colleges are established by either the State Governments or private bodies. All colleges are affiliated to some university.

3.4.1 Different types of universities

Central or State Universities – while the former are funded directly by the Ministry of Human Resource Development, the latter are set up and funded by the various state governments.

Deemed Universities – have the same academic status and privileges as a university. Examples are the Deccan College of Post Graduate and Research Institute, Pune; Tata Institute of Social Sciences, Mumbai; Indian Institute of Sciences, Bangalore; etc.

Institutions of National Importance – are university-level institutions that are established or designated by Acts of Parliament and funded by the Central Government. These include the Indian Institutes of Technology, Indian Institutes of Management and the All India Institute of Medical Sciences, etc. [2]

Most universities are 'affiliating universities', which prescribe to the affiliated colleges the admission criteria and courses of study, hold examinations and award degrees.

University departments impart postgraduate education and conduct and promote research in a variety of disciplines. Undergraduate and, to some extent, postgraduate instruction is imparted by the colleges affiliated to a particular university.

3.4.2 Classification of Colleges

Colleges in India come under four different categories. This categorization is done on the basis of the kind of courses offered by them (professional/ vocational), their ownership status (Private/ Government) or their relationship with the university (affiliated/university owned).

- University Colleges: These colleges are managed by the university itself and situated mostly in the university campus.
- Government Colleges: The government colleges are few, only about 15–20% of the total. They are managed by state governments. As in the case of other colleges, the university to which these colleges are affiliated, conducts

[2] In the field of geo-science institutions like the Indian Institute of Remote Sensing, IIITMK, the National Remote Sensing Agency or the Geological Survey of India Training Institute should be mentioned.

their examination, lays down the courses of studies and awards the degrees.

- Professional Colleges: The professional colleges are mostly in the disciplines of medicine, engineering, law and management. They are sponsored and managed either by the government or by private initiative.
- Privately Managed colleges: About 70% of the colleges are privately owned. But these institutes are also governed by the rules and regulations of the university they are affiliated to. Though initially started up as a private initiative, the state government also funds these colleges.

3.4.3 Courses and Degrees

Undergraduate courses, in general, are of three years leading to Bachelor degrees. The universities and higher education institutes award Bachelor's degree in Arts, Science, Commerce, etc. However, undergraduate courses leading to a first degree in professional subjects like Engineering, Medicine, Law, Dentistry and Pharmacy are of a longer duration ranging from four to five and a half years. Most of the engineering courses are for a duration of four years, while the medical courses are for a duration of about five and a half years.

Postgraduate Courses in Arts, Science, Engineering and Medicine are usually of two years duration. In some specialized fields for instance, for a Bachelor of Education (B.Ed) degree, the possession of a Bachelor's degree in any discipline is required before admission can be obtained. Some universities and higher institutes offer a diploma or a certificate course of shorter duration courses in disciplines like Engineering, Agricultural Sciences and Computer Technology. However the duration of these courses varies from university to university. Doctoral Courses

Doctoral courses like M Phil and PhD involve research work under a chosen/ allotted guide, leading to thesis submission and viva-voce. Successful completion of PhD designates the title of 'Doctor' to the individual.[3]

4. DAAD

The most important organ in Germany today in internationalization of education is the DAAD (German Academic Exchange Service). Three main activities are (1) the marketing of Germany as a site of advanced learning (2) the activities for alumni of German institutions of higher education (3) cooperation program with developing countries. DAAD's latest initiative is the creation of a website where any alumnus of any German educational institution could register online and get involved in alumni activities (http://www.germany-alumni.org/). DAAD's activities have lead even to structural changes in the German system of higher education i.e. programs with focus on developing countries.

DAAD has realized the non-commercial benefits of internationalization. Internationalization efforts will enhance familiarity with overseas qualifications and awards. The past few years have seen a strong increase in alumni activities in the field of German higher education. Fund raising and sponsorship are, in contrary to alumni organisations in the USA, not the main focus of alumni in Germany [13]. But alumni activities are essential to the advancement and internationalization of German universities According to DAAD the goals of alumni activities are: (1) Consultation of potential students (2) Professional integration of graduates (3) Consolidation of bilateral academic exchange (4) Advertisement for study research in Germany.

The benefit is mutual. DAAD's main aim through alumni activities is to make German Universities fit and ready for the global higher education market (http://www.daad.de/marketing/-en/index.html).

Worldwide knowledge has become the dominant factor for the development of societies. It's a mistake to assume that only industrialized nations are producing knowledge, outstanding science is done also in developing nations too and Germany can benefit from this by attracting international students and academics.

5. CONCEPT OF A FOUNDATION FOR INTERNATIONALIZATION OF EDUCATION

In this context a (Stuttgart) Foundation for Internationalization of Education (SFIE) can be a nonprofit organization to be established jointly by the Stuttgart University of Applied Sciences (SUAS) and the alumni of SUAS. The foundation aims to bring about better international understanding of German Science and Technology (S&T) excellence and also act as a catalyst for promoting technocultural exchanges with other nations, especially the developing ones. SFIE would be the location to meet people from all around the world; to establish scientific, technological and communicative collaborations worldwide. SFIE will aim at spreading the technological and innovative edge of German S&T to students and academics, particularly in SouthEast Asia and Africa. This would involve teaching select advanced modules in universities with which the German university establishes tie-ups. Discussion with the alumni through the SFIE would lead to the identification of potential departments/ universities for collaboration. SFIE will aim at perpetual knowledge linkages which will transcend generations, age, race, creed, language, economy and national boundaries.

[3] India has a strong remote sensing system and has a robust satellite launch and sensing capabilities. But the utilization of this data is not effective, either due to lack of training or due to lack of infrastructure, especially in the Universities and colleges. Also geographic data and maps are classified as "Restricted" meaning that it is not available for the public to use, even on payment. This has stymied the development of GIS and its applications in India. Private companies making use of GIS are also only now coming up.

5.1 SFIE's ultimate aims

The aims can be summarized as follows:

(1) Bring together the best of the world to the Masters programs and also make the Alma mater a preferred destination for PhD. For this marketing, scholarships, sponsorships, participation in education fairs, placement assistance, assistance for higher education etc will be essential.
(2) Help the alumni tackle globalization, by becoming part of the globalization wave.
(3) Exchange programs in SUAS courses, more internships, local community engagements, local hosts.
(4) Build up even more on the current specializations.
(5) Mentoring programs at student/faculty/university levels.
(6) Future campuses abroad. Achievements of the faculty, alumni and the industry linkages should be highlighted. Strong links with the media will help in popularizing and enhancing the SUAS' public image.
(7) SFIE will identify high-potential projects that have the possibility of attaining international funding, and international participation. Active Alumni Groups (AAG) will get involved in these activities. Such projects will get SFIE into international consultancy roles, and will make it an entity recognized in government circles. This will perpetuate the relevance and inherent value of the SUAS.
(8) Active Alumni Groups (AAGs) should actively scout for talented students for the University. The curriculum and the achievements of the university should be highlighted and these should be given prominence on the net.

Internationalization would also mean that there would be reciprocal technology transfer between Germany and universities in the developing countries. SFIE would, with the aid of German funding agencies, set up exchange programs wherein students from the university's courses could go to collaborating Universities abroad, and similarly students from these universities could do part of their studies in German University.

5.2 Active Alumni Groups

The SFIE is interested in setting up alumni chapters world wide. As a first step the SouthEast Asian chapter of the SFIE is planned to be setup during a joint workshop with the Indian Institute of Information Technology and Management-Kerala (IIITM-K); India is suggested as initial location. Alumni can register with the SFIE to get the assistance of SFIE in setting up *Active Alumni Groups* (AAGs) in their own countries.

Such a group will enable alumni to establish links with similar groups in other countries. These groups may act as catalysts for collaborative ventures, like interuniversity projects, seminars, faculty–student exchanges, industry– academy linkages etc. Some AAGs could group amongst themselves to attain coherent, common goals. The AAGs would function according to a common framework evolved by the foundation. The AAGs could delegate one of its members or take turns to represent it in AAG leadership meetings. AAGs should evolve mechanisms to generate revenue for its sustenance, possibly through industry sponsorship and through funded projects. All AAGs should ensure that alumni are involved and that at least one major activity is organized each year. SFIE and other AAGs will associate with this AAG thereby widening the scope of the event. Through these AAGs, and its activities, the SFIE and SUAS will have its presence established in regions that will be the centre of economic and intellectual activity in the future. The collaborations that are envisaged by the SFIE are:

(1) Joint seminars on topics of mutual interest. These seminars should enable both sides to add value to their experiences.
(2) Workshops (on topics of current interest) of 3-5 days duration. Competent alumni, faculty of SFIE as well as host institute faculty could contribute.
(3) Student/faculty exchange programs. Masters students could go on to do their thesis in each other's institutes, possibly one selected each year.

Faculty exchanges would enable transfer of new knowledge and gaining of new experience.

A journal of SFIE will keep alumni in touch with the developments in the Alma Mater on the net. All activities for the future would be listed in this bi-monthly, tentatively christened 'SPICE'.

5.3 DAAD support

The *AlumniPlus* program of DAAD will help SFIE involve in very meaningful activities. Canvassing for the best students to the Masters and PhD programs can be organized by participating education fairs in different cities where the AAGs would be active.

5.4 SUAS: where is it today in internationalization?

The university meets many of the internationalization criteria:

(1) It has a very heterogeneous student mix in the Masters level, with students from all continents enrolled in two Master programs (Photogrammetry and Geoinformatics, Software Technology).
(2) It already promotes faculty exchange programs as well as alumni revisits.
(3) It has broad-ranging research which is truly international in scope.[4]
(4) It already has a vibrant international culture, with programs like Coffee Day etc which promotes intercultural dialogue.
(5) It already has mixed hostels with very open communication channels.

[4] In case of SUAS, from mapping the Nepal Himalayas to open source technology in Internet GIS.

6. WHAT NEEDS TO BE DONE?

From these factors it is quite evident that, if a University is well on the path of internationalization, it requires only a little effort to polish and cap this achievement. The University needs to establish a donor base – many alumni organisation have insufficient funded [13]. Also it should be more proactive towards the usage of English. Not just the students but also the faculty could have some international character. To a certain extend this is satisfied in the University. Interuniversity collaborations should be established, not just in Stuttgart or Germany, but worldwide. A term of about 5 years would be needed to realize the goals of SFIE, after concerted efforts along these lines. When SFIE catalyzes international collaborations it will be stretching the limits of knowledge and discovery as well as contributing to the social enhancement in the collaborating countries. The most important input for the success of SFIE would be human resource mobilization. A small part of the annual budget of the SUAS maybe set aside for SFIE activities. SFIE will make it a policy to participate in educational fairs (at least once a year) in SouthEast Asia. Advertisements in the Education Supplements of leading newspapers in SouthEast Asia can attract talented students to the SUAS.

SUAS has rarely obtained talented students from the so-called CLMV countries, i.e., Cambodia, Laos, Myanmar and Vietnam, countries struggling to raise their economy, but with a talented graduate population. True internationalization will happen when skills are exported by SFIE to developing countries as is being done in Hong Kong [3].

The Foundation for Internationalization of Education will aim at 'skills portability' what the authors would like to term as IPODization of skills, something that SFIE can excel in.

7. REFERENCES

[1] Four Drivers of Alumni Networks www.illuminategroup.com, March 2006.

[2] http://cordis.europa.eu/baden-wuerttemberg/home.html

[3] Working Group for International Cooperation in Skills Development Skills Development Policies and International Cooperation in E and SE Asia: Debates in Skills Development, Hong Kong, Feb 2007.

[4] Höfer, H. 2006. For an attractive Germany: Venturing Freedom—casting off shackles. Bundesverband der Deutschen Industrie e.V., Berlin, 161p.

[5] Internationalisation of German Science and Research: A Study for the Federal Ministry of Education and Research (BMBF). Fraunhofer- Institut für System- und Innovationsforschung (ISI), Karlsruhe, Centre for European Economic Research (ZEW), Mannheim and Technopolis Ltd., Amsterdam, June 2007, 37p.

[6] http://www.educationindia4u.nic.in/edu.asp

[7] Sjöholm, F. Educational Reforms and challenges in Southeast AsiaWorking Paper No. 152, September 2002 (http://www.hhs.se/eijsp), 31p.

[8] UNESCO Higher Education in South-East Asia Asia-Pacific Programme of Educational Innovation for Development, UNESCO, Bangkok, 2006. viii + 254 p

[9] British CouncilVision 2020: Forecasting International Student Mobility: a UK perspective British Council Publications, London.

[10] Duggan, S. J. Role of International Organizations in the Financing of Higher Education in Cambodia Higher Education 34, Kluwer Academic Publishers, Netherlands, 1997

[11] Statistisches Landesamt Baden-Württemberg, 2006: *statistik aktuell – Innovationsindex 2006*. www.statistik.baden-wuerttemberg.de/Veroeffentl/Statistik_AKTUELL/803407004.pdf [2008-05-22]

[12] Lenzen, Dieter, 2007: HRK-Strategie zur Unterstützung der Internationalisierung der deutschen Hochschulen. http://www.hrk.de/de/support/4011.php [2008-05-22]

[13] Platzer, Kerstin, 2005: Erfolgreiche Bindung von Alumni – Realität an Hochschulen im deutschsprachigen Raum? Auswertung der empirischen Untersuchung. Fachhochschule Wiener Neustadt für Wirtschaft und Technik

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