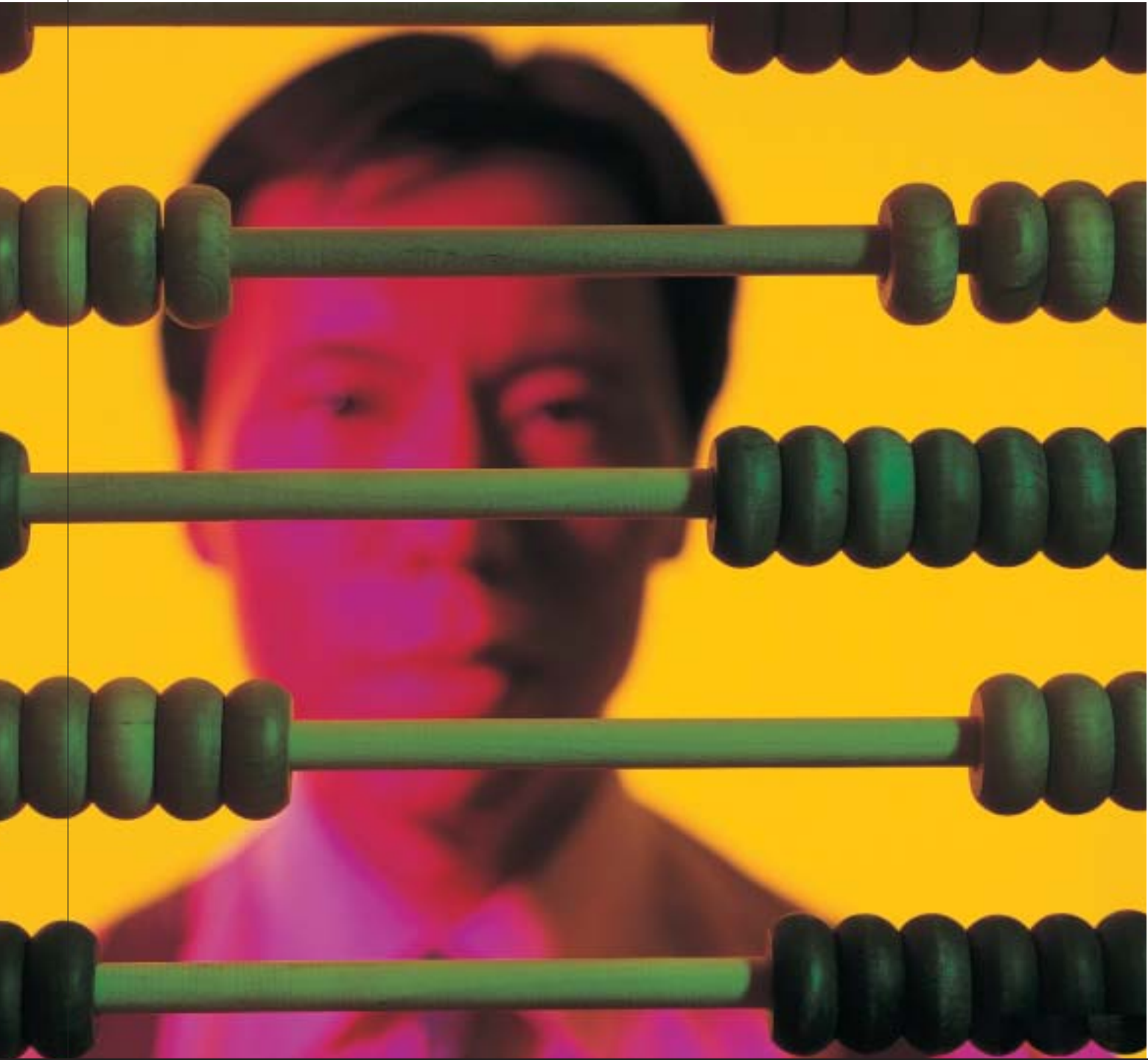


ALL THE ACTUAL



DIGITAL VISION/GETTYONE

RISES IN CHINA

ON JUNE 30, 1995, the National People's Congress of China passed China's first insurance law, with an effective date of October 1, 1995. The China Insurance Law divides the commercial insurance business into two categories: property and casualty, and life and health. The companies are required to choose one or the other. For life insurance business, Article 119 stipulates: "Insurance companies engaged in the life insurance business must appoint and employ a professional actuary certified by the financial supervision and control department, and establish an actuarial reporting system." Thus, the Chinese Insurance Law confers an official and legal recognition on the significant role of the actuary in the operation of the life insurance business.

The insurance business in China re-emerged in 1980, after a quarter-century's interruption, when the People's Insurance Company of Chi-

na (PICC) was revived. PICC is a state-owned company that transacts all types of insurance business and, for almost a decade, the only company monopolizing the market. In 1988 a new company, the Ping An Insurance Company, was organized in Shenzhen Special Economic Zone. In the early 1990s, a number of local insurance companies were established, and in 1992, the first foreign insurance company, the American International Group, was authorized to transact business in Shanghai.

THE EMERGENCE OF A PROFESSION

By the end of August 2002, there were 54 insurance companies, of which 20 were domestic and 34 joint ventures or established with foreign capital. And in

1997, the People's Bank of China (PBOC) created a separate Insurance Administration Department to regulate and supervise the operation of all the insurance companies in China. The new department is expected to approve 10 new domestic and foreign insurance companies in the near future. In 1998, the China Insurance Regulatory Commission was established. A viable and competitive insurance market will be emerging with the expansion and further privatization of the Chinese economy. Insurance business in China, especially the life insurance business, can be expected to enjoy rapid growth. To those who are familiar with recent insurance developments in China, a specific provision in the law establishing the role of actuaries in the insurance business is not only amazing, but it also provides great satisfaction. Just a decade ago, there were no professional actuaries in China, and the term "actu-

One of the leading figures in China's fledgling insurance business tells the story of how the actuarial profession has evolved in the People's Republic, and where it's headed.

By Dr. Kailin Tuan

arial science" was unknown to insurance people and academicians as well. Since January 1994, 19 actuaries have achieved the Associateship designation of the Society of Actuaries through a series of professional examinations the SOA administered at three examination centers in China. In addition, recent graduates have earned master's degrees in actuarial science from Nankai University and bachelor's degrees with a concentration in actuarial science from the Hunan College of Finance and Economics. These Chinese actuarial professionals will make the provision in the Chinese Insurance Law meaningful and realistic. ▶

The Beginning

The emergence of this pioneering group of ASAs in China is by no means sudden and accidental; behind them is a decade of effort. In the spring of 1985, a PBOC delegation came to the United States to study financial education and training. Temple University's Schools of Business and Management hosted their visit to Philadelphia. Because Philadelphia is the center of insurance education in America, the delegation, led by Mr. Hao-Yuan Li, director of the PBOC's education department, visited insurance companies and studied academic programs at Temple's Department of Risk Management and Insurance, the Wharton School, and professional insurance programs such as CLU and CPCU. Mr. Li and his colleagues were particularly impressed with and interested in the role played by actuaries in the sound operation and management of insurance companies.

Shortly after their return, I met Mr. Li in Beijing while attending the International Symposium in Economy and Management, sponsored by the Chinese Ministry of Education. Specifically, we discussed the ways and means of cultivating the actuarial profession in China because China has never had full-fledged actuaries, even though the insurance business was introduced into China before the Opium War in the 1830s. According to the Society of Actuaries membership directory, before 1950 there was no Chinese FSA, but one ASA in Shanghai. (That associate Mr. Ssu-Tu Chen, left Shanghai that year for Hong Kong and worked for the Wing On Life Assurance Company there.)

The traditional approach of sending young Chinese to study actuarial science abroad was too slow, limited, and expensive. Meanwhile, the Chinese insurance business required modernization on a scientific basis at the outset. Thus, China urgently needed a great number of modern insurance professionals, including actuaries, in a hurry. We concluded that to do this, it would be better to reverse the flow—that is, bring the teaching and study of actuarial science into China. What China needed was experienced teachers of actuarial science, and the only solution was to “import” such technical experts from advanced countries.

For two years (1985-87) on both sides of the Pacific, I explored the possibility of introducing such an actuarial studies program. An academic institution was needed to operate the experimental program and provide the necessary support services to visiting personnel. Nankai University, a leading comprehensive university in China with a strong base in liberal arts and science and particular strength in mathematics, agreed to collaborate in establishing a graduate program in actuarial science through its College of Economics.

More importantly, through the help of Professor Robert J. Myers, FSA, a colleague at Temple (former chief actuary at the U.S. Social Security Administration and a past president of the Society of Actuaries), I submitted a request for assistance to the Society of Actuaries. The request was very timely because the Society was beginning to expand its international ties with foreign actuarial bodies.

Early in 1987, the SOA established a Committee on Inter-



national Relations. The committee was specifically charged with taking the lead in developing such ties and in encouraging and recognizing the international development of professional standards. Thus, the Nankai University program provided the Society with a singular opportunity to influence the development and strengthening of the actuarial profession in a most important country.

Consequently, at the October 1987 annual meeting in Montreal, the SOA's Board of Governors unanimously passed a resolution approving a proposal for the Society to assist in establishing an actuarial science program at Nankai University in Tianjin, China. With this in mind, a memorandum of understanding, which established and defined the Nankai University actuarial science program, was negotiated and signed late in November 1987 by Harold G. Ingraham Jr., then president of the SOA and the president of Nankai University.

Known as the Graduate Program in Actuarial Science, the program would have a twofold purpose: (1) to train and provide qualified actuaries for the Chinese insurance business and the government (particularly to address social insurance issues), and (2) to train qualified teachers of actuarial science for other Chinese universities. The three-year master's degree program would incorporate required Chinese courses and advanced actuarial courses. The SOA agreed to provide qualified teachers to teach (in English) the actuarial courses, which include:

- Fundamentals of risk and insurance
- Theory of interest
- Numerical methods
- Life contingencies/actuarial mathematics I
- Life contingencies/actuarial mathematics II
- Casualty contingencies
- Survival models and construction of actuarial tables
- Casualty loss distribution

The program is broadly structured to include both life and casualty actuarial subjects. Furthermore, the students are required to write graduation theses under the guidance of Chinese and North American tutors. When both the courses and the thesis are completed, a student is awarded an M.S. in actuarial science by Nankai University.

The Accomplishments

The SOA-Nankai Program was inaugurated on September 1, 1988. A first class of 15 graduate students was admitted. Their selection was based on performance on the Chinese National Unified Entrance Examination for Graduate Students administered in late February 1988. Each participating actuarial professor (U.S. and Canadian) would spend one month in China: three weeks teaching a course (3 hours a day, 5 days a week) and the remaining week sightseeing inside China. After having taught a course on the Nankai campus, Warren Luckner, FSA, a former college professor and currently research actuary on the staff of the Society, reported that the North American faculty members were impressed with the students and hospitality of all the Chinese.

"Although the Society of Actuaries and the North American Faculty were motivated primarily by a desire to help the people of China," Luckner said, "the SOA and the faculty also have benefited in many ways through participation in the program. The opportunity to assist in the development of an actuarial profession in China furthers the Society of Actuaries' stature in the international actuarial community. With internationalization of financial services, this will be of long-term benefit to the Society of Actuaries. The individual North American faculty members have had a rare opportunity to live, teach, and learn in a different country and culture. As internationalization continues, this experience will be of particular benefit to those individuals."

On June 25, 1991, the first class of 15 students graduated from the program in a special ceremony. Harold Ingraham, the SOA past president who had initiated the program in 1987, and Dr. Tuan, coordinator of the program, gave the commencement addresses during the ceremony. The SOA renewed the program, and the second class of 14 students started their studies in the fall 1991 semester. After three years of effort, they also successfully completed their studies in June 1994.

The SOA has renewed its support for the program on a partial basis by supplying textbooks and study materials. The third class of Nankai actuarial students started their studies beginning in the fall 1994 semester. Among the first class of graduates, seven have pursued teaching careers (one remains at Nankai), three are working for PICC in Beijing, one for the China Pacific Insurance Company in Shanghai (later to pursue doctoral study at the University of Waterloo), and one for Ping An Insurance Company in Shenzhen. In public service, one graduate is at PBOC and two are with the Social Insurance Bureau of the Shenzhen City Government. All the graduates of the second class have gone to work for various Chinese insurance companies except one, who went with the Ministry of Finance in Beijing.

In the spring of 1992, with the financial support from Manulife Financial of Canada, an SOA examination center was established on the Nankai Campus. Some of the graduates of the first class and the students of the second class took their first SOA exams in November 1992. The results were most favorable; the passing ratio was an impressive 87 percent, which is double the corresponding U.S./Canadian average of 43 percent. In the ensuing exams in May 1993, November 1993, and May 1994, the

ratio remained about 85 percent for all three exam sessions. The third class of Nankai actuarial students, who started their studies in September 1994, took their first SOA exams in May 1995. They have achieved an astonishing passing ratio of 100 percent.

In 1994, additional SOA exam centers were set up in Shanghai (for students at Fudan University and Shanghai University of Finance and Economics) and in Changsha (for undergraduate students at the Hunan College of Finance and Economics). The results of the May 1995 exams at these two centers were also encouraging, especially for the Hunan College students. A total of 44 candidates sat for 139 exams, and 96 of the 139 exams were passed, for a 69 percent pass rate. This also represents an outstanding performance, considering that the Hunan college program is an undergraduate program in actuarial science, and Nankai University is a graduate-level program.

Chinese students taking SOA examinations have to pay both the registration and examination fees in U.S. dollars. The amount of these fees is prohibitive to these students in mainland China. This dilemma has been resolved through private international assistance. AIG, the first foreign insurance company authorized to do business in Shanghai, has collaborated with Fudan students. The Principal Mutual Life Insurance Co. paid the exam fees for the students of Shanghai University of Finance and Economics who took the May 1995 exams at the Fudan-AIG center. Meanwhile, Lincoln National Life has paid the exam fees for Hunan College students. A new exam center has just been

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established at the People's University of China in Beijing; and for the November 1995 exams, Swiss Reinsurance Co. has agreed to pay the fees for students of the People's University.

The financial assistance of the North American and European insurance companies has made it possible for a large number of Chinese students to take the various parts of the SOA exams in recent years. Consequently, two Nankai students were the first Chinese actuaries to become Associates of the SOA after the November 1993 examinations. They are Mr. Yu Luo, an instructor at Nankai, and Mr. Qui Li, a student of the second class who is now working for the Chinese Ministry of Finance.

To celebrate this special event, Stephen Radcliffe, the 1993-94 SOA president, made a special trip to Tianjin to personally present the ASA certificates to these two young men and to attend the graduation ceremony of the second class of SOA-Nankai actuarial students on June 20, 1994. Since then, seven Chinese actuaries became ASAs after the May 1994 exams; four after the November 1994 exams; and the latest, six, after the May 1995 exams. Thus, within less than two years China has produced 19 internationally qualified actuaries (17 from Nankai, one from Shanghai, and one from Hunan). This outcome represents an astonishing "return on investment" beyond expectations when the SOA Board of Governors passed the resolution in 1987! By the end of 2002, there were 16 FSAs (three from Nankai) and one FIA in mainland China.

Another milestone was reached in June 1995 when the first class of 29 students of actuarial science graduated from the Hunan College of Finance and Economics. The Hunan College is under the jurisdiction of the education department of the PBOC. As mentioned earlier, PBOC officials have attached great significance to the actuarial profession since 1985; and thus, they started this very first undergraduate program in actuarial science in 1991 at Hunan College.

In appreciation of the SOA's support of this program, the education department of PBOC extended an invitation to the SOA to visit China. An SOA delegation, led by Barnet N. Berin, former president of the SOA, participated in the graduation ceremony on June 21, 1995, at HCFE in Changsha. In addition to meeting with PBOC education officials in Beijing, the delegation also visited the China Pacific Insurance Co. in Shanghai, the Ping An Insurance Co. in Shenzhen, and related schools in various cities.

The Impacts

The introduction of the SOA-sponsored actuarial program at Nankai in China in 1988 was very timely. Since then, China's insurance business has entered a new stage of expansion. Meanwhile, amid feverish economic reform, the central government in Beijing, as well as provincial and local government, has recognized the urgency of reforming China's social security programs, especially the retirement-income programs, for China's employees. Commercial and public forces have combined to prompt Chinese leaders, in both public and private sectors, to recognize the great need for competent actuaries. This has led to a push for actuarial study and education in China beyond the Nankai campus in Tianjin.

As a result, many in Chinese academic, insurance, and fi-

ancial circles have closely watched the pioneering experiment of international exchange in fostering actuarial studies in China. Above all, PBOC officials have expressed their interest and faith in the success of the SOA-Nankai program.

Limited by its experimental nature and special mission, the program is structured at the graduate level to produce a limited number of actuarial students. Yet the rapid expansion of the Chinese insurance business will require the services of a large number of qualified actuarial professionals in a relatively short time. Thus, the education department of PBOC directed its attention to an undergraduate actuarial program.

It selected one of the schools under its jurisdiction, the Hunan College of Finance and Economics, to establish an insurance department in 1991. The department introduced three areas of concentration—insurance, social insurance, and actuarial science—and enrolled its first classes of students in the fall semester of 1991. Meanwhile, the college dispatched four faculty members to study actuarial courses at Nankai University and sent another to Temple University in Philadelphia as a visiting scholar. Two years later when the students entered their junior year, teachers were ready to teach the actuarial courses in the curriculum. By June 1995, the first class of 29 actuarial science students graduated, a number exceeding the total Nankai graduates of 1991 and 1994 combined. Among the graduates, one earned her ASA in July 1995 and has stayed at the Hunan College as an instructor.

Because of the special attention bestowed upon this new subject by the highest financial authority in China, other schools are following suit in introducing actuarial study programs. In 1993, both the People's University in Beijing and the Shanghai University of Finance and Economics established undergraduate programs in actuarial science, followed by Fudan University in Shanghai the next year. By the summer of 1995, actuarial studies programs, in one form or another, had been introduced in more than 10 Chinese colleges and universities, spreading over China from the northeast corner (Northeast University in Shenyang), to the southwest (the Southwest University of Finance and Economics, another PBOC school, in Chengdu).

Outside mainland China, in both Taiwan and Hong Kong, the SOA-Nankai actuarial program has further stimulated academic study of actuarial science. Although both places were far advanced in economic development, there had been no academic program of actuarial science in either place before the 1990s. In Taiwan, insurance companies chose to "import" trained actuaries from the United States or Japan. It was not until three years ago that the Graduate Institute of Statistics and Actuarial Science was established at the Fang Cha University. In 1997, Hong Kong University began to recruit an actuarial science professor to teach the subject. The SOA has had examination centers at both places for several years.

The SOA-Nankai program has also had positive impacts on the international actuarial community. Patterned after the "Nankai Model," the (British) Institute of Actuaries assisted in establishing a graduate actuarial program at the Central Institute of Finance and Banking in Beijing in 1993. The Society and the Institute joined forces to help the Moscow State University introduce an actuarial study program in Russia in 1994.



The Chinese insurance industry must not only catch up but also keep pace with new technologies, new products, and expanded services to cover new risks in the processes of industrialization and modernization.

From Actuarial to Managerial Education

At the graduation ceremony of the first Nankai actuarial class on June 25, 1991, University President Mu GuoGuan announced the establishment of an International Institute for Advanced Studies in Economic Security and the appointment of Dr. Kailin Tuan as its first director. The Institute focuses on teaching, research, and publication.

Besides continuing to administer the graduate program in actuarial science, the Institute aims to create a new graduate program in risk and insurance management. Professors will be recruited from North America to teach the courses. The objective is to prepare high-level managerial personnel for the inevitable reform of China's insurance business, public pension plans, and social welfare program. Meanwhile, the new program also aims to prepare qualified teachers for other Chinese colleges and universities in the new curriculum of risk and insurance management.

After two years of planning and preparation, the new graduate program in risk and insurance management started its first class of 12 graduate students in the fall 1994 semester. Students take all the necessary courses and are also required to write a thesis in three years to earn a master's degree. Two major American insurance companies are providing funds to the Institute for the program's operation. CIGNA International endows a "CIGNA Professor of International Insurance," sending a qualified teacher each semester to teach the courses on the Nankai campus. During the first year of 1994-95, the teachers were William Dwyer, CLU, and Allen Wu, ASA.

John Hancock Mutual Life Insurance Company provides funds to purchase the American textbooks and study materials for the students. The company also pays for students' Life Office Management Association (LOMA) exam fees because the graduate program incorporates some courses in LOMA's Fellow Life Management Institute (FLMI) program. When these Nankai students graduated in June 1997, they became China's very first group of FLMI's.

In May 1995, the students took their first LOMA exams, six students for three exams each and four others for two exams each. All the students passed all these exams. This record speaks extraordinarily well for the students and the visiting teachers at Nankai. The average pass ratio for FLMI courses in America is about 67 percent. Thus, the Nankai students have performed extremely well. Given the language obstacle, the record is particularly impressive.

The Future Challenge

In a relatively short period of seven years, the accomplishments of Nankai actuarial students and the number of actuaries produced in China have demonstrated the success of the SOA-Nankai actuarial program beyond any doubt. More significant, the program firmly establishes the SOA-Nankai experiment as a new, viable model for international exchange through private assistance and cooperation. It has already served as a model for the (British) Institute of Actuaries, which has taken similar actions in China and Russia. It will also likely serve as a useful model for developing other academic and professional disciplines in other developing countries.

The SOA-Nankai model also effectively demonstrates a practical way for facilitating the transfer of insurance technology, at least the technical knowledge. The technology specific to the insurance industry generally can be divided into two categories: technical knowledge and operational know-how. In any industry, technical knowledge consists of both the purely "engineering" aspects of the productive process (in the case of insurance, the actuarial process and system) and the economic and organizational aspects of the operations of a firm, including management and marketing.

"Know-how" is the capacity to effectively use technical knowledge. It's based on a combination of pure technical knowledge and skill gained from participation in actual operation (on-the-job training). Pure technical knowledge is useless from the productive point of view. The overall knowledge of people trained in actual operations (know-how) has wider scope and can be transferred only by demonstration and teaching in actual operations. On the general level, this package of technical knowledge and know-how is critical to the successful operation of any productive enterprise. In the case of insurance, the know-how component is especially important.

China's insurance industry, reborn in 1980 after a quarter of a century's interruption, is still in its infancy. It lacks both modern technical knowledge and know-how and is urgently in need of rapid modernization. The Chinese insurance industry must not only catch up but also keep pace with new technologies, new products, and expanded services to cover new risks in the processes of industrialization and modernization. For almost a decade, the pioneering endeavors of Nankai University and its international Institute have successfully persuaded North American insurance organizations (SOA and LOMA) and companies to undertake the task of transferring technical knowledge. It remains to be seen whether the Chinese government (especially the PBOC) and the Chinese insurance business will find effective ways and means of transferring the "insurance know-how" from the advanced countries in North America and Europe to China.

In certain industries, technology can be marketed piecemeal through licensing arrangements or narrowly focused technical assistance contracts. Insurance technology, however, aside from its high technical knowledge (skills) content, is heavily endowed with the "know-how" ingredient. Such knowledge can be transferred only by demonstration and teaching within actual insurance operations by experienced personnel, who themselves have acquired such know-how through long-term affiliation

with the worldwide operations of international insurers.

The transfer of such know-how and technical skills thus requires long-term, intimate working arrangements between international insurers and developing countries such as China in actual hands-on working situations at the national level. In this way, the complete package of skills can be grasped and expanded upon.

In this regard, the Institute has sought support from North American

insurers to introduce internship programs for Nankai graduates and students. Since late 1993, internship programs have been established in one form or another, first by CIGNA International in its Hong Kong office, and then by both Transamerica Life and Metropolitan Life in the United States. Large international actuarial consulting firms should also consider establishing internship programs for the actuarial students graduating from Nankai and oth-

er Chinese universities.

One firm, Milliman USA, is moving in this direction and has offered to Yu Luo, one of China's first ASAs, an opportunity to intern at its Boston office in September, and then to visit a number of Milliman USA's overseas offices during the next year. This approach provides only a limited solution and benefits only a small number of people. A broader, permanent relationship between international insurers and China is required. More than conventional wisdom is needed on both sides to enter into a working partnership for the effective, complete transfer of insurance technology. In this way, China can achieve rapid modernization of its emerging insurance industry.

The transfer of the total package of insurance technology is also in the best interests of major North American insurers that would like to enter the China market. Shortly after the inauguration of the SOA-Nankai actuarial program, Dr. John G. Stoessinger, the keynote speaker in the 1988 SOA Annual Meeting, said that "the SOA is on the cutting edge of a new era in China" and the Society is making an excellent "investment" in China.

He continued, "The Nankai University program will help U.S. and Canadian firms gain footholds in China that will help them compete better against the Japanese for the Chinese insurance market." Indeed, he maintained, "The more you do now to prepare the ground, the more business will come your way."

Today, Dr. Stoessinger's words provide fresh food for thought to North American insurers on the desirability of fostering the transfer of total insurance technology to China. ●

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