

Interview with President KOMIYAMA Hiroshi, University of Tokyo

This interview was conducted in Tokyo in June, 2006

The prestigious University of Tokyo is the oldest national university in Japan. With approximately 28,000 students studying toward undergraduate and graduate degrees, the University organization consists of the College of Arts and Sciences, 9 faculties, and 15 graduate schools. The 9 faculties are Law, Medicine, Engineering, Letters, Science, Agriculture, Economics, Education, and Pharmaceutical Sciences. The traditional 11 graduate schools are Law and Politics, Medicine, Engineering, Humanities and Sociology, Science, Agricultural and Life Sciences, Economics, Arts and Sciences, Education, Pharmaceutical Sciences, and Mathematical Sciences. In the past decade the University has seen the establishment of 4 new pioneering graduate schools: Frontier Sciences, Interdisciplinary Information Studies, Information Science and Technology, and Public Policy.

Dr. Komiyama became the 28th president of the University of Tokyo in April, 2005. Having received his Bachelor's, Master's, and Doctoral degrees from that institution, Dr. Komiyama specializes in chemical engineering, advanced material engineering and global environment engineering. He kindly granted an interview on June 12, 2006 to articulate his vision for the University of Tokyo and higher education in Japan.

Question Leadership Review: Can you tell us a little about your own career and the path you took prior to this position?

Answer Dr. Komiyama: I was a full professor in the Department of Chemical System Engineering. Later, I became Dean of the School of Engineering. I became a vice-president, and then executive vice-president of the university before assuming the presidency.

Q: What educational or career paths do you suggest for people aspiring to run a university?

A: In general, it is important to receive training in the management of a university. In particular, to become president of such a large university as the University of Tokyo, it is imperative to serve as a head of a large department or as president of a small university.

Q: What approach do you take to cultivate rising leaders within the University, in terms of preparing people for high-level university positions?

A: In that sense, to have the candidate serve as an aide to the president appears to be most effective. That role may be similar to that of vice president of American universities.

Q: What were some of the major issues the University was facing when you came into office? What was your leadership philosophy in addressing these challenges?

A: I found many serious and interconnected issues when I came into office, which is not surprising given the complexity of the university and its management. My philosophy is derived from systems engineering: foster autonomy, yet encourage harmony among the university's units and the faculty. Think about the human body. The body's organs work autonomously, yet the totality is the human being that comprises various organs working in harmony.

For example, we have 5,000 professors. It is considered that they are given an intrinsic autonomy by society. Knowledge has expanded greatly, but with the depth of study has come compartmentalization and the narrowing of disciplines, such that some professors are unaware of the work of others.

I am a chemical engineer. That field was born as a combination of mechanical engineering and chemistry. It is not just a mixing of disciplines, it is a fusion. My philosophy is that a "needs driven" approach will have the additional virtue of requiring the fusion of disciplines. In the case of chemical engineering, for example, the need was to go beyond the chemistry of synthesizing individual compounds, to find processes to synthesize a great number of compounds. This, then, required the fusion of engineering with chemistry.

Management of a large university is like finding a few clues from the pile of issues and inferring the entire picture, just like Sherlock Holmes finding evidence, re-constructing the entire story, and solving the case. What is important in the management of universities is to find the right clues or key points which lead to grasping the entire picture.

Let me use another analogy here. Think about molten material, say silicon or something. It is amorphous—or in chaos—and not useful to us. But if you inject the right kind of core at the right spot, the material may start crystallizing around that core and become useful to us. This process of inference is not consistent with either induction or deduction. Some people argue that it is the process of abduction. This is my philosophy for dealing with complex issues and it underlies our Action Plan. The Action Plan aims to develop the University of Tokyo into a place that attracts the most talented youth on earth and fosters their abilities, a place where researchers generate new knowledge through friendly competition and promote its beneficial use throughout society as the common property of mankind.

Q: Would you say that different leadership challenges and approaches ought to be applied in the educational context than in business or government?

A: Both business corporations and universities are organizations where people play the main role and, therefore, there are many things in common. I don't think business corporations are any simpler than universities. Financial soundness is as important for universities as for business corporations. In particular, as the failure of private universities is increasing, profit/loss management is becoming increasingly important for universities. This has become true for the former national universities, including the University of Tokyo, since their conversion to autonomous corporations. Therefore, it is useful for us to have knowledge of management of business corporations.

On the other hand, however, there are some notable differences. Corporate management, however complex it may be, could be simplified and boiled down to the management of money. The purpose of corporate management and the value of the organization can be expressed by monetary measures. There are a number of stakeholders, but we can put the generation of shareholder value in the center. In this respect, the management of universities is very different. Its primary objective is not the maximization of profit, nor is it possible to convert the organizational value to a monetary measure.

Q: With a university of such standing and history, how do you balance innovation and tradition?

A: The University of Tokyo's intellectual properties are nurtured in its tradition. Also, innovations in each traditional research field continue to advance. However old they may be, it is not necessary to scrap traditions. However, to facilitate new innovations beyond the boundaries of traditional domains, it is necessary to fuse a number of traditional fields. For example, real life problems such as environmental contamination, resource depletion and so on are too complex for any single domain to deal with. Therefore, fusion of knowledge from multiple domains becomes necessary.

As an approach to fusing various compartmentalized domains, I have proposed and have been promoting what I call the "Structuring of Knowledge." Within this framework, we are articulating research trends through an initiative called Academic Overview Lectures. We first reclassified numerous segmentalized academic fields into six major domains—Material, Life, The Environment & the Human Being, Information & Mathematics, Society, and Philosophy. Distinguished lectures are given in each domain to explain cutting edge research, current focal points, and the direction of future research. These lectures are presented to freshman and sophomores, as well as dispersed to a broad audience through the internet and other media.

Another major initiative of the Structuring of Knowledge has been the establishment of the Integrated System for Sustainable Science Program (IR3S). The challenge of this new organization is to establish a new science called "Sustainability Science" by bringing together and structuring knowledge from various existing domains, toward the goal of global sustainability.

Q: How much leadership autonomy should the University's central administration give to the schools and other units within the University? What philosophy underlies your view on this?

A: At the University of Tokyo, we are promoting "Autonomous and Decentralized yet Cooperative Systems." The freedom of academic pursuits is fundamentally given by society to each individual professor's research. Indeed, we have empirical evidence that giving freedom to each researcher warrants the best outcomes in each field. Accordingly, the vast majority of the university budget--about 95%--is entrusted to the departments. However, giving complete freedom is only possible on the presupposition that each researcher has the entire picture. It is apparently not realistic in the light of segmentalization and the resulting compartmentalization of academic pursuits. This is where the leadership of the central administration becomes important in promoting the concept of cooperation. Here the use of the remaining 5% becomes important.

In short, the university and individual faculty members are under an implicit contract and each department may act as an intermediary organization. The structure is hierarchical: the central administration to departments, and departments to faculty members. In this sense, a dean may play the role of a mini-president.

Q: Is there a leadership education or leadership development program for either students or faculty at Tokyo University? If so, can you tell us a little about the program?

A: I believe that the best education is for the current leader to do his or her best as a leader and thereby act as a role model for the followers. Although we do not have a formal program dedicated to leadership education, we are actually promoting various educational reforms. Within this context, we have started an initiative called *Todai* [Tokyo University] Redesigning Educational Environment (TREE) that aims to achieve educational reforms based on a loose alliance among various departments. *UT Open Course Ware*, a free web-site for course information, came out of this initiative. We also encourage our students and faculty members to study or conduct research abroad, as well as facilitate internships in cooperation with business corporations.

Younger people look to their elders as role models. Let us think about innovation. If I am an innovator, younger people will see that this is done. That is the best way to encourage leadership in students, yet often older people talk about innovation but they do not practice it themselves.

Q: What is your philosophy regarding having your Japanese students study abroad and having foreign students study at the University of Tokyo?

A: We are promoting both having our students study abroad and having foreign students study at the University of Tokyo. We have formed bilateral student exchange programs with a number of overseas universities.

With increasing globalization, people, goods, money, and information move freely across borders. This trend will continue to accelerate. At the same time, however, it is very important to respect regional characteristics and preserve cultural diversity. The same is true for language. English is currently the global language and we need to learn it effectively. At the same time, we would like to maintain proper Japanese, which is the base of our own culture.

Q: Do you see any connection between study abroad and cultivating your students' leadership potential?

A: I am telling our students about the importance of acquiring the capability to understand others. Although there is some level of diversity in Japan, it is very important to directly experience the higher level of diversity by living overseas.

Q: What is your long-term vision for higher education in Japan?

A: The main theme for this interview is leadership. In my first formal address as president, I emphasized three things:

- knowledge to grasp the whole picture
- empathy with other people, countries, races, nature
- courage to be a front runner

I would like Japan to exercise more leadership on the world scene. Therefore, a main role for Japanese higher education providers is to cultivate world-class leaders. Japan is 60th in land size, 10th in population, and 2nd in gross domestic product (GDP). Since the Meiji restoration in 1868 when Japan opened to the outside world after 250 years of a closed society, Japan has followed the Western countries, imported their advanced technologies and reached the number two economic position.

However, recent problems include accumulation of wastes, resource depletion, environmental contaminations, and the unprecedented aging of society with a decreasing birth rate. Indeed, Japan faces various visible and potential problems ahead of the rest of the world. In a way, Japan is a forerunner of emerging problems that humankind is destined to face. It is a little ironic, but Japan has finally become an advanced nation, not only in terms of industrialization but also in terms of problems. This is certainly a handicap for Japan, but at the same time an advantage. As a matter of fact, Japan has continued to grow by not only solving various problems but also transforming them into opportunities. For example, seriously hit by two oil shocks, Japan has worked very hard and achieved the highest energy efficiency in automobiles, air conditioners and so on. Japan now accounts for less than 5% of carbon dioxide emission compared to 11% GDP. In addition, we have made substantial improvement in the quality of air and water in major cities.

Needless to say, these problems are not Japan-specific. Other countries face similar problems, and the U.S. is no exception. If we can create technologically innovative solutions to these problems, they will be the new source of Japan's international competitiveness and will prove helpful to the entire world. Therefore, we feel it is our privilege as well as our obligation to play a leading role in finding solutions and disseminating the Japanese-originated sustainable development model to the world.

The role of the University of Tokyo and other providers of higher education is to promote the structuring of knowledge and train world-class leaders to fight complex problems. The Integrated Research System for Sustainability Science (IR3S) outlined above aims to lead the way.