Hit by the Asian financial crisis, many Hong Kong people begin to realize that a sound economy cannot solely rely on the finance and property market. There is an urgent need to diversify the economy more than ever.

The expenditure-based Gross Domestic Product (GDP) for the third quarter of 1998 released by the Government’s Census and Statistics Department revealed a 7.1 per cent drop in real terms over the same period of the previous year. Unemployment rate reached 5.5 per cent in late 1998. Property prices have collapsed to about half of their heady heights of mid-1997. The territory is experiencing an unprecedented recession.

The road to recovery is full of challenges and chances. In an attempt to boost the future growth of the economy, the SAR Chief Executive Mr. Tung Chee-hwa announced his intention to make Hong Kong a “regional innovation centre” in his second policy address in 1998.

Under the chairmanship of Professor Tien Chang-lin, former Chancellor of the University of California at Berkeley, the government-appointed Commission on Innovation and Technology completed its interim report last September.

Concurrently, the Government announced its decision to inject $5 billion for the establishment of an Innovation and Technology Fund, and the setting up of an Applied Science and Technology Research Institute to boost the territory’s mid-stream research capacity.

At the press conference announcing the Commission’s First Report on October 9, 1998, Prof. Tien pointed out that it was crucial for Hong Kong to map out its position in the knowledge-based economy against increasing world competition.

He further commented that Hong Kong must create new and more effective niches through innovation and technology in order to ensure longer term economic stability and growth. Innovation and technology were important to all sectors of the economy, including traditional and low-tech manufacturing industries, as well as service industries. They might be applicable to every aspect of the value-adding chain.

“We envision Hong Kong to be an innovation-led, technology-intensive economy in the 21st century, serving the region as a centre for the development and commercialisation of innovative ideas and technology, in addition to Hong Kong’s current role as a business and financial centre.”

“While industry must make its own choices and investments, the Government should play the role of a promoter, facilitator and supporter,” Prof. Tien said.

The Government’s determination is clear. As Mr. Francis Ho Suen-wai, an ex-officio member of the Commission and the Government’s Director-General of Industry, said: “The 21st century will be a knowledge-
based world. In a knowledge-based global economy, innovation and technology are essential in adding value, increasing productivity and enhancing our overall competitiveness.”

“In the world’s largest economy, that of the United States, 80 per cent of productivity growth is attributed to technological and knowledge-based advances. To achieve success in this area, however, requires a dedicated effort and a commitment to investing in the necessary technological infrastructure. Although the rewards may not be immediately apparent, this is an essential investment in our future,” said Mr. Ho.

Innovation comes in many forms, but the Government’s current preoccupation is decidedly high technology of an applied nature.

“Some people associate high technology with state-of-the-art products, such as aerospace and supercomputers. However, technology is not remote from our everyday life at all. Technology with high or new scientific contents that creates or adds value to our products and service actually abounds. A very good example is the use of smart cards.”

“Moreover, innovation and technology are not the prerogative of new industries.

In the same way that banking and transportation may be revolutionized by innovation and technology, so may other so-called traditional industries, such as textiles, garment, plastics and metal.” Mr. Ho added.

“To achieve this goal, the government effort alone is surely not enough. I am delighted to see that academia and the private sector are taking active initiatives in helping the process,” he observed.

Initially, the Government’s plan on innovation and technology has been met with skepticism, because Hong Kong has no technological infrastructure in respect of midstream research and development. In a single year, the total expenditure on research and development from all sources is usually less than 0.5 per cent of the territory’s GDP. In comparison, other Asian economic powerhouses like Singapore and Taiwan are investing far more in research, with an annual expenditure between 1 and 1.5 per cent of their total national GDP.

Dr. Lily Chiang, Executive Director of the locally-listed Chen Hsong Group, agrees that the investment amount is insufficient: “Even a single factory in Taiwan can spend one billion (US dollar) on an expansion. The Government’s investment is not very significant.”

The Government is not fighting a lonely battle. There is a growing consensus on the development of innovation and
technology among the industrial sector and the community at large.

Mr. Henry Tang Ying-yen, a leading industrialist on the panel of the Commission on Innovation and Technology, said: “The Asian financial crisis has prompted the government and the community to realize the stabilizing function of industry in the economy structure.

“University researchers must understand that what the industry needs is not distant and unreachable. What we need most are midstream researches that are readily applicable in our daily life. At the same time, industrialists should be aware of the latest research results, and make use of their business acumen to identify suitable products for commercialization.”

The partnership between academia and industry has indeed come a long way.

Traditionally, university researchers do not want to confine themselves to applied research. To increase the chances of success in midstream research, many universities realize that a closer involvement with industry is almost an irrevocable trend. The Massachusetts Institute of Technology’s Made by Hong Kong study in 1997 further re-affirmed the need to increase allocation of resources to research and development in order to assist local industry move to higher value-added activities.

Nevertheless, providing support to industry is by no means an easy task, as pointed out by Mr. Alwin Wong, Head of Industrial Development (Technology Resources) of The Hong Kong Polytechnic University. “To expedite the use of advanced technologies, availability of the requisite human resources is essential.”

“The PolyU is fully committed to meeting the needs for professional manpower. Besides, the University also encourages its staff to support the industry by conducting applied researches and providing consultancy services,” Mr. Wong continues.

The two major objectives of the University are not mutually exclusive. Since 1990, the Institution has been operating a Teaching Company Scheme under which graduate research students are placed full-time in participating companies for two years to undertake research of specific concern to the company. The student receives a full salary contributed equally by the University and the company concerned, and is guided by an academic supervisor from the University as well as by supervisors from the company.

Through this operation model, participating companies will benefit from the research deliverables, and students will benefit from their practical research experience in a genuine business environment. So far a total of 38 projects has been successfully completed for the industry.

The Scheme has won high acclaim not only from the industry but also from the Commission on Innovation and Technology. The Commission noted in its interim report: “We consider the Scheme a good model for fostering university-industry partnership and recommend that it should be promoted to other universities.”

In 1996, the PolyU earmarked the Industry-Guided Research and Development (IGARD) Fund from its internal reserve to stimulate applied research with well-identified industrial application. Part of the industry-guided nature is reflected by the requirement that endorsements must be obtained from at least two reputable establishments in the relevant industry ascertaining the value of the projects.
More recently, the PolyU is actively working on the establishment of the Rapid Product Development Syndicate (RAPRODS) under the aegis of its non-profit-making services arm, the PolyU Technology and Consultancy Company Ltd. “To realize the vision of establishing Hong Kong as a regional innovation centre, Hong Kong companies must be prepared to move from original equipment manufacturing to original design manufacturing,” Mr. Wong said.

initiated by the PolyU. Apart from the PolyU, ISTA’s current membership includes 14 leading universities in the Chinese Mainland, the University of Warwick in the UK and Purdue University in the US. According to PolyU’s experience, collaboration with institutions on the Mainland proves to be a huge success. The University has successfully completed 14 products for commercialization despite the relatively short history of ISTA. The new products have gained strong support from the industry. Pro-Health Technology Limited, a member of the Chen Hsong Group, has commercialized eight medical-related products out of the 14 breakthroughs. Dr. Lily Chiang said: “Our project with the PolyU fully exemplifies the tremendous potential for collaboration between industry and academia.”

In a broader perspective, the Government has also taken many other steps to provide a congenial environment for Hong Kong’s inventors. The newly set up Patent Application Grant has supported 31 patent-seekers by covering the various costs involved in the registration process, and the construction of the territory’s first Science Park is in full swing. Situated in a site of 22 hectares in Tai Po, the Science Park will provide office premises for rent to technology-based companies and land plots for lease to firms that plan to purpose-build their own premises for intensive research and development. Is any place too late for innovation and technology? At least this is not the case for Israel. In seven years’ time, the country came from nowhere to become in the forefront in the world’s information technology industry.

In the next phase of its work, the Commission on Innovation and Technology will examine issues not fully covered in the first report. These include measures to attract technological talents to Hong Kong, fostering a culture of innovation and technology in industry, improving the business environment and reviewing institutional arrangements. Coupled with the entrepreneurial drive and resilience of Hong Kong people, it is highly likely that innovation and technology will become the future drives of the economy.
發展創新科技刻不容緩

到亞洲金融風暴的衝擊，很多香港人開始對一個健全的金融體系不能避免金融破產和危機發生，而需要多元化發展。政府持續多月的統計數據顯示經濟呈負成長，失業率不斷飆升，樓價從九七年的高位下滑接近一半之多；这一切顯示，香港正處於嚴峻的經濟衰退期。

為了促進香港未來的經濟發展，特區行政長官董建華先生在九九八年的發表的第二份施政報告中訂明明確的目標，要將香港發展成為華南以至整個亞太區域的「創新科技中心」。與此同時，政府委任的創新科技委員會在田長霖教授的領導下亦完成了首份報告書。政府隨即宣佈耗資五十億港元設立創新科技基金，並組成成立應用科技研究院大力促進中港研究的發展。

田長霖教授公布第一份報告書時表示，香港需要以知識為本的全球經濟中定位，以供應來自世界各地及多元的競爭。

田教授重申，為了確保長期經濟穩定和增長，香港必須通過創新及科技發展新的、效用更高的模式。他認為，創新及科技對經濟體系的所有行業，包括傳統或新興科技的產業和服務業，均十分重要；創新及科技亦可適用於增值鍊的各個環節。

政府發展創新科技決心堅定，據創科委官方成員之一工業署署長何宣威先生表示：「在二十世紀的全球一體化經濟體系將會以知識和資訊為基礎，香港必須發展創新的動力和發展科技的能力，才可以增強本身的競爭力。雖然現時政府的投資未可以立即取得回報，然而這項投資對香港的將來發展非常重要。」

「要在面對這個目標，政府單方面的努力是不足夠的。我們很高興看到學界與各企業社會人士感到疑慮。其中一個主要原因，