

Can we propel SCE higher?

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Summary

In its first part, this document reports the key ideas presented in the sessions attended by the author at the QS Asia Pacific Professional Leaders in Education, APPLE, conference held at Nanyang Executive Centre from Thursday 04 August to Saturday 06 August. More details about the conference program are available on its website (<http://www.appleqs.com/>) . The report includes the results of other discussions conducted outside the regular sessions. The findings from reading the different brochures available at the various booths are also briefly mentioned.

The second part details some recommendations specific to the School of Computer Engineering to fulfil the goals for which I attended the conference.

1 Reasons to attend

The School of Computer Engineering (SCE) sent an announcement to its staff indicating that it will provide the support to attend the QS APPLE conference held on campus. Together with Dr. Pramod Meher I applied to attend and the dean of the school approved. My personal motive to attend was to learn more about top universities in the world and their operation. I also asked my head of division, Associate Professor Graham Leedham, about any duties that he wants me to fulfil by attending this conference. His requests were:

1. to get some information and understanding of how education and universities in the region are changing with globalisation, and
2. to see how SCE can become more competitive raising a higher profile to attract more international students and a bigger amount of collaboration for research.

The following section reports the different aspects of the sessions that I attended while section 3 gives my recommendations to the school in order to fulfil the stated goals.

2 Among the leaders

Before describing the sessions, it is important to give a short description first of the organisers of the conference. The *QS* in the name stands for the company named **Quacquarelli Symonds Limited** based in London, the United Kingdom and with offices in different countries including Singapore. Their website (<http://www.qsnetwork.com>) claims that they are “The world’s leading network for top careers and education”. This company together with the Times Higher Education Supplement (<http://www.thes.co.uk>) produced a ranking of the top world universities in November 2004. Both parties are commercial entities that benefit financially by publishing the ranking and organising this as well as other conferences dealing with higher education.

On the other hand, another ranking started in 2003 by the Shanghai Jiao Tong University in China (<http://ed.sjtu.edu.cn/ranking.htm>) . The original purpose for the university’s work is “to find out the gap between Chinese universities and world-class universities.” The university claims that it is done for academic interests without any outside support.

Both rankings are updated annually and they have different criteria to rank the universities. The top schools in both lists are similar. However, as the order increases the difference between both

rankings becomes quite wide. As an example, NTU is number 50 on the Times list while it is in the range of 302–403 (range boundaries have duplicate entries for ties) on the Jiao Tong list. It is predictable that other rankings may come up in the future. Students will take note of such lists and might get affected. It is however important to recall that the top schools are almost the same on both lists; the really good universities are at the top no matter how they are measured. NTU is looking forward to becoming one of that league.

This background information on the conference organisers is sufficient to indicate that the conference had a few sessions of “marketing” for QS and the Times Higher Education Supplement. Nevertheless, the other sessions presented high quality work. The discussions outside the sessions proved to be quite valuable as well.

2.1 Will students come?

Students attend foreign universities for various reasons. In Europe and North America students tend to study abroad to experience a different culture. They are essentially content with their own institutions and just want to add some “spin” to their life for a short period. On the other hand, students from other parts of the world might travel to access a better education that is lacking in their home country. Some of the students travel to improve their socio-economic status, to build a strong network of acquaintances, to find employment once they finish their studies, or just for the personal experience. A number of countries are attempting to lure those various types of students to attend their respective schools.

The countries looking to become an educational hub for international students tend to do that to acquire a larger geopolitical influence, to achieve more prestige, and to get a net inflow of intelligent people who might boost the prosperity of the country. Some countries, however, are short-sighted and think of that inflow of students as a short term source of income. Such countries and their educational institutions are usually looking to increase the number of students without much thought about the quality of education provided. The reputation of those institutions suffers over time and such a scheme ends up in a few years with the institution being a place where a certificate is bought rather than earned.

On the other hand, reputable universities tend to present their students with a full life experience that includes different attributes at the country level as well as at the university itself. Some of those attributes are essential, some are expected to exist by most of the students, and some provide some degrees of excellence to the university in the eyes of the students.

For the country, the essential attributes include:

- the rule of law,
- the civilised social interactions of the locals,
- the respect for individual rights,
- a modern infrastructure,
- a strong education system,
- and government oversight of education.

The students expect:

- a stable economy,
- an affordable cost of living,
- some stability in the student fees,
- an opportunity to work after graduation,
- a good amount of tolerance for diversity,
- a simple visa process,
- and a simple procedure for the rest of the family to visit the student.

To excel, the countries provide:

- quality assurance measures for their educational system,

- opportunities to migrate,
- allowances for extended visits by the family or even permanent residency,
- tourists' attractions,
- availability of other citizens from the original country,
- a good amount of wealth that translates to opportunities for the students to eventually become rich if they work hard,
- a good history and reputation,
- political alliances with the home country,
- and a complete society (not just the education system) using a familiar language.

On the university level, there are also some essential, expected, and excellence attributes.

The essential attributes include:

- an accredited degree,
- a recognition of the previous degrees,
- clear rules,
- a reputable "brand" name,
- and a familiar (possibly single) language of instruction.

The expected ones are:

- modern learning styles,
- high quality facilities,
- truth in advertising the university,
- and good support services.

The students are further looking for:

- a quality experience,
- a rigorous curriculum,
- flexible study modes,
- scholarship support,
- strong alumni associations,
- allowances for students mobility (even study abroad in yet a different place during their study at that university),
- a good (in the eyes of the student) history, reputation, age, wealth, and size.

Given all these requirements, the universities must work to improve the students' experience and provide them with excellence first impressions that will become lasting impressions of a top quality university.

2.2 Shall we then change everything we are currently doing?

School administrators should think carefully about the various services that they provide to their students. The following question is quite important. *If we were in an ideal world with no constraints, what are the ideal services that I should provide to the students?*

For each of those services, we need to measure our current performance and then prioritise the services to:

1. find out if further resources are needed. Student surveys and looking at services in other universities can help in this regard.
2. figure the facts that the top management of the university see as important to take the decision for funding any service.

3. generate your own revenue so that you can ask for even more budget.
4. raise your own profile.

Once we know where we are, we can start “marketing” our school. In section 2.3, I discuss some of the social issues against marketing campaigns. I will first present the marketing strategies in order for the following arguments against such practices to have some contextual meaning.

Marketing proponents argue that the environment around us pushes us to compete with other universities just as companies compete with each others. Just as companies need marketing so do the universities. In this case, the students and the parents are the consumers and the points to consider for a successful campaign are:

- what the others in the market are doing,
- the market segmentation (in other words what differentiates my university from others),
- how the program (curriculum, modes of delivery, timing,...) is designed to fit the consumers needs,
- the pricing,
- the promotions and advertisements made for the program,
- the public relations that might help in marketing,
- and the good brand name.

The issue of branding might seem strange in an educational environment but it helps to formulate a story defining the unique position of the program. Internally, it helps to understand your own qualities and externally, it helps to promote the points of strengths and uniqueness. It helps to convey the attributes of the school whether they are real physical qualities or emotional feelings. the brand involves a visual image, a name, an identity, but also future promises and obligations on the institution. In the eyes of the consumers, it creates value, difference, and quality guarantees. A good brand gives some competitive advantage in recruiting and its quality must be continuously assessed through solid research.

In fact, to recruit students the school should embark on a diversified marketing campaign to target the different categories of consumers. The students are the ones who will study, but it is their parents (specially for undergraduate education) who will pay the fees! All the departments and schools within a university should work harmoniously and tell the same “story” to reinforce the brand name of the university. There must be a balance between the actual physical brochures and the virtual electronic web-based material. The investments in such branding must be for the long run. It does not pay-off immediately. The participation of each individual in the promotion of the “product” with its unique price and place in a persistent and patient manner to all people is the key. The eight ‘P’s’ in this last sentence are important: *participation, promotion, product, price, place, persistent, patient, and people*.

That formula is enhanced in the case of universities by the fact that the academic staff have their own international network and they can play to their own research strengths.

Some universities use agents in different countries to recruit students on their behalf. Those agents identify the needs of parents and students and understand the educational and visa requirements hence they can facilitate the application process and speed up the response time. They can also communicate with the local government bodies. However, some of them might turn out to be rogue agents that forge documents, target unqualified bogus students, coach the students to pass the visa interview, offer false incentives to the students’ families, and misrepresent the school. The use of agents thus must be considered prudently.

For the marketing proponents a good student market is characterised by:

- appropriate economic conditions,
- existing institutional links,
- existing international links between the two countries,

- an established educational system,
- large demographics,
- and unmet demand.

An effective market research looking at what the competition is providing while cultivating strong local contacts coupled with frequent visits to the local market yields a successful recruiting campaign.

2.3 Education is a mission not a commodity

Among the attendees of the conference, another view prevailed through the informal discussions outside the sessions. I had the chance to speak with representatives from Australia, Denmark, Germany, Kuwait, and my own country Egypt that expressed a different take on the whole issue of education.

Some mentioned that the marketing component is over-exaggerated while others went all the way to say that this whole marketing talk is non-sense. A qualified critique from the acting head of the office of international development of Monash University in Australia blamed the “massefication” of higher education. In his view, a number of universities are doing now what Monash University did about ten years ago and of which Monash is not very proud. Those universities are looking for numbers. They want a larger student body and they want a larger income out of them. That economic desire has a big influence on the university’s decisions and can unfortunately lead to a destruction of the university’s reputation as an academic institute.

One of the attendees (a German) went even further to say that education is not a commodity but rather a mission to preserve the knowledge for the human kind to continue life. It is a social duty on us for the younger generation. The German system when viewed according to the British or American measures seems inefficient and lousy but he argued that we should look at the end product of such a system. The students take longer to finish and the professors do not “care” much for them. The professors let the students actually make mistakes sometimes to learn from them. The students come up with their own solutions in groups and learn from each other. The system puts them in real life problems with companies to solve the real industrial problems an not just simplified case studies. That process takes longer, costs more, and is harder on the student but the outcome is much better.

In general, most of the people to whom I talked preferred to look for quality over quantity. For them, education (at least at the undergraduate level) is more of a service that the society provides at a fair cost to its students. Those who are able to continue such studies are needed in different sectors in the society. Hence, education is not for sale to the highest bidder.

Graduate studies have a different purpose and focus. The research outcome of such studies help the country to grow and advances it into the future. The best talent available worldwide that can solve the research needs of the country should be sought.

2.4 International students

In recruiting international students there is a need to understand their academic cultures and provide remedial training sometimes. For those and other obvious administrative reasons, the automation of the enquiry management from the huge body of international students is of great importance.

There is a need of balance in getting students from different countries for a few reasons.

- Socially, the balance ensures a cosmopolitan campus and a true international image for the university.
- For the longterm, the balance ensures a much broader reaching network of alumni and supporters through the families of the students.
- Financially, the balance allows the university to diversify its sources of income in case of political unrest or economical collapse in some regions of the world.

International students are foreigners in their new place of living and special attention to their welfare is an obligation on the school. This attitude from the good schools starts before the students arrive to campus, gets stronger with the first orientation programs and several forms of support upon arrival, lasts while the students are studying, and even continues after they graduate till they leave the country if they decide to do so. A strong relationship with both the students and their parents

(through post cards, greetings letters, phone calls,...) during the whole period raises the stakes of the university and gives it free publicity among their own network of friends. Re-integration programs and alumni communications after graduation are also quite valuable to both the students and their families.

2.5 How to spend on all that?

In a session discussing scholarships, the representative of Leiden University in the Netherlands stated that his university is looking for “first class students for first class research” and the Dutch government emphasises “quality over quantity”. Most of the attendees in this session focused their attention on scholarships for graduate studies rather than undergraduate.

Most of the universities see a strong need for scholarships for both the local and international students. The cost of graduate studies is quite high and usually beyond the abilities of individual students and their immediate families. Universities however, show a large variation in the allocation policy. Some require the student to attend the university for a short period first after which they are assessed and might be granted a full scholarships while other places give the students some assistance upon their arrival and re-evaluate on a yearly base. The initial assistance can be in the form of a permission to work on campus as a teaching assistance or research assistance. In some cases, it can be a reduction or waiver of the fees.

The issue of fairness of allocation and whether the amount of the scholarship is the same for all the students or dependent on the specific student’s case is widely varying between universities. They all agree however, that there must be clear rules communicated as early as possible to the students to avoid any misconceptions.

The attendees shared some advices.

- Keep a list of funding agencies and give this information out to the students when they think of applying.
- Convince the university’s administration of “filling some of the empty seats” just as the aviation industry does with the empty seats at an aeroplane that are sold at much lower prices.
- Nurture an understanding of the social mission of education among the governmental and private sector bodies surrounding you.
- If possible, argue for a percentage of the fee’s income to be transferred to scholarships.
- Make sure that you have a good balance of the three income sources:
 1. fees from students to offset the daily running costs,
 2. a large endowment fund whose dividend provides a stable income over the years,
 3. and a flow of continuous donations to fill the gaps between the income from the endowment’s dividend and the demand of the research program.

If possible, a good part of the donations should go to increase the size of the endowment.

3 So, what’s next?

The recommendations presented next are my personal attempt to help in achieving the goals of the school. I divide them into several categories covering the written material about the school, our efforts to acquire more graduate students from abroad, and our research output.

Some of these recommendations might be currently applied. I am new to the school and might have missed some activities going on. If so, please accept my apologies.

3.1 Are we presenting ourselves in the best manner?

Table 1 indicates the number of research projects per engineering school presented in the university report titled “Research in NTU 2004”. In the eyes of a student looking at this report, the output of the School of Computer Engineering is clearly weak. My assumption is that our school did not put enough

Table 1: Research projects per engineering school as in “Research in NTU 2004”

School	Research projects
Mechanical and Aerospace	13
Electrical and Electronic	12
Civil and Environmental	5
Material Science	4
<i>Computer</i>	4

effort to present itself well in this publication. In the future, we should improve. Our own research newsletter has more research projects than what we presented to the university for advertising our school worldwide.

A look at the website of SCE (<http://www.ntu.edu.sg/sce/>) and those of the other schools reveal the same issue. On our link to conferences, we have only four events listed. However, we do get almost daily email announcements for conferences. Why don't we put these on the website and make them accessible to our current students as well as our future ones? Compare this to the site of the School of Mechanical and Aerospace Engineering where a link on the main page takes the viewer to a long list of research activities (seminars, conferences, short courses,...)

Our site is “sequential”. The viewer who is interested in research will have to skip over the undergraduate and graduate studies before reaching the research areas. Even then, the paragraph is not directly linking to the five research areas but the reader has to go to another page first. From that second page a link exists to a third page where the areas are described. In contrast, the School of Electrical and Electronic Engineering has a direct link to the research areas from the main page. Their page is not sequential either but, to the viewer, all of their activities are having similar weights.

Graduate studies involves cooperation between different institutions. We do not show on our website how much work we are doing with the rest of the world. The MAE school does an excellent job in that at (<http://www.ntu.edu.sg/mae/Research/rescollab.asp>) .

At the conference, I collected some of the brochures given by other universities. I have those available for anyone interested in comparisons with what our school offers.

Simply put, my first suggestion is to improve the way we present ourselves to the world whether it is in printed material or on the web. The reality is better than what we present. Presenting it well can actually improve this reality in the future.

3.2 Getting students

The focus of the school so far has been to get students mainly from China and India. I propose that we continue that and forge some strong research collaborations with universities in these two countries. If we manage to get the students at those universities involved in early research work in their final undergraduate year or in their master degree, they might come here for the PhD. That also allows us to screen the students and know their research abilities even before they come.

On the other hand, I also propose that we seek other students from different countries. The university currently has a special program for Iranian students. Due to their visa problems with the USA, a large number of Iranians are looking for other venues. They tend to be extremely good students and that is the reason for the university's special offer. For a reference, see (<http://www.ntu.edu.sg/GradStudies/Research+Programmes/Fees+and+Financial+Assistance/igs.htm>)

The QS company that organised the conference is holding several exhibitions through the year. I propose that we attend some of these exhibitions and target students from both Europe and the Middle East in addition to students from Asia.

We should ask our faculty members to use their personal contacts in their original countries in order to get more high calibre students. In fact, one of the promotional points of our school could be the number of countries and languages represented in the faculty members of our school. We *are* an international school.

3.3 Funding and our research

In my opinion, the school should also work to create its own research endowment if possible. Our links with the industry available through the industrial attachment program is a good way to start getting research relevant to the local industry. This is also a way to convince some corporations to donate money to our endowment.

I also propose that we do a yearly symposium for our graduate students to present their research. Such an event can trigger them to work more and eventually lead them to publish the results later in a conference or journal. It is also a good training ground for most of them who will be presenting their research for the first time to the public.

Each Centre or Research area should have their own regular seminars. Once every week or two a student from the group should present in an informal manner their research status. The audience then comments on the work and gives suggestions for improving to the student. These presentations help to keep the students on track, prepare them to present something even larger at the yearly symposium, and definitely help them to bring their research up to the level of journal publications.

The interested individuals in the industry can be regularly invited to the weekly seminars and the yearly symposium. This is another way to keep the research related to the industry and raise the possibility for funding.

It is also possible to setup a framework for students in their final year (both undergraduates and graduates) to contribute for a collective monetary gift to the school. Over the time, this gift will accumulate in the endowment fund and the sense of rivalry between the different batches can drive them to give more to outperform previous years.

Lastly, I think we should target some individuals in the society as well for endowing chairs in the school. Those chairs can be named after the individuals or their companies.

4 Can we spring forward?

To conclude, I think that we can definitely improve the image of SCE and achieve the goal of having great research done by the highest quality of students. This needs some diligent work and I hope that my suggestions can help us in achieving it. If other colleagues read this report and think about our current status versus the other universities worldwide, I am sure that they will come up with other suggestions as well.

At the end, I must thank the school for allowing me to attend the conference.