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Openness and reform as dynamics for development: A case study of internationalisation at South China University of Technology

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Abstract. Universities worldwide now encounter far greater challenges, and are subjected to an unprecedented level of external scrutiny. The change in governance ideology in the higher education sector has altered the way in which universities are managed, a phenomenon identified by Slaughter and Leslie as academic capitalism. This article examines how Chinese universities are responding to this phenomenon in their cultural complexity and social contexts, using South China University of Technology as an example. At the same time, the concepts of globalisation and internationalisation are taken as salient features of our times, and are often mistakenly used interchangeably. This article argues that they are fundamentally different, reflecting phenomena with different rationales, objectives and effects. By presenting an analysis of China's internationalisation of higher education through an in-depth case study the findings of this study shed light on the general current state of internationalisation in the mainstream of China's higher education, and underscores the idea that changes attributed to globalisation are modified and fashioned by the particular circumstances and choices of local institutions. The study vividly reveals how local circumstances can be used to manage the global within the local. It reports how the selected case continues to develop in the context of market transition and globalisation.

Keywords: academic capitalism, China, globalisation, higher education, internationalisation, the Open Door policy, the university

Introduction

Universities worldwide now encounter far greater challenges, and are subjected to an unprecedented level of external scrutiny. Resource everywhere is scarce. At the same time universities have to accommodate the push from below – rising social demands for higher education opportunities – and the pull from above – growing demands for advanced skills and knowledge from increasingly sophisticated economies simultaneously. Within such a policy context, universities are very much governed by market ideologies and the corporate discourse of efficiency and effectiveness. The change in governance ideology in the higher education sector has altered the way in which universities are managed, a phenomenon identified by Slaughter and Leslie (1997) as 'academic capitalism'. This article examines how Chinese

universities are responding to this phenomenon in their cultural complexity and social contexts, using South China University of Technology (SCUT) as an example.

The theoretical framework

Conceptually, this paper deals with the relationship between globalisation, internationalisation and university from a perspective of academic capitalism. Globalisation is increasingly characteristic of the realm of knowledge production. Insofar as this process is altering the nature of research, it touches the heartland of the university, its modes of organization, and its core values (Gibbons 1998).

The concept of globalisation spans various separate yet overlapping domains (Sklair 1998). Ultimately, it is a process spearheaded by multinational financial and industrial conglomerates (Burbach et al. 1997). The widely discussed globalisation phenomenon fundamentally results from the globalisation of economic life, which is largely a universalisation of capitalism (MacEwan 1994). Today's globalisation is a market-induced, not a policy-led, process (Mittelman 1996), driven by market expansion (Wallerstein 1990; United Nations Development Programme 1999).

Globalisation and internationalisation are both taken as salient features of our times in significant modern and post-modern social theories (Held et al. 1999). They are not only most interchangeably used in academic circles, but are also often confused in the wider world. They are, however, two different terms, reflecting phenomena with different rationales, objectives and effects (Welch 1998).

As globalisation is radically reshaping the face of the university worldwide through market competition (Kishun 1998), internationalisation is entailed. With the advancement of human understanding and the universality of knowledge as its fundamental meaning, internationalisation is principally different from globalisation in that it refers to the reciprocal exchange of people, ideas, good and services between two, or more nations and cultures identities (Yang 2002a). It can have very different implications in a fractured world arena with disparate values, beliefs and customs.

The current world trend of globalisation has delivered clear disadvantages as well as benefits. Its effect on higher education is not likely to be uniform, nor is its outcome inevitable (Curie and Newson 1998). Neither globalisation nor internationalisation is an uncontested phenomenon or concept. Ideas of globalisation are always implemented only under the specific conditions of institutions, while the impact of globalisation must be measured against the retention of local values and contexts.

The other key concept within this theoretical framework is academic capitalism. Slaughter and Leslie propose that:

> To maintain or expand resources, faculty had to compete increasingly for external dollars that were tied to market-related research, which was referred to variously as applied, commercial, strategic, and targeted research, whether these moneys were in the form of research grants and contracts, service contracts, partnerships with industry and governments, technology transfer, or the recruitment of more and higher fee-paying students. We call institutional and professional market or market-like efforts to secure external moneys *academic capitalism* (Slaughter and Leslie 1997, p. 8).

The focus that has been placed by Slaughter and Leslie is on the political economy of the relationship between universities and external business firms. They are concerned with both the external environment and with academic culture. Based on their empirical investigation, they argue that academic work has been fundamentally altered. The model of government-funded research has shifted from long-term programmes of 'pure' research under academic control to university-industry partnerships in which the direction of research is directly shaped by potential commercial applications. Universities are now more incorporated in industry, and their ethos shifts from the client welfare of their students to the economic bottom-line. The shift from full public funding to partial dependence on market sources of income undercuts the tacit social contract whereby universities have been treated as unique institutions (Marginson and Considine 2000).

Like Slaughter and Leslie, Burton Clark (1998, p. xvi) has produced work on where universities are heading. He maintains that universities have been pushed towards internal change because there is a deepening asymmetry between environmental demand and institutional capacity to respond. This 'imbalance' leads to 'institutional insufficiency'. Traditional ways become inadequate. In the new context universities need to develop a capacity in selective and flexible response. Universities successful in this period are doing so.

As Marginson and Considine (2000) correctly point out, institutional missions and structures have changed in the encounter between the world of the academy and the world of business and industry. It is the purpose of this article to examine, through an in-depth case study in a concrete flesh-and-blood form, whether or not China's current practice mirrors what is happening in a range of other countries, and to draw on recent relevant literature to frame these issues.

Data collection

This article is based upon fieldwork and field interviews carried out by the author at SCUT in 1998. Data derived in such manner hope to portray the living reality of this individual institution, and the perceptions of relevant actors.

The choice of the interview is based on its advantages. Interviews are particularly important source of data collection because internationalisation in China is more emotional than that in the West for cultural reasons. Socio-cultural context, which always plays a crucial role in the process, is even more pivotal on this occasion, and one of the main goals of this research is to look at these issues. Interviews are appropriate here as they are flexible and adoptable to individual situations (Davies 1997). They permit probing into the context of, and reasons for, answers to questions about hope, aspirations, and concerns to elicit accurate information.

Unstructured interviews were rejected as (possibly) being too aimless. Semi-structured interviews were preferred. When selecting targets for intensive interviews, a purposive sampling was adopted to identify the interviewees. The method is particularly effective and appropriate for this type of qualitative research (Punch 1998). By using this sampling method, the selected interviewees were knowledgeable and able to provide sufficient information about how external forces have influenced the daily operation at their institution. They were either professors or senior administrators, and were often both.

Interviews were all conducted in Chinese. As is cogently argued language is more than a means of communication about reality, it is a tool for constructing reality (Spradley 1979). The length of interview was flexible. While the longest lasted 2.5 hours, the shortest was only 25 minutes. Most of the interviews were type recorded. Of those who hesitated or declined to be recorded, the researcher asked for permission to take notes.

As a typical technology university under the jurisdiction of the Ministry of Education, SCUT's practice may throw some light on the general conditions at many other Chinese universities. However, this article does not aim to claim that its findings are representative of the accurate situation in China.

The Chinese higher education system and SCUT's location within it

By the close of the 18th century, China had perfected one of the world's most durable political systems during 2000 years of its imperial history, and had developed a unique civilization that had deeply influenced the culture of its neighbouring countries. China's higher education had evolved according

to its own logic, and never deviated from its developmental path, despite external influences. Over such a long historical process, a unique set of scholarly values arose in China. There was no institution in Chinese tradition that could be called a university. Instead, the imperial examination system and the academies or *shuyuan* were key elements of ancient Chinese higher learning (Hayhoe 1996, pp. 10–11). Higher education circles confined their dissemination of knowledge to a provincial level, and persisted in disregarding knowing anything of the rest of the world.

The 19th century saw the diffusion of the European model of the university throughout much of the world under conditions of imperialism and colonialism. As both a crucial gateway to the world and a means to social development, China's higher education should have taken the lead in introducing and assimilating advanced culture, science and technology in order to promote social and economic development. Yet, due to its exclusivity, Chinese higher education trained traditional Confucian scholars with little knowledge of the outside world. Although Western higher education models had already demonstrated their strength, China's communication with the West was intentionally hindered.

As China became enmeshed in the West-centred global historical process, reformers suggested that Western instructors be invited into Chinese institutions. Starting from the 1860s, Western style professional schools were founded to train technicians. China's first modern university was established in 1895 (Chen 1986). Reforms of traditional higher learning institutions were started thereafter. A number of modern institutions were established. By 1905, women, normal and vocational schools were founded. Students were sent abroad for training, mainly to Japan, the United States and Europe (Bastid 1988).

Immediately after the 1911 revolution, a modern educational system was ostensibly established in tune with prevailing world trends. The lack of central government from 1911 to 1927 provided Chinese higher education with the possibility of vigorous experimentation. The period saw the first real effort to establish a 'university' in the sense of the defining values of autonomy and academic freedom (Hayhoe 1996). Within the period, a tremendous range of new higher education institutions developed and flourished. Different strands of China's own evolving traditions linked up with various foreign influences. Chinese scholars who returned from Western countries and Japan played a key role in the development of higher education. Educational thought gradually matured, with eclectic foreign influences, particularly from America and Europe. The Chinese university of the Republican era (1912–1949) developed into a mature institution, which achieved a balance between its Chinese identity and its ability to link up to a world community of universities.

The Chinese Communist Party (CCP) came into power and founded the People's Republic of China (PRC) in October 1949. Western policies to isolate the PRC led to the leaning to the Soviet Union. Mao Ze-dong even announced in the summer of 1949 that the CCP must 'lean to one side'. Russians replaced departing Americans and Europeans. From 1952, the Chinese higher education system simulated Soviet administration, teaching methods, textbooks, and even classroom design. The experience of other countries, especially those of the West, was rejected.

Based on Russian experience and advice, China's First Five-Year Plan (1953–1957) focused on the development of heavy industry. Plans to reform institutions of higher education so as to emphasize technical education were finalised in 1951. To ensure that the restructured system performed the function intended, it was reinforced within unified sets of plans for student enrolment, job assignment, and curriculum content.

Since 1956, China experienced a series of political turmoils including the Great Leap Forward (1958–1966) and the Cultural Revolution (1966–1976). Higher education was devastated along with the fortunes of a generation of teachers and students. When Deng Xiao-ping and the 'pragmatist' faction reversed Maoist policies in late 1976 and set China on a more rational, economic-oriented path to modernisation, one of the first tasks undertaken was restoration of the educational system (Reed 1988). The post-Maoist changes in educational policy saw the re-emergence of the old 'regular' system with its residues of foreign models (Hayhoe 1984).

Chinese higher education is provided by institutions of various types including general universities (natural and social sciences and humanities), technical universities, specialised institutions (medicine, agriculture, foreign languages, etc.) and teacher-training colleges. The Chinese system has long been highly centralised, with education provided by the central and local governments respectively under their direct administration. The reform and development in recent decades has resulted in significant achievements. A higher education system with various forms, which encompasses basically all branches of learning, combines both degree and non-degree education and integrates diploma, undergraduate and graduate education, has taken shape. By 2001, China had 1,911 regular higher education institutions, with an intake of 393.3 thousand postgraduate students and 11,750.5 thousand undergraduate and diploma students.

The administration of higher education institutions follows vertical and horizontal patterns of general public administration in China (Cheng 1998). There are institutions all over the country that are administered, in the vertical system, by ministries of the central government. Another system is the horizontal system where institutions within a locality are administered by the

local authorities, mainly the provincial government. The differentiation is a major factor of influence on the extent of internationalisation.

SCUT belongs to the vertical system. It was a direct result of the 1952 reorganisation of higher education, which itself was totally imported from the Soviet Union (Hayhoe 1989). During the past 47 years, especially since China's adoption of the Open Door Policy,[1] SCUT has made significant achievements, and developed itself into an institution with many distinctive disciplines that not only maintain traditional characteristics but also serve the development of local society. It is now one of the largest institutions of higher education in China, and among those selected as members of the 211 Program.[2]

By 1997, among its 4,300 faculty were 1 academician of the Chinese Academy of Engineering, 84 Doctoral, and 542 Masters student advisors,[3] and 1,070 full/associate professors. The University had by then established a complete system to educate students at various levels with 10 colleges, 29 departments, 61 Masters and 20 doctoral programs, and 3 post-doctoral centers.[4] It had 9,000 undergraduates, and 1,500 full time postgraduate students. Within the University, there were 2 national key laboratories, and 48 national and provincial research institutes, all research projects of which aimed at national/local economic construction.

Although universities in the vertical system occupied only 5 percent of Chinese higher learning institutions in 2001, their officially designated status makes them the most influential within the system. Another major reason for selecting SCUT is the fact that technology universities form the biggest group among various types of Chinese higher institutions. In 2000, for example, there were 239 universities of technology among 599 four-year higher institutions, while general universities only numbered 83. A detailed discussion of SCUT's practice sheds light on the general current state of internationalisation in the mainstream of China's higher education.

Early internationalisation and the context

The early adoption of SCUT's international experience must be seen within the social, cultural and political context. The adoption of the Soviet experience in the early days of the PRC enabled China to establish a higher education system that met the urgent needs of national construction within a short period of time (Yang 2000). The adoption *per se* gave no cause for much criticism. It was the resistance to other beneficial experiences of Western countries that led to malformed internationalisation.

Teaching administration, for example, was all imported from the Soviet Union during the initial period of SCUT. The basic structure of academic

programs was speciality. Each was a basic teaching unit, and based its teaching plan on the national unitary syllabus. All academic programs were designed to train students to take up specific jobs. SCUT staff used national textbooks, and often prepared for classes collectively (Liu 1994). The dean's office supervised departments and the teaching of campus-wide compulsory courses undertaken by the departments. Departments looked after their teaching groups. Departmental teaching plans needed to be approved by the dean's office before implementation.

As required by the national syllabus, textbooks were significantly revised, and modelled on the Soviet experience. By 1953, SCUT offered 95 courses, of which 45 used Soviet textbooks entirely, while a further 19 adopted most of the contents from Soviet textbooks. By June 1954, 79 percent of all the courses offered at SCUT relied totally on, or at least adopted part of the contents from, the Soviet textbooks (Liu 1994).

The Soviet model of collective teaching founded upon teaching by demonstration was introduced and popularised. The teaching contents were normally those for the next week. The instructor lectured to all members of her/his teaching group, and then all participators discussed the contents, methods, gestures, rate of progress of the lecture in order to improve everyone's teaching in the next week. Also based on the principle of collective teaching, teachers, especially those of the same teaching group, were often required to attend each other's lectures in order to mutually benefit from the others' experiences.

Another stark example is SCUT's adoption of the Soviet six successive classes system. Starting from 1953, SCUT adopted a form of pedagogical organisation directly imported from the Soviet system, of having 6 classes in succession from 6:30 am to 12:30 pm. Students engaged in self-teaching, read newspapers, organised political study, and took part in some extra-class activities in the afternoon. Each morning, after the third class, a student representing her/his class went to a canteen to collect steamed buns as their lunch. Each class had its own bag to hold the steamed buns. The practice was only carried out in a small part of the Soviet Union, especially in the North where there was only limited daily sunshine. Clearly, it did not suit the Chinese situation, particularly in the South. While it was abolished on 25 January 1954, it showed the extent to which SCUT had simulated the Soviet experience.

SCUT's early international communication was confined to academic invitations from the eastern bloc, predominantly Russia, and hosting political, cultural and educational visitors and delegations from these countries. From 1953 to 1957, 7 foreign scholars visited SCUT to give academic lectures and exchanged teaching experience: 6 were from Russia, and 1 from East Germany (Liu 1994). SCUT also established institutional relations with 2 polytechnics in the Soviet Union in the early 1950s. During this period, inter-

national communication was very limited. Only 1 SCUT lecturer was sent to Russia for training in 1956. In contrast, it achieved much more in overseas student education. The University once recruited as much as 10 percent of its students from Hong Kong and Macau (Guangzhou Education Commission 1992). From 1962 to 1965, 20 students from Mongolia and some 100 students from Vietnam studied at SCUT (Liu 1994).

From the 1960s to the end of 1970s, China's higher education largely brought down the curtain on international exchange and collaboration with the rest of the world. Like all other Chinese universities between 1958 and 1976, SCUT was isolated from international influence, and subordinate to the bitter fractional political struggle for power between contending social interests in China. The lean to Soviet experience and the limited international communication were resulted from the fact that the new Chinese government was supported by the socialist bloc while the Western bloc opted to isolated China. This was the reason why SCUT became bogged down in a quagmire created by a largely hostile international environment, and this limited the ability of SCUT to manoeuvrer. While SCUT decided to simulate the Soviet model and confined its communication to the Eastern bloc only, it rejected any experience drawn from Western societies. This was exactly a mirror of the autarkic world order of the pre- and post-WWII years.

Openness and reform as dynamics

When China reopened to the world in the late 1970s, SCUT realised the necessity to reform its teaching, research and administrative systems. Beginning from the early 1980s, the University began to restructure its academic programs, which had come to be viewed as a mechanical copy of the Soviet model in the 1950s, and no longer suited to current developments in science and technology. Such deficiencies were also the case in the establishment and administration of laboratories, which were too numerous, with cumbersome administrative structures.

SCUT made the readjustment of academic programs, departments, and laboratories its central task in 1981 and 1982. The underlying logic was according to the practice of modern American universities which, as the most representative of the opposite to the Soviet model (Levy 1966), was favoured again by the Chinese (Hayhoe 1989). SCUT chose Massachusetts Institute of Technology (MIT) in particular as its exemplar because MIT is one of the most prestigious universities in the world. Moreover, it is a comprehensive university with its major focus on science and engineering, a model that was considered suitable for SCUT. One interviewee, a professor and a departmental head made the following comment:

> As for the development of our University, we are facing a choice. We should certainly learn from those in the major advanced countries, particularly those of the same sort. MIT is famous, and very influential in China. Its model is to embrace both arts and sciences. We are actually walking towards this model. The distinction between various disciplines is becoming increasingly blurred. In this context, the earlier you can form such a model to mix science with arts, the more it will promote development (Interview SCUT/8).

SCUT's remoulding of the earlier Soviet model was increasingly entailed by social and economic developments, notably in Guangdong (Vogel 1989). Its move towards societal needs goes well with the new modes of economic production which depends on knowledge and information technology. SCUT attaches importance to its pragmatic role in terms of the provision of qualified manpower and the production of knowledge. In June 1989, when Li Tieying, Director of the then State Education Commission, inspected SCUT, he said that SCUT had "become the cradle of high-tech in the Pearl River Delta,[5] and had built up a high reputation in the local society. This terrific experience should be carefully summed up and introduced to other institutions" (Liu 1989, p. 30).

Indeed, SCUT has made considerable progress in fitting in with the needs of society within the past two decades or so since China opened its door to the world, and launched its all-round social reforms. While the Open Door policy has created conditions that every institution of higher education can take advantages of, SCUT has been particularly successful in this regard because of the combined effect of its geographical location (situated in the region that was first to be opened to outside influence), and its institutional characteristic (as a university of technology). SCUT reached its current peak of achievement by seizing the contemporary historical opportunities.

Applied research has long been a high priority of SCUT. By readjusting its research infrastructure to suit the demands of social and economic development, SCUT has developed itself significantly. Its first step has been to muster research forces to serve economic and social developments, rearrange research projects, and identify applied and development research as its highest priority. In 1980, 230 (88.4 percent) of the 260 projects were applied research. The percentages were 81 percent (278) in 1981, and 72.8 percent (199) in 1982 (Liu 1994).

Importance is attached to the design and innovation of large-scale projects in regional factories and enterprises, helping them introduce, assimilate and extend large, complete sets of foreign equipment and technologies. This has proved to be a good way to absorb foreign advanced technology to serve Chinese society on the one hand, and to improve SCUT's academic strength on the other (Liu 1989).

The applied research and development satisfied the needs of the fast-growing Guangdong regional economy (Klich 1999). In order to promote further combination between research and production, SCUT established a new scientific and technological research administration system in 1980 on a contract basis. In the first year of the system, SCUT obtained 1.2 million *Yuan* research funds. Henceforth, this became an important channel for educational funds.

Choosing topics that have relevance to social and economic developments does not necessarily mean degrading research quality. On the contrary, as science and technology has penetrated every corner of the world (Teichler 1996), research projects on local development can be highly theoretical, and entail the most advanced technology. In addition, as the world is increasingly globalising, solutions to local problems require sophisticated knowledge of the external world. Thus, SCUT research projects conducted under the contract system are often highly advanced, and particularly beneficial to its academic development. SCUT continues to produce research outcomes that are seen as world class. In 1989, 76 research findings were reported to be at the internationally advanced level (Liu 1989). Among its research articles published internationally in 1996, 38 were indexed by the *Science Citation Index*, 40 in the *Index to Scientific and Technological Proceedings*, and 39 in the *Engineering Index*. Its overall rank of 13th among China's higher education institutions, was a big step ahead of its 32nd ranking in 1994 (South China University of Technology 1997).

A considerable proportion of the projects undertaken by SCUT are classified as key programs by national and provincial governments. Both resources for, and the number of research projects, have increased significantly in recent years. In 1996 alone, projects from national, provincial and local governments, as well as domestic and foreign enterprises, totalled 1,070.

Research has strengthened SCUT's collaboration with other partners, including enterprises and other research institutes from overseas. The collaboration again further enables SCUT to win key, high-tech research projects. It also plays a key role in the establishment of new research areas. The collaboration assists SCUT and its various partners to take advantage of all the conditions and resources to conduct research and to train students.

Research has proven to be a substantial factor in strengthening educational quality. SCUT graduates are becoming increasingly sought after. In the Pearl River Delta region, 70 percent of core engineers in various enterprises and 40 percent of those at senior professional levels are SCUT graduates. In Shengzhen, 70 percent of all factory directors, managers and chief engineers in the electronic and construction factories graduate from SCUT (South China University of Technology 1992). SCUT's two/three-year adult part-time training programs are also warmly received because they provide the

local society, particularly the township enterprises, with timely help. They are acclaimed as the "sending of charcoal in snowy weather" (Liu 1989, p. 31).

SCUT benefits financially from its direct relevance to the social and economic developments. In 1985, the income from these sources was equivalent to 80 percent of all the operating expenses allocated from the government (Liu 1989). Since then this income has continued to increase, particularly in the 1990s, to over 10 million *Yuan* annually while the University continues to strengthen its research capacity. Total research funds have continued to increase significantly, reaching 66 million *Yuan* in 1996, of which 28.37 million came from international collaborative research projects (South China University of Technology 1997).

Overall, the process of increasing integration with society has seen SCUT make considerable progress. Not surprisingly, the improved financial conditions have been an increasingly crucial factor in SCUT's success. On the other hand, this has led to new problems; among them being increased internal differentiation within various faculties, even departments, which has led to very different contexts of internationalisation. The correlation demonstrated by Table 1 is not accidental.

In technoscience and fields closely involved with markets, particularly international markets, research products expand beyond national boundaries and intellectual property rights are involved on a global basis. Researchers thus have to ensure their own research product is internationally recognised. Private sector enterprises are closely related to this research market, both through their own research activities and through their search for newly patented technologies. This provides a strong incentive to SCUT researchers to rush the dissemination of their research products into a well-recognised international market.

Therefore, in science, engineering and technology, there are significant opportunities for increasing present levels of collaboration between overseas universities and SCUT. The extent of internationalisation is much less in the social sciences, however, due to the more varied ideologies, paradigms and discourses inherent in these fields, and higher dependency on language to convey their meanings (Yang 2003a). Opportunities to cooperate with international partners or win grants from external resources are much more limited (Zweig and Chen 1998).

Within SCUT, a criterion for performance assessment with the central focus on economic benefits has been implemented. The following comment of an interviewee from chemical engineering serves as an example:

> Nowadays in China, we can hardly support ourselves if we fail to be granted research funds from the governments. If we can't cooperate well with industry, we won't live a good life. I think money means intelli-

Table 1. Research funds and publications in selected faculties/departments, 1996

Faculties or departments and their academic staff numbers	Research fund (*Yuan*)	International journals	National journals	Provincial journals	International conferences	National conferences
Electronics and industrial engineering*	10,340,000	38	224	9	41	112
Chemical engineering (187)	7,430,000	9	125	15	18	44
Industrial facilities and control engineering (58)	5,100,000	4	50	4	3	18
Mechanical and electrical engineering (134)	3,700,000	12	92	5	6	30
Business administration (50)	300,000	1	16	13	6	4
Social sciences (50)	60,000	1	12	38		12
Foreign languages*	9,000		7	2	1	4

Source: South China University of Technology 1997, pp. 103–106.
*Numbers of academic staff were not available.

> gence these days. The first priority must be money. It can also be utilised as the sole criterion for university development (Interview SCUT/1).

This is a dangerous, if not mistaken, conception, and stands in direct conflict with the nature of a university, whose task is "the methodical discovery and the teaching of truths about serious and important things" (Shils 1997, p. 3). It also clearly undermines the university as an integrated whole, and causes tensions among its staff. For example, when SCUT selected young faculty to be trained as future academic leaders, faculties of materials science and mechanical engineering contributed some 20 members each, while the faculties of social sciences and foreign languages each contributed only one (South China University of Technology 1997).

One interviewee, a professor of English, also stressed the importance of finance, but from a different perspective:

> Our situation is very different from the engineering departments. The most fundamental difficulty in the process of internationalisation is our financial situation. Each year I receive at least three or four conference invitations. I can't go because I can't afford the airfare. I went to the University of Hong Kong in September 1997, but that was because they paid all the fees for me. Our Foreign Languages Department has been granted a research project by the National Social Science Foundation. As you know, it is very competitive, less than 10 nationally, but it is about 20,000 *Yuan* only. As a foreign language department, we should have some foreign newspapers. This year we can only have the Hong Kong-based *South China Morning Post* which costs us 4,000 *Yuan*. Last year I received an invitation from the City University of New York. They offered me a single airfare. But I still couldn't go because I had difficulty to find support for the return leg of the journey (Interview SCUT/5).

Even if some areas have the potential for application, and therefore some possible economic benefits, the increasing internal differentiation within SCUT points out how dangerous it is to utilise the financial situation as the one and only criterion. China is still a poor country, with a large university system and a huge population. While higher education systems around the world face difficult situations (Altbach and Peterson 1999), the Chinese system is under even greater pressure to respond to expanding national needs with shrinking national resources. Within this setting, it is extremely important to go beyond the exclusively dollar-dominated mentality to integrate university development with industry and society.

Current international activities

International collaboration and exchange at SCUT did not grow substantially until the mid-1980s. Details of staff and student internationalisation programmes are listed below.

Sending staff abroad

SCUT started sending its academic faculty abroad again for academic training in the late 1970s. By 1992, 456 academic staff had been sent to study in countries including the United States, the United Kingdom, Japan, France, Canada, Germany, the Netherlands, Australia, and Hong Kong.[6] During this same period, 536 staff went overseas for academic visits, international conferences, and collaborative research. In 1996 alone, SCUT sponsored 283 academic and administrative staff to go overseas for visits, conferences, collaborative research projects and further study (South China University of Technology 1997), 20 percent more than in 1995. Towards the late 1990s, it had been an increasingly common experience for SCUT academics to have some overseas training experience.

Periods of overseas training by academic staff have proven to be an efficient way to learn the latest developments in science and technology (Cao 1998). Such individuals normally do not enroll in degree programs. This was why only 13 of the 194 who returned to SCUT by 1992 brought foreign doctorates with them (Liu 1994). Most of the interviewees had overseas experience and highly valued it. They also tend to be more outward-looking. One interviewee, a professor of civil engineering said he had successfully used his research in the United States to design an offshore oil exploration platform. His work was awarded a prestigious prize by the then State Education Commission. Another interviewee from chemical engineering transferred his research findings in the United States to a Chinese manufacturer.

Aiming at Western development levels in science and technology, it is understandable that an overwhelming majority of SCUT staff go to the most advanced countries. In 1996, for example, among 38 academic staff, 11 went to Japan, 10 to the United States, 5 to Germany (among them 3 visited Switzerland), 2 to Belgium, 2 to the United Kingdom, 2 to Italy, while countries like Australia, Canada, France, Indonesia, New Zealand and Singapore attracted 1 each (South China University of Technology 1997).

Hosting overseas scholars

As the Southern gate of China adjoining Hong Kong and Macau, overseas scholars often visit China via Guangzhou. SCUT used this advantage to

Table 2. Consultant, guest and honorary professors appointed by SCUT, 1996

Place of origin	Name	Affiliation	Appointed post
Hong Kong	Wen Jianfeng	City University of Hong Kong	Consultant Professor
Hong Kong	Lin Xinqiang	Hong Kong Polytechnic University	Consultant Professor
Hong Kong	Rong Qining	City University of Hong Kong	Consultant Professor
Hong Kong	Mei Guanxiang	City University of Hong Kong	Consultant Professor
Holland	Frank Roelofde Boer	University of Amsterdam	Honorary Professor
Holland	Zhao Zhigang	University of Amsterdam	Associate Professor (Part-time)
Japan	Hiroshi Itagaki	National Yokohama University	Consultant Professor
Japan	Sho Ji Ikeda	National Yokohama University	Consultant Professor
Hong Kong	Peng Jiwen	Hong Kong Government	Consultant Professor
Taiwan	Lin Qinyi	National Cheng Kung University	Consultant Professor
Japan	Kawai Sueo	Japanese Institute of Mechanical Engineering	Consultant Professor
Korea	Suck-Joo Na	Korean Higher Education Research Institute	Consultant Professor

Source: South China University of Technology 1997, p. 125.

invite significant numbers of foreign academics. Such visits help to build up a bridge between SCUT and the outside world, bring new technologies and the most up-to-date information, stimulate the scholarly environment within the University, and exchange experiences in teaching and research (Liu 1994).

In order to exchange scientific and technological information with overseas institutions, and to obtain access to the latest development of knowledge, SCUT invites some established scholars from overseas as Honorary, Consultant and Guest Professors. It further increased its hosting of overseas guests and visitors in the late 1990s (South China University of Technology 1997). As Table 2 shows, a considerable proportion of them are overseas Chinese who have achieved successful academic careers all over the world. Due to cultural and geographical proximity, it is not surprising to note that Hong Kong scholars stand out in this respect (Yang 2003b).

These invited professors have an evident effect on the promotion of SCUT's communication with international academic communities. One interviewee from the University's international office provided convincing examples:

> We have genuine desire to cooperate with our overseas honorary, consultant and guest professors. They know this. So they are very accountable to our University. They have contributed to establish friendship between both sides. They bring new information to us, and try hard to find additional financial resources for our teachers to study or conduct research overseas. They have sponsored more than 12 teachers and postgraduate students to study and conduct collaborative research overseas. They have shown great concern for our development. One good example is Professor Zhang You-qi, former Pro-Vice-Chancellor of the University of Hong Kong. He was our engineering graduate in 1958. He visits us and lectures here regularly. He has trained 5 Ph.D.'s for our University (Interview SCUT/12).

International conferences

Since the early 1980s, SCUT has expressed keen interest in hosting international conferences, after realising their important role in boosting communication with international communities. It has therefore convened or collaboratively (with Hong Kong universities particularly) hosted a series of international conferences. Its interest has continued to expand to topics other than engineering, especially since the late 1980s when SCUT deliberately developed itself into a comprehensive university.

SCUT became even more active in hosting international conferences in the 1990s, particularly because it has gained a better international reputation in various fields and has become financially stronger. Another feature of this period was its increasing collaboration with foreign institutions to host international conferences. Since then, both the absolute number and the themes of international conferences hosted by SCUT have increased significantly.

Meanwhile, SCUT has continued to sponsor its staff, sometimes graduate students, to travel abroad for international conferences. In 1996, 65 staff and students attended 43 international conferences held overseas. The number of participants increased 15 percent over that in 1995. They submitted 68 papers, of which a majority were considered by SCUT to be internationally leading research achievements in their corresponding fields (South China University of Technology 1997).

Other external/international relations

During the 1980s, SCUT established institutional links with universities in various countries. Some departments established formal relations with their overseas counterparts to reach agreements on teaching and research collaboration, faculty and student exchange, and joint degree programs. In the 1990s,

SCUT continued to increase its institutional relations with international counterparts and established formal agreements for mutual educational exchange and collaboration. Its long-term institutional agreement with the University of Amsterdam to conduct collaborative research was cited by a number of interviewees as a successful example.

SCUT has also established working relations with various overseas agencies, companies and research institutes. One interviewee mentioned that her department had joint research programs with a Portuguese institute of welding quality whose first investment was US$1.8 million. These collaborative projects have greatly assisted SCUT to improve its technology, and have quickened the application of newly developed technologies. Another interviewee from research office indicated that IBM had also expressed its strong interest in SCUT, with its donation of US$1.8 million in 1996 to SCUT's computer department to establish a centre to teach and research computer-assisted software engineering, and to provide south China computer consumers and staff of IBM companies in China with a base for training.

As Chinese Universities are increasingly required to raise educational funds by themselves (World Bank 1997), SCUT is strengthening its international links as a strategy to complement its finances, continues to attract donations, and seeks further collaborations with foreign companies and individuals. This has proven to be such an effective way that it has changed the structure of SCUT's financial resources. In the 1995-1996 academic year, for example, SCUT received 6 donations and investments from overseas which valued US$3.852 million, 1 million *Yuan* and 12.5 thousand Euros (South China University of Technology 1997). It also facilitates teaching and research as Table 3 shows below.

Communications with Hong Kong, Macau and Taiwan

As already demonstrated by Table 2 above, Hong Kong, together with Macau and Taiwan, plays an important role in SCUT's international communications. Indeed academic exchange with these regions was deliberately strengthened in the 1980s. The return of Hong Kong and Macau to China quickened the tempo of the exchange in the 1990s. SCUT realised the potential benefits, and established a specific office to promote such linkages. In 1996 alone, 466 academic staff visited at least one of the three regions, which contrast markedly with the numbers of visits to other countries (38).

Hong Kong universities are particularly important in this regard. An international community by nature, Hong Kong has always been outward-looking (Bray 1999), and essential to the success of China's Open Door policy (Shinn 1995). By playing the role as the 'beachhead' of China's higher education

Table 3. Scholarships and fellowships set up by donations from overseas companies and individuals, 1995–1996

Donator	Scholarship	Value	Receivers	Time limits
Yang Naiying (Canadian Chinese)	Yang Naiying Scholarship	10,000 Canadian Dollars per year	Architectural Engineering Department	1986–1996
Taoshi Chemicals Limited, China	Taoshi Fellowship	US$8,000	Department of Light Industry Engineering	1991–1998
Hong Kong Yongming Decorating Materials	Yongming Fellowship	HK$48,000	Architectural Engineering Department	1993–1998
IBM	IBM Computer Science and Technology Scholarship	US$15,000	College of Electronics and Information	1993–1996
AT&T	AT&T Scientific Development Scholarship	100,000 *Yuan*	College of Electronics and Information	1993–1996
Ho Jianli (SCUT graduate living in Hong Kong)	Ho Jianli Alumnus Teaching Promotion Scholarship	HK$60,000	College of Light Industry and Food Engineering	1994–1996
Liu Jiahan (SCUT graduate living in Hong Kong)	Liu Jiahan Alumnus Teaching Promotion Scholarship	HK$120,000	College of Light Industry and Food Engineering	1994–1997

Table 3. Continued

Donator	Scholarship	Value	Receivers	Time limits
Hong Kong Jiahua	Lu Zhihe Teaching Promotion Scholarship	HK$700,000	College of Material Science and Engineering	1995–
Black Glawson, the United States	Black Glawson Fellowship	US$4,000	College of Paper-making and Environmental Engineering	1995–
Simens, Germany	Simens Postgraduate Scholarship	180,000 *Yuan*	Departments of Business Administration, Electrical Engineering, Colleges of Electric Power, Electronics and Information	1995–1997
Jingmen, Hong Kong	Jingmen Fellowship	22,500 *Yuan*	Architecture Department, Colleges of Architectural Engineering, Transportation	1996–2000

Source: South China University of Technology 1997, p. 127.

internationalisation (Teather et al. 1997), Hong Kong universities provide crucial benefits to their counterparts in the Chinese mainland, as well as maintaining their continued vigour (Postiglione 1998).

A number of interviewees valued highly the contribution made by the exchange activities with higher education institutions in these regions. They especially stressed the importance of Hong Kong universities. This echoes the findings of other studies (see, for example, Yang 2002b). As the following Table 4 indicates, SCUT has benefited much from its communication with universities in Hong Kong, Macau and Taiwan.

Overseas student education

After the Cultural Revolution, SCUT started to recruit overseas students again. Its intake has continued to grow. Students' countries of origin vary, including the United States, Russia, Japan, Korea, France, Laos, Indonesia, Pakistan, Australia, Sweden, Finland and Nigeria. The University offers various programmes for overseas students from doctoral studies to short-term training. Overseas students are distributed across many areas, including engineering, science, business administration and Chinese language and culture.

It is not surprising that within a context of financial stringency SCUT policies are attaching more importance to overseas student recruitment. When interviewed, the director of foreign affairs office who was also in charge of overseas students even referred to the number of overseas students as one key benchmark for SCUT internationalisation. Yet, my investigation found that most respondents ignored overseas student education. Other then two interviewees whose responsibilities included overseas student study and administration, no one listed this aspect.

Discussion: Internationalised or globalised?

The above case study shows that SCUT's practice echoes what is happening internationally (Clark 1998). During the past two decades, a number of changes affected the way universities work and the work that academics do (Slaughter and Leslie 1997). Universities are being urged to behave in more competitive and enterprising ways. Each university develops its unique response to global practices (Currie and Newson 1998), which are often forced upon them by globalising politicians and bureaucrats. Within these processes, forces of internationalisation and globalisation pull in different directions. It is increasingly difficult for universities to reconcile the competing agendas.

Table 4. Scholars from Hong Kong, Macau and Taiwan who gave academic lectures at SCUT, 1996

Date	Lecturers	Hosts
2–3 January	Dr. Zheng Liming, City University of Hong Kong	College of Electronics and Information
8–10 August	Dr. Chen Heyang, University of Hong Kong	College of Electronics and Information
17–18 January	Professor Zhang Yuanyong, Hong Kong University of Science and Technology	College of Transportation and Department of Architecture
30–31 January	Professor Chen Chujian, University of Hong Kong	College of Electronics and Information
4–5 April	Dr. Li Jinhan, Dean, Chinese University of Hong Kong	College of Business Administration
16–17 April	General Manager Xu Changyu, Meishang Company, Taiwan	Department of Industrial Equipment and Control Engineering
23–24 April	Associate Professor Lin Xinqiang, Hong Kong Polytechnic University	College of Transportation
29–30 April	Senior Lecturer Wen Jianfeng, City University of Hong Kong	College of Electronics and Information
17–18 May	Professor Ye Chunsheng, Futebuoer Container Limited Company, Hong Kong	College of Business Administration
17–18 May	Dr. Li Hongji, Shaxuan Stock Exchange, Hong Kong	College of Business Administration
27–30 May	Drs Dines Bjomer, Christopher George, Kees Middelburg, and Tomasz Janowsk, Macau Institute of Software, University of United Nations	Departments of Computer Science, Mathematics, and Automation
11 June	Professor Chen Feng, University of Hong Kong	College of Light Industry and Food

Source: South China University of Technology 1997, p. 124.

SCUT's experience further confirms that the particular impact of globalisation on universities starts with the transformation of a nation state into a competitive player in the new global marketplace. Education shifts to become less a part of social policy and more a key aspect of economic policy (Sassen 2000). The commitment of governments to fund universities is declining. This has affected the ways in which institutions are funded and managed, the kind of research that is undertaken, the student profile, teaching loads and collegial relations. As a result, universities are experiencing declining budgets while the state wants universities to expand their enrolments to reduce unemployment.

SCUT's practice demonstrates that globalisation has also changed how Chinese universities operate, and has begun to create a culture of competition, corporate managerialism, efficiency and accountability in China's higher education that could undermine aspects of internationalisation. The interviews, policies and activities all indicate an inkling of the danger that the inherent responsibility of a university to foster students' international understanding could be lost in the hurry-scurry of international programs that have been generated as a result of globalisation.

Nevertheless, all hope is not lost. Unlike most existing studies on this topic, the present study has concentrated more on the positive consequences of global practices. It shows the character of globalisation will be accomplished by the people in situations, and the direction that globalised institutions are taking and will take in the future is, as Robertson (1992, p. 62) has suggested, "up for Grabs". Local transformation is a part of globalisation (Giddens 1990), and the true meaning of globalisation is a reflexive process involving both global imputs and local acts of reproduction, in which the universal becomes conjoined with the particular (Spybey 1996).

Meanwhile, SCUT's practice also indicates possible negative effects caused by the introduction of business practices into universities and the potential threat to traditional university values. This is again in line with the situation in other parts of the world, where many academics believe that intellectual traditions are being forcibly displaced by market directives. The new practices pose threat to intellectual virtues such as honesty, intellectual courtesy, indifference to the mere fashion in ideas, and a dedication to the regulative ideal of truth (Coady 2000).

Concluding thoughts

SCUT is located in Guangzhou, whose early lead in opening itself to the outside world, faster implementation of free market economic practices, and fast pace of regional development have all provided SCUT with beneficial

conditions for development (Yang and Welch 2001). Such open and reformist policies have been paralleled by SCUT's attention to social and economic needs. At the same time, by gearing its teaching and research to the society, SCUT has significantly developed itself.

Like their international counterparts, Chinese universities are increasingly confronted with a new context of market mechanisms, globalisation and internationalisation. With their different responses to external challenges, some find themselves more buffeted by these dramatic changes. I left SCUT with an impression that, although not without problems and even with some potential crises, it has grown considerably during the reform process. As it strengthens its teaching, research and development, its staff are becoming confident in international communication. This was expressed by one interviewee from the humanities: "I think any theory and cultural product should walk beyond national borders in order to be known and judged by the world" (Interview SCUT/6).

More confidence was expressed by faculty members from engineering. Nearly all interviewees emphasised that there was no fundamental conflict between international activities, and service to the local society. The crux, however, is how to manage them in practice. One interviewee pointed out:

> In contemporary China, engineering will have no space for existence if it fails to integrate its internationalisation targets with service to the local society. I always fix my own position according to the place where three dimensions – the international, the domestic and application – meet. I believe there are some links among them. I don't think they contradict each other. The point is to find the right link (Interview SCUT/10).

Compared to its own past and to its peers, SCUT's experience can be seen as relatively successful. Nonetheless, this depends on one's perspective. As described by the deputy director of academic affairs office, despite the fact that SCUT has made much progress in recent years, its internationalisation is far from ideal by international standards.

Among its own faculty, assessment also varies. The comments made by the director of research affairs office may tally with reality:

> There are various aspects of university internationalisation including teaching, research, management, among the others. The achievements that our University has reached are far from perfect. But we are in an active stage, and progressing towards the next step in a more mature, orderly and systematic way. The indicators for ongoing achievement are: first, our institutional leaders have adopted an open-minded mentality to guide institutional policy and management. Secondly, teaching and research activities including academic programmes, lengths of school-

> ing, textbooks, curricula, teaching methods, evaluation and student admission, should conform to international practice. Reforms of teachers recruitment, (and) student job training must also maintain an international orientation, in order to move closely to approach world conventions. Thirdly, our University is strengthening its information communication with the outside world. A priority is the establishment of the Internet, which will become further popularised among both teachers and student. Lastly, international research collaboration must be far more comprehensive. The overall level of the collaborative research is not yet high enough (Interview SCUT/3).

In short, the extent to which SCUT is internationalised roughly corresponds to its current status among the national key universities under the direct administration of the Ministry of Education.[7] What makes it exceptional is the rate of progress at which the University continues to develop in the context of a market economy, and its increasing social responsiveness.

Notes

1. After being closed to international intercourse for decades, China adopted its policy of opening to the outside world at the Third Plenary Session of the Eleventh Central Committee of the Communist Party of China held in December 1978.
2. The 211 Program is a major initiative, seeking to create a élite body of 100 Chinese universities, on which the governments will focus investment in order to catch up with or approach the most advanced level in the world during the 21st century (Christiansen 1996).
3. In China, doctoral student advisor is a prestigious title given by the central government to nationally leading scholars, based on their academic achievement. Therefore, only a relatively small number of full professors (in some special cases, associate professors) can become doctoral student advisors (Gu 1991, p. 116).
4. Post-doctoral centres began to emerge within Chinese campuses by discipline or research area in 1985 to make best use of talented Doctorate holders. Requirements for establishment of post-doctoral centres are accredited doctoral programs, with well-recognised nationally leading research level, plus even stronger research resources and personnel than that required for doctoral programs. For an account of the work of the post-doctoral centres, see also Hayhoe (1989, p. 55) and Gu (1991, pp. 71–72). A post-doctoral centre is, therefore, eyed as a sign of the highest academic level in the concerned field in China, whose establishment needs to be approved by the Ministry of Education.
5. The Pearl River delta was formed where three rivers enter the South China Sea. It includes the delta and several nearby islands with an area of 44,300 square kilometres and a population in 1990 of almost 16 million. Within its scope, there are many cities such as Guangzhou, Shengzhen, and Zhuhai. Neighbouring Hong Kong and Macau, residents of all these cities share the same dialect (Cantonese). The Delta is the first area in Chinese history to carry out market economy policies. Economy in the region has developed enormously fast in the past 2 decades (Yang 1995).

6. I use the term "country" throughout this article for ease of expression and comparison. I recognise that, in constitutional terms, Hong Kong, Macau and Taiwan are not normally referred to in this way.
7. Since the early 1950s, the Chinese government has selected some universities as "key-points" for growth, or as institutions enjoying special (political and/or financial) privileges (Yang 1998).

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