

Interview by Ahmad Suaedy with Hadi Winarto, Jakarta, 23 December 2013

BA, Aeronautical Engineering, University of Sydney, Colombo Plan, 1963

I was born in Rembang, a small town in Central Java. At that time Rembang only provided elementary and junior high schools, the senior high school was in Pati, the next regency. I continued my high school in State Senior High School in Pati, in the early years I lived in a boarding house for around one year, then I lived at home and took the train to go to school which was about 80 km away. I had to get up at 4 am and prepared everything, took a bath, had breakfast, then walked to the station, because the distance from home was quite far it took 15-20 minutes. That's why I had to leave home at 5 am and arrived at Rembang station before 6 as the train departed to Pati station at 6am. The distance from Pati station to the school was quite far, so I often came late. This was in the 1960s. And eventually I became the best graduate, my scores are above the minimum, 9 and 10.

Actually I had known about scholarships for studying in a foreign country since the second grade. Before that I hadn't had any desire or understanding about studying abroad. Then I heard about scholarships for studying abroad and my school had a relationship with a foreign country, if I am not mistaken it was the USA, AFS or something, and my seniors had already studied there. At that moment also, my friend from Semarang who came to school offered such a scholarship and I was asked to distribute the brochures. From that time onwards, I intended to study abroad. I became the best graduate because I was diligent and zealous. At that time I had to go to school for a day because the train back to Rembang was only available around 4 pm and school finished around 1.15 pm. Before going home, I spent the time to join activities at school. Usually, I got home at 6 pm. I had time to study after eating from 7 till 9 pm. My father usually accompanied me.

Parents' academic background?

My father had the chance to study in HBS or an educational school, but he didn't finish it since he was asked to get married. My father was only 20 back then, and my mother was 12 years old. My father had to continue working at my grandfather's jewelry shop in Semarang. After getting married, they moved to Semarang. When my mother was 13 years old, she gave birth to the first child. My eldest brother is 12 years older than me, I am the 13th child. I am very proud of my eldest brother, he had to survive while having hard time. It was war time back then, so when there was chaos in Semarang, we moved to Salatiga, then to Rembang. Only my brother stayed in Semarang and lived with the maid that had been close to our family as if she was our own family member. My brother had to make a living for himself, daily life and school. Because there were some empty rooms, he rented them as a boarding house. After that in 1961, he graduated from university, got a certificate in forestry engineering from UGM. During his study, he never asked for financial aid from my parents. He either got scholarship or paid for it himself. My fourth brother was born in Salatiga, the fifth till the last child were born in Rembang. I wanted to be like my brother who is very tough, independent, and resilient.

In 1963, I got the scholarship. I was told by the headmaster that there was scholarship. The registration was opened in Semarang and Jogja. I had to wait for my certificate which was late coming, while the registration closed in a few days. Then I asked a letter from the headmaster stating that I was a graduate and went to Semarang to register. When I arrived in DIKTI (Department of Education) Semarang, it turned out that the registration for Central Java had been closed. When I was told about that, I didn't take much time to think and went to Yogyakarta along with my mother, if I am not mistaken. When I arrived at Yogya, the registration was closed as well. But the committee said that Jakarta still would be still opened for a few days. From Yogya, I went to Semarang to prepare everything and went to Jakarta directly. Luckily, my second, third, fourth, and fifth brothers worked in a bank in Jakarta. They

already had their own houses in Jakarta. During the trip to Jakarta, I was standing the whole way. I was given a letter stating the address of a distant relative of my mother who worked at DIKTI Jakarta but lived in Bogor. I arrived in Jakarta and I stayed at my brother's house. In the morning, taking the address along, I came to Bogor alone to find the relative because my brother was busy at work. The only thing on my mind was getting the scholarship and studying abroad. When I finally found the house, I was given the office address, I wanted to register but I knew nothing. But because my desire was great, I finally reached DIKTI. When I arrived there, it turned out that there were many opportunities especially to go to Eastern Europe and Russia because at that time Soekarno had good relationship with them. Then I chose to go to Australia.

Actually my parents did not support me because they thought that we could be successful if we were doing business. The support eventually came from my grandfather, he wanted his grandchildren had wide knowledge, had high intelligence so my grandfather supported me. My father was quite rich at that time, he had jewelry shop which was quite big in Semarang. When there was a war and we moved our shop, my father's money was given to his right hand but on the way, he got into the army forces and used the money to support his needs. When he arrived at Rembang, my father opened a salt business. The selling was very difficult because we had to be an organization or economic enterprise, and my father failed in this business. After failing, my father had a cow business. He bought cows from villagers and sold them in Jakarta. My father was a very busy man, rarely at home. Once he got home, he might be angry because his business failed. Once he got many benefits, all were treated to nice meals. My mother's was busy changing nappies because she had many children to care for.

The competition to get the scholarship was not that fierce because we were in a bad condition. There were two critical moments that year. The first was getting back West Papua and the second was fighting Malaysia, around 1961. And even during senior high school, we were trained to be a military force, such as shooting, marching, etc. There were so many volunteers when we fought with Malaysia. There was one ethnic group who wanted to join Indonesia because they didn't want to be colonized by the British. At that moment, Australia also supported Malaysia, but it was an underground movement since Australia was also the ex-colony of England. At that time, some public figures such as Subandrio appeared, communists got popular and some critical events happened in Indonesia.

But those events didn't affect the selection. I chose Australia, I didn't know why. Maybe because I got some info from my headmaster or perhaps because of the lack of info. It's not like nowadays when you just need to click something in Google to know everything.

While waiting from DIKTI, I applied to UI majoring in medicine because I once heard that Indonesia lacked of doctors. I also didn't really know what I wanted to take, I just remembered Soekarno's speech. I only knew forestry major to be a forester and work in forest, but I didn't want to work in forest. And I thought that I could directly work after finishing medicine since doctors were scarce in Rembang.

After that, I got accepted in UI. And I joined the orientation as well as the classes. After a while, I got a notice from DIKTI that I passed the selection to get the scholarship. Before going to Australia, we had to live in a dorm in Pasar Minggu being indoctrinated, if I am not mistaken. We were given some preparation related to Indonesian culture and nationalism. We were taught to dance and sing.

That was around two weeks, after that we were given a vow letter stating that we would go back to Indonesia, signed by us as well as our parents to take the responsibility.

There were two groups that would depart, the first was comprised of 56 people and the second was around 12 or 14 people. I was in the first group.

We departed on 7 December [1963], taking 707 aircraft, this aircraft began to operate in 1959, and we might have been the first to take it for the Asia region. It didn't stop directly in Sydney since the power wasn't sufficient. First, we stopped in Darwin then continued to [unclear], then we went to Sydney.

When we arrived, we were welcomed by the people there. We were grouped in which one group consisted of four people. I was placed in Sydney, in an ex-military family I guess. Their job was to take care of the lift, at that time the lift was still guarded, different from that of nowadays which button can be pressed easily. At first, we wanted to complain because we, four people, had to sleep in one small room, it's not proper. We ate at the house, the food cooked by the host. Because we didn't bring lots of money for daily life. We slept over there, and in the morning the COE (Commonwealth Education Officer) picked us up, we went to the COE office. We were gathered, and were given some instructions how to eat and communicate because they thought that our language skills were lacking, as Australian English is different from the original English. But, since arriving there in December and beginning college in February, that program failed. From the COE office, we were invited to eat at the restaurants, and they showed us the restaurants providing rice, Chinese restaurants, etc. we were given money as well.

Since the course program was not yet open, we were tested directly for the university. Those failing the test should repeat the lower level similar to senior high school and repeat another year. The school provided subjects similar to senior high school such as mathematics, physics, chemistry, and English. Besides school, we had to take an English course since that was the main aim. From 70 people, 50 people passed and 20 failed. All were not senior high school graduates, some had been in university in the third semester. Before the test, we were told that the Australian government only provided scholarships for engineering. That was the contract with our government, because at that moment we needed many engineers for developing our country. The medicine program was not available. I was surprised as well, because I knew nothing about engineering. Luckily there was someone telling me about engineering, and he also told me that Bung Karno wanted to build an aeroplane industry in Bandung, and all had been prepared that year. Then I was thinking of taking aviation engineering, because there would be jobs available when I graduated. That was my thought.

In the first year, I took machine engineering because the university didn't offer aviation. At that time I was in South Wales University. Because of my desire to take aviation and there was such a course at the University of Sydney, I asked to change the university and the university agreed because I was still in the beginning of the term so I would not have many to catch up, because in the first term all courses were the same, especially for engineering students who would take specialization in the third semester. And, in fact, there was only me who took aviation (the Indonesian who got the scholarship). Before me there was actually a senior, because aviation at that time was not that popular, wasn't that useful, because even Australia only had one aviation factory, it was the small one, unlike the big ones in USA and the planes weren't big as well. In my batch, there were only 16 people. That was the biggest number. In fact, Australia didn't create the components of the plane but assembled the components.

After I graduated, I was given the chance for the term of doing an internship. I was looking for experience for 1 year. After finding a job, I applied in a company but I was rejected because it was related to national secrets, then I applied for the development department in the same company, but the response was the same. It was only for Indonesian people, the certificate hadn't been out yet, only the notice from the university. It was very difficult to find a job related to my study, unlike the electrical engineering as they could work in National Electricity Company, in factories. I worked as a teacher, science teacher in schools as a freelance. Because there were a few teachers in Australia especially science teachers, I taught in some schools and I did it for 1 year. After finishing my teaching duty, I intended to come

back to Indonesia, I sent a letter to DIKTI, asking about the guarantee that those getting scholarships would be given jobs, but there was no reply.

Finally, there were friends telling me that they had come to DIKTI and the condition had changed, they were asked to find jobs on their own. One even got scolded, "You have been given scholarship, now you're asking for job too, you need to find it yourself." At that time, the Australian government offered job vacancies in Pertamina, but it didn't fit in my field so I didn't take it.

My wife is Indonesian, her father is from Manadi and her mother is Australian. Her parents live in Jakarta while her sister and her live here. My wife taught at the University of Sydney as an Indonesian teacher. I knew her since I was in college, she was a junior and we were in the same organization, PBI, I was the leader and she was the secretary.

I got married after my wife had just graduated, in 1970. When I was still in Australia, I became a factory worker once, it was really a laborer. I even became a conductor on a bus. At that moment a bus still needed a conductor, but now it doesn't. I knew the roads and streets in Sydney very well, many Indonesian students did the same, not only me. I also sold fans, the big fans for a company, I was the marketing agent. I did this job over a long term, yet in the first six months I got bored because my knowledge wasn't applicable. So I decided to take my masters degree, and I discussed with the the company that I wanted to continue my study, and they gave permission. I studied on the weekend because the company only gave 12 hours.

Finally, I took my master degree back to my first almamater in New South Wales. Because of my achievement in research there was a lecturer offering a research assistant position. There were 2 types of assistant, the first was part time and the other was permanent for the university, the permanent got much better payment than the part timer. My MA research was about aora dynamics turbulence. Besides being an assistant I was asked to be a tutor for new students. It was around 1973-1974. I became a tutor for a year and I finished my master in 1973. I still had another year long contract to be a tutor when my supervisor offered me a PhD program. There was research underway related to jet noise, because my supervisor handled many projects, and cooperated with France, my master research would be related to turbulence. I was asked to develop it more because it was new and needed further development, but he had his own project so that he handed it to me and gave me some books and asked me to find them. After around 9 months I had studied the suggested books by my supervisor.

I began my PhD in 1975, in the school is school of mechanical industrial and engineering. I got a mandate from my professor and sent it to the head of school, who gave me a Fellowship. I was asked to teach, but not as a lecturer. I was given 22 hours as tutor, and it's about 3.5 years, and the Fellowship is 12 hours and 4 years. The Fellowship was for the PhD candidates who didn't have enough money. At first, I told my supervisor that I wanted one giving more salary because I had family, my wife and my kid, so I was given a Fellowship of which salary was quite big, while the research salary wasn't as big as that. It had to be finished in 4 years. In 1977, I had my second child and the Fellowship ended in 1978. I finished PhD in 1979, but I still worked as a part timer while finishing my PhD. At that time, I was invited to take care of frida dynamics laboratorium. The job was to design an experiment for students and conduct some research.

In 1981, a friend from Indonesia told me that Habibie was looking for me. I didn't know who Habibie was, but he was looking for the young engineers who specialized in aviation. He told me that Habibie was a minister graduated from Germany, and Habibie was taking care of the aircraft industry in Bandung. Because of the situation, the information from outside was still limited and since I started my study I had only been back to Indonesia in 1974 and 1978 along with my wife.

Incidentally, Habibie came to the University of New South Wales from Komjen to gather Indonesian students. He presented his mission and vision and work on the aircraft industry at that moment. He expected the students to cooperate with him. I was interested and had a chat there, so I could know how the industry was.

In 1981, I had a plan to take a holiday in Indonesia. My friend suggested that I send a letter to Habibie as Minister [for Technology]. I sent it, and he replied and said to come to Indonesia and visit the Protanio factory in Bandung. It was still small and the cabin was leaking, but they still could produce an airplane. I was impressed by Indonesia and the official said it was an important project and met the engineers. My coming back would be great. I was confused if I went back to Indonesia as I had never worked there and the corruption was everywhere, but I thought there would be no corruption in this industry. There, we had a chat with Mr. Habibie too and he was talking about his vision and mission, and those were logical, from the reverse triangle, from the end then coming to the start. It usually begins with the research, the design then selling, but it was reversed - making the airplane from others' designs, researching, and selling.

There were airplanes that had been bought, there were 2 airplanes from Kasa 212, the first was still in assembly and the other was finished. There was a Kasa technician, the components were made by Kasa and we assembled those. The other technician was from our side. After we were successful in the assembly, then we made our own components. At that time, more than 100 pieces were sold and we assembled those.

When I gave it a second thought, I thought Habibie was too ambitious and the human resources were lacking. We were forced to take 400 foreign technicians. The human resources were not enough, but he insisted. The first time I was there, Mr. Habibie gave it to the second person because he wasn't a doctor. There were many personal conflicts. Then I was transferred to Serpong, to support the airplane technology there, the laboratory was there, because all the airplanes were tested there, static and dynamic, the safety test, and the durability, but an air tunnel test wasn't available at that moment. It was the same there, they were young engineers preparing themselves, but there was nothing to do. They just waited to be sent to the Netherlands. I knew nothing, the activity was uncertain, I said I didn't want to be there. I told Mr. Habibie that this was the situation. The contract stated that I had to be a civil servant and the salary was small.

The salary was half that of Australia. My salary in Indonesia was from many jobs because at that time I was stupid, I didn't know how to work in Indonesia, there was no contract. Mr. Habibie was good at making an impression on me - I wanted to help Indonesia.

In 1984, I went back to Indonesia for a few months, then I came to IPTN, the head there didn't have jobs for me too, then he asked me, 'your major was aerodynamics?', and I was invited to meet with people there who had graduated from Germany and specialized in aerodynamics. There was no job there. There was no position and title so I made one on my own, the expert assistant for aerodynamics technology.

This professor had an office in Nutarium, I was asked to stay there.

In 1985, I was ordered to make a sub-directory for aerodynamics completion, to recruit people, graduates from ITB in that year. I was asked to recruit, so I did that. Graduates from physics and mathematics were trained there. From that, I began to be recognised by the students from ITB, Brawijaya, many of them came to conduct researches and many experts of aviation came too.

My field was aerodynamics, the tendency at that time was air-tuned, which was very expensive. I wanted to create a team with skills in computer technology to press the price of the air tunnel. Why did it have to be aerodynamics? Because it was the support.

So, it was the beginning, as with the architecture of a building. It was very important, but there wasn't available at that time. I myself designed and trained the human resources, most were taken from my members and designated as the head division. I was at that time designated by Mr Habibie to develop aerodynamics.

After a year, many of my members were taken. There were 40 in aerodynamics, and the design team also.

The office closed in 1998, and ended in 2000, after that it was a mess. I was looking for another job. IPTN was never intended to be a business. It was the package for the technology. The biggest mistake was that the infrastructure didn't support it. It was around 1987.

Around 1986, I felt comfortable but there was frustration as well. In terms of knowledge, I learned a lot. It was like studying. I learned a lot from the experience there. I felt frustrated because a large computerization system wasn't available, even in ITB or UI. Because computerization could be developed everywhere, not only in aviation but also marine and meteorology.

The future of IPTN as well as the product, N250, I wasn't sure it could develop well because Habibie as the conceptor broke the plan. There should have been 4 stages of development. First, learning how to assemble in 10 years, the next 10 years making the components, then developing the design in 10 years, and the last ten years the conducting research and development. Under Habibie in Indonesia, assembling and designing which should have been done in 20 years were only given 3 years, from 1976 till 1979.

N250 was actually the project of Soeharto, the political project and they thought that we would be acknowledged by other nations if we had our own airplane and assembled them on our own. If I may give my opinion, I think that N250 was a failure, they didn't think of the future, whether it fitted in the market, good or not, efficiencies or not. And I think that N250 is not yet proper. So, they spent billions of citizen's money for something beyond their capacity. If we could manage from the beginning, we didn't need 400 foreign technicians to help our assembly. We didn't need to delegate people to learn or take courses for months in foreign countries, which took so much money. If the implementation was the same as the original concept which should go through 4 stages, and it wasn't cut from 20 years into 3 years, maybe the future of the airplane industry in Indonesia would have progressed further. Because they didn't think of the quality, but they were strict to the deadlines and usability.

My last position in IPTN was deputy director. It was because the special assistant for the first director, Professor Hayono Djoyo, professor from ITB, the specialization was aero elasticity. He was the right hand of Habibie. He was the head of 5 other departments including aerodynamics, and I was the head of it.

The salary in IPTN was small, it's so different from that of Australia, so they were so happy if there was a project and submitted a proposal, they wished they could go to foreign country. By doing so, they could build fences and travel.

If I knew it would turn out this way, I would never have moved to Indonesia and worked here, but it's okay. There was much knowledge I received. Regarding the salary, from the start, I got the information from Mr Habibie for the official contract in IPTN, the salary was important but the most important was our satisfaction while completing jobs.

After that, I was offered job by a friend in Australia. I was asked to look at an advertisement. Then I looked at the requirements and I sent the curriculum vitae. The vacancy was in Australia. I was waiting for the interview, I hoped I would be interviewed there, but I got a call for

interview. They said that they needed an aerodynamics specialist from IPTN, and they said wanted me. My friend said that I was in the shortlist, I was one from two that had been accepted. The other had been working in that field for 12 years.

There were two offers, the first was to become a senior lecturer and the second was assistant of professor, and I was interested to be an assistant professor yet they wanted me to be senior lecturer. But I decided to be an assistant professor. It was in Melbourne, RMIT University. It wasn't popular but the aerospace major was acknowledged widely and was quite famous. It was in city then moved to a rented building in Bundorra. I have spent three years there. From 2011, I became the director of the department.

A while after joining, I was promoted to professor. My activity these days, I was the coordinator of an electronic mailing group in Indonesia. The members are all who want to learn electrical engineering, I wrote many articles there, which are helpful for the engineer. I still want to write academic papers, if I can, I want to write a book such as a physics book, because physics is so under developed inside Indonesia.

[END]