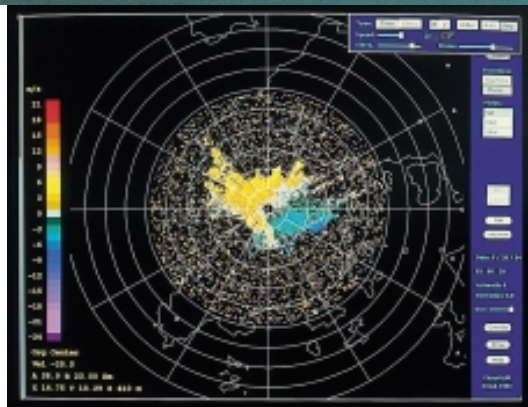


**An ivory tower, remote, esoteric, in a world of its own. Such is the traditional vision of a university, especially a research institution full of scientists and technologists.**

**HKUST is carved out of different material. Charged from its drawing-board days with a mission to promote the economic and social development of Hong Kong, the University has fashioned a fresh relationship between town and gown.**



## Outward Bound

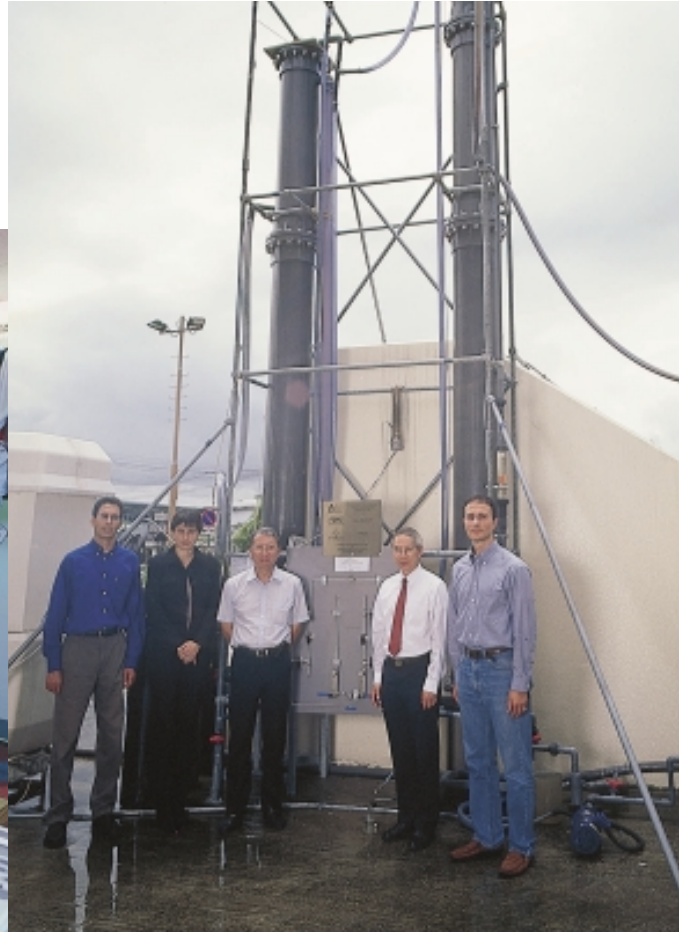
While the packing boxes were still being put away and laboratories were being set up, plans were underway at HKUST to utilize the expertise and research capabilities of its world-renowned faculty.

Without a strong tradition of science and technology research in Hong Kong, the University realized it would need to go out actively into the community, to show by example what could be done locally with the talented human resources now residing in Clear Water Bay.

As early as 1993, just two years after the University's opening, Professor Jay-Chung CHEN's no-nonsense leadership of the Research Center enabled HKUST to win the largest government contract awarded to a tertiary institution in Hong Kong, to provide the new airport at Chek Lap Kok with the technology to monitor wind patterns. Working together with US scientists, the result was the Operational Windshear Warning System, a pioneering development for Hong Kong that could be exported round the world.

The same year, Professor Vincent SHEN and his colleagues launched Hong Kong SuperNet to offer low-cost Internet access to government agencies, businesses, and individuals.

Among the University's many novel discoveries, one finds raw sewage turned



into biodegradable plastics, and bamboo into extra-strong fiberboard. Gradually, with the help of senior faculty members who established contacts with local industries, Hong Kong has begun to see how much can be achieved if it works with its universities.

Biotechnology research at HKUST has been applied to new skincare products; an electronic library designed for the Open University of Hong Kong; an anti-oxidant derived from Chinese herbs to combat the effects of human aging and protect against heart and liver diseases; and 3D-garment design software produced.

Food manufacturer Lee Kum Kee Group Ltd has helped establish the University's Hong Kong Traditional Chinese Medicine Research Center and develop health products with HKUST researchers. Varitronix Ltd and University researchers have created new active matrix liquid crystal displays. Hang Seng Bank has contracted the University to devise a computer-based personal financial planning model.

Professional training programs have grown, including work for the Hong Kong Police and the Mass Transit Railway Corporation.



*Bringing high technologies and new knowledge to the community (left to right): Information systems that address the global procurement needs of the garment industry have been developed for Sterling Products Ltd; cost-effective wastewater treatment systems have been jointly established on Stonecutters Island with the French conglomerate Vivendi Universal; and a management training program has been tailor-made for the Mass Transit Railway Corporation.*



Prof Tony Eastham (far left) at the opening ceremony of the Entrepreneurship Center in February 2000.

## Joining Hands with Industry

The rapid growth in private-sector research contracts at HKUST since 1997 illustrates a change in perception about universities and their role within the community.

"In the past, when industries thought of universities, they thought of absent-minded professors and scientists with no conception of deliverables and results. If they needed to do research, they always went outside Hong Kong. Now they have started to rely more and more on local institutions, and I think it is a trend that will continue," says Professor Otto LIN, Vice-President for Research and Development.

The change does not mean there is room for less government funding, as there is a fundamental difference between the two sources of support. Industry expects relatively quick returns; government provides

funding for longer-term work and projects which explore rather than deliver goods.

"The more you work with industry," says Professor Lin, "the more you realize the importance of a good, strong foundation in basic research. You must try to achieve a proper balance."

## Down to Business

By 2000, over 100 University-industry cooperative projects were being conducted for local and multinational companies.

PhD student James She's SinoCDN Ltd has had a promising start with support from the Entrepreneurship Program.



Always seeking to move faster, onwards and upwards, in the late 1990s, the University felt it was time to push forward into an area traditionally left out of the picture by university technology transfer in Hong Kong. It decided to go for the full R&D cycle, from basic research to business development.

HKUST had already had a major success with Hong Kong SuperNet. Capitalized at around HK\$2 million, it had been originated, launched, marketed, and eventually sold to an international consortium for a HK\$35 million profit. From the proceeds of the sale, the University has been able to support

many R&D projects and set up a HK\$10 million venture capital fund.

Now the University would build on its experience and help its faculty and students start their own businesses, thereby accelerating Hong Kong's entry into the knowledge economy.

"High-tech start-up companies are the new engines of economic growth around the world," says Professor Tony EASTHAM, Associate Vice-President for Research and Development and President/CEO of the HKUST RandD Corporation. "We believe that encouraging and nurturing entrepreneurship is one way in which HKUST can assist economic development in Hong Kong and the region.

"We therefore introduced the Entrepreneurship Program in mid-1999 and we are now incubating more than 20 start-up companies. Some, like Perception Digital Ltd, SinoCDN Ltd, and Weniwen Technologies Ltd, are developing very nicely and are destined to become significant players in Hong Kong's emerging high-tech sector."

Under the program, faculty, staff, alumni, and students who want to start up a technology-led company can gain assistance in the form of office space, logistical support, and introductions to potential business partners. In return the University receives 3% of the issued share capital, plus a negotiated equity position for the transfer of intellectual property rights.

## SINGING A DIFFERENT TUNE

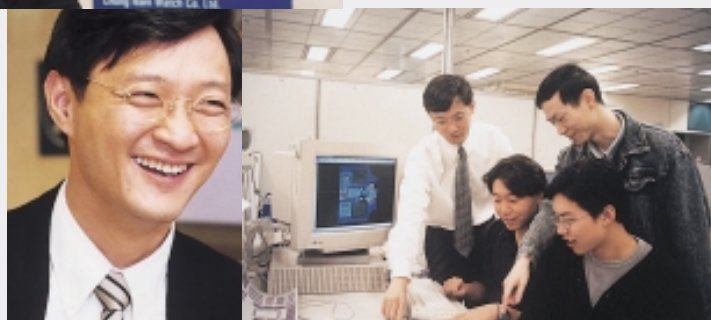
One of the first to benefit from the Entrepreneurship Program has been Associate Professor Jack LAU, whose fast-track progress since joining HKUST in 1991 has echoed the University's own. The University's first PhD graduate in electrical and electronic engineering, Dr Lau earned a US patent with his thesis. He chose to join the faculty at HKUST, and was selected in 2000 as one of Hong Kong's Ten Outstanding Young Persons, a prestigious award for young professionals in Hong Kong.



"In the blink of an eye, I have spent 10 years at HKUST. This is the place I call home," says Dr Lau.

Thanks to the Entrepreneurship Program, he is also now at home as CEO of Perception Digital Ltd, a company he set up with colleagues and former students. The first product to hit the market is a digital jukebox that archives up to 2,000 songs and can put an end to the misery of lost CDs. Perception Digital already has 40 staff and offices on the HKUST campus, in Central, and in Shenzhen.

"I never thought I would really seriously start a company," Dr Lau says. "While I like my technology to be applied, I had never thought of doing it myself. The University is a place where opportunities open up for you. It gives you options. I don't think I could have done many of the things I am doing now — or in the past or the future — without HKUST."



## The Hong Kong Bay Area

At HKUST, there has never been any time for narrow vision. When the founding faculty first came to Hong Kong, they brought with them a view unbounded by borders or traditional thinking; and Hong Kong's economic future has always been seen as firmly linked to the region surrounding it.

"I dislike the term 'Gateway to China'. A gateway for whom?" says founding President Professor Chia-Wei Woo. "To us, Hong Kong is a center of China." It is a center for the region extending back up the Pearl River estuary and taking in the triangle formed by the coastal municipalities of Shenzhen and Zhuhai.

As conceived by Professor Woo, the "Hong Kong Bay Area" will become an international magnet and major base for education, culture, finance, high technology, manufacturing, science, and tourism.

To realize such a regional vision, Hong Kong must be prepared to push forward with cross-border projects and cooperative ventures. "We've got to look beyond our 235 islands and a peninsula," said Professor Woo, "to rise higher and look further both in time and space."

HKUST initiatives are doing just that. In the Nansha district of Panyu, at the



President Woo and representatives from Peking University and the Shenzhen Municipal Government at a signing ceremony for the PKU-HKUST Shenzhen-Hong Kong Institution.

center of the Pearl River Delta, the University is establishing an information technology park, with plans for 100 high-tech companies to be based there within five years.



In collaboration with the Fok Ying Tung Foundation, which is providing land and funding, the University will plan, market, and manage the park. It will be a major facilitator for high-tech developments, and create quality jobs for talented young people — not just HKUST graduates, but everybody's graduates.

A truly ambitious, fast-track project is a collaborative venture with Peking University and the Shenzhen Municipal Government to establish an industrial, educational, and research base in Shenzhen's 1,100-hectare High-Tech Industrial Park, to help forge economic integration at a regional level. The PKU-HKUST Shenzhen-Hong Kong Institution will undertake education

programs, academic research, technology-based R&D, and incubation of start-up enterprises.

Another collaboration of the three parties is a postgraduate and research medical center in Shenzhen. HKUST's contributions will be in the areas of PhD and MD-PhD training, academic biomedical research, applied biotechnology R&D, and start-up enterprises.

## Managing the Economy

Who is going to manage such a thriving regional economy? HKUST has envisioned that. In the spring of 1991, 40 senior managers became the recipients of HKUST's first business education program. Since then, utilizing HKUST's business expertise to provide executive education has become a cornerstone of the University's outreach work, with programs for many different sectors, including customized courses for multinational and local companies, and an internationally ranked MBA program.

Professor Yuk-Shee CHAN, founding Dean of Business and Management, explains how executive and MBA education has served Hong Kong in the past decade: "These programs meet the business community's demand for staff development. They can provide the latest thinking in management and ideas, and are one direct way that we can



*The Kellogg-HKUST Executive MBA program offers senior executives world-class training with a China focus.*



*Team-building: an important aspect in management training.*

impact on business practices in Hong Kong."

Dr Steve DEKREY, Associate Dean and Director of the University's MBA, EMBA, and MSc Programs, adds: "Asian-based businesses have great need for world-class executive education. Until recently, senior executives were forced to travel to the West. HKUST is reversing this trend and is now preparing senior executives from Hong Kong and beyond for their Asian challenges."

The School has placed emphasis on China business and management, developing an area of excellence that sets it apart from other regional business schools, makes the most of its Hong

Kong home base, and ties in with HKUST's regional vision.

"Attitudes have changed a lot," says Professor Chan, thinking back over the first 10 years. "At first people used to ask: Do you have a business school at HKUST? Now people are very much aware and very proud of the business programs at the University and our accomplishments."

The School strengthens its support for local activities through research into Hong Kong's economic and logistical needs, creating an information resource for businesses and the Government to call upon as they make their plans for the future.

Secondary students explore high technologies at HKUST during the annual Student Outreach Day.



### Spreading the Word

Overall community ties have grown rapidly during HKUST's first decade, ranging from science and language camps for secondary school students in the summer holidays to an industrial consortium, which fosters links with the local business and industry community.

Faculty and staff have put their energy and commitment to work as advisers and volunteers beyond the campus and, by the turn of the century, were participating in over 300 government and public advisory bodies. Substantial

efforts have been devoted to IT education and the enhancement of science and mathematics teaching in schools, while popular science lectures and radio and television appearances have enhanced public interest in scientific discovery.

Future ventures lie online, and to that end, the University has set up the College of Lifelong Learning. The subsidiary will provide additional educational programs, largely via the Internet, for people who wish to continue the search for knowledge on their own.

### People Power

One of the most powerful ways of showing Hong Kong what HKUST is all about has been through its alumni. Since 1993, when the University's first postgraduates went out into the community, and 1994, when its first bachelor degree graduates made their debut, Hong Kong has been able to see at first hand the results of the University's work.

HKUST alumni have taken up positions in a wide number of fields, from software engineering, environmental conservation, management, and the police to sports reporting.

The value placed on these human resources by the community can be seen through the consistently high employment rate of those leaving HKUST — even when economic times







have been hard. In 1999, only 0.9% of HKUST graduates were unemployed, including those who had chosen to turn down offers or to take hard-earned leave.

At the same time, the independent, enterprising spirit fostered at HKUST has increasingly led its graduates to found their own companies.

In 1998, five HKUST graduates became the first residents of the University's new Tech Center, setting up their own high-tech business to market a voice processing system. The Entrepreneurship Program, initiated in 1999, is now helping to generate many more such opportunities.

"The skills that graduates of HKUST have acquired during their time at the

University have been a strong force in moving Hong Kong into the information age," says 1994 graduate Amy WONG, a senior marketing officer with a major IT company and founding President of the HKUST Alumni Association.

Such creative skills, she says, not only relate to what is studied but how it is studied. "I was a physics major. When I left and went into marketing, I found that I could apply the thinking used in physics problems to find solutions to my marketing tasks."

Being embedded in the life of Hong Kong does not mean the wider picture can be forgotten. Far from it.

As the University's leading researchers are quick to point out, you work at a world-class level or you find things do



*HKUST's first batch of "technopreneurs" and first residents of the Tech Center.*

not work at all. From the first day, HKUST's goal was a place in the international league of leading universities. The remarkable quest was to gain it within a decade.

### EMINENT SPEAKERS' CORNER

*For those who enjoy distinguished company, HKUST has just the answer. Soon after it opened, the University began bringing over eminent speakers to share their insights into various subjects. These included Nobel laureates Prof John Polanyi (chemistry), Prof Leo Esaki (physics), Prof Merton Miller (economics), and Prof Stephen Chu (physics); and Wolf Prize winner Prof Joseph Keller (mathematics).*

*Many other leading community members and influential overseas guests have added to the knowledge debate sparked by HKUST, including Microsoft founder Mr Bill Gates (far right), Yahoo founder Mr Jerry Yang (top right), and Dr Daniel Goleman (bottom right), originator of the Emotional Intelligence concept. A first-class way to keep up with the latest thinking.*

