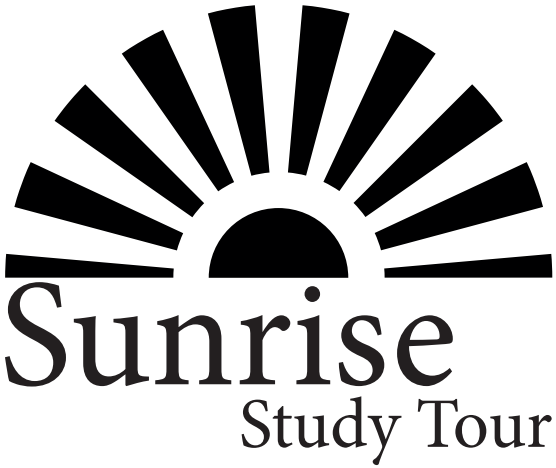
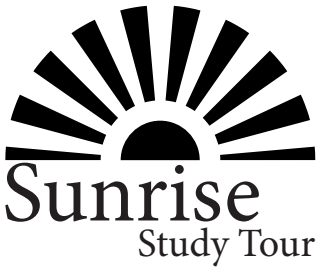


2011

Final Report

Electrotechnische Vereeniging
Delft, The Netherlands
Since 1906



Sunrise Study Tour - Final Report

Sunrise Study Tour Committee

S.R. (Stephan) Groot - President
J.W. (Joost) van Driel - Secretary
J.J. (Joost) Kerpels - Treasurer
I.M. (Imke) Zimmerling - Commissioner
R.C. (Rico) van Dongen - Commissioner

Final Report Committee

M.E. (Matthijs) Weskin - Chief Editor
R.A. (Richard) Spijkers - Secretary
G.J. (Jan) Christiaanse - Commissioner
T. (Tim) Feenstra - Commissioner

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Preface

Clichés wouldn't be clichés, if they didn't possess some sense of truth. For example, the phrase "to all good things, must come an end", is one cliché I think all participants of the Sunrise Study Tour would acknowledge, after experiencing a fantastic study tour. This final report marks the last deliverable of the study tour and therefore it is time to look back!

In the preface of the Preliminary Report I predicted that the Sunrise Study Tour would be characterized by many uncertainties and enriching experiences. Again a statement I guess all participants can vouch for. Walking, shivering from a cold night, over the night market of the Chinese capital, wondering why on earth anyone would voluntarily eat a scorpion on a wooden stick. Waiting in the back office of a large international office to get cleared by security among many other visitors. Yet another request for a photo. Swapping the traditional shower for a steaming hot bath tub, to be shared with some of your peers. And I can continue these recital of randomly chosen associations of the Sunrise Study Tour for quite some time… brings back some good memories!

Finally, I want to seize this opportunity to thank all the companies, universities and referrals in the Netherlands for making this tour a study tour, instead of leisure trip. Some special attention I would like to draw to our three guiding professors: professor Beenakker, professor Smit and professor French. All three sacrificed their valuable time and travelled to the other side of the world to accompany us. Last, I believe the group of participants is a very important factor in the success of a study tour. Therefore, I want to seize this opportunity to show my appreciation for the participants and their overall understanding of organisational challenges, their interesting questions, their willingness to occasionally keep a fellow participant awake and the occasional teasing to keep the committee focused!

On behalf of the Study Tour Committee,

Stephan Groot
President of the Sunrise Study Tour 2011

Final Report Committee

This report is written by the ETV Study Tour subcommittee, the Final Report Committee consisting of:

M.E. (Matthijs) Weskin - Chief Editor
R.A. (Richard) Spijkers - Secretary
G.J. (Jan) Christiaanse - Commissioner
T. (Tim) Feenstra - Commissioner

Editorial

Half a year before the Sunrise Study all the participants looked forward to the moment they walked into the gate at Schiphol Airport to leave The Netherlands for four weeks. In these four weeks we visited seven big cities in three countries in Eastern Asia. It is very hard to enclose all the experiences in words. Some experiences are not explainable.

The Final Report Committee tried hard to bundle all the stories and experiences of the participants, the professors and the organizing committee. Besides the tour itself, all the participants had to perform a case study for sponsors. Every participant has written a simple report about the case study. These reports were found in Part IV of this book.

With the busy schedule and the lots of kilometres travelled it felt like we had been travelling for a couple of months, but it was only one month. Despite of the busy schedule, everybody experienced it as a wonderful tour. The overall reaction was 'awesome!', so was it a success? Absolutely!

I would recommend everybody to visit Eastern Asia. There is nothing left of your prejudices when you stay in Asia for a longer period. It is a very pleasant culture and the Asians welcome you with everything they have!

Matthijs Weskin
Chief Editor Final Report Committee

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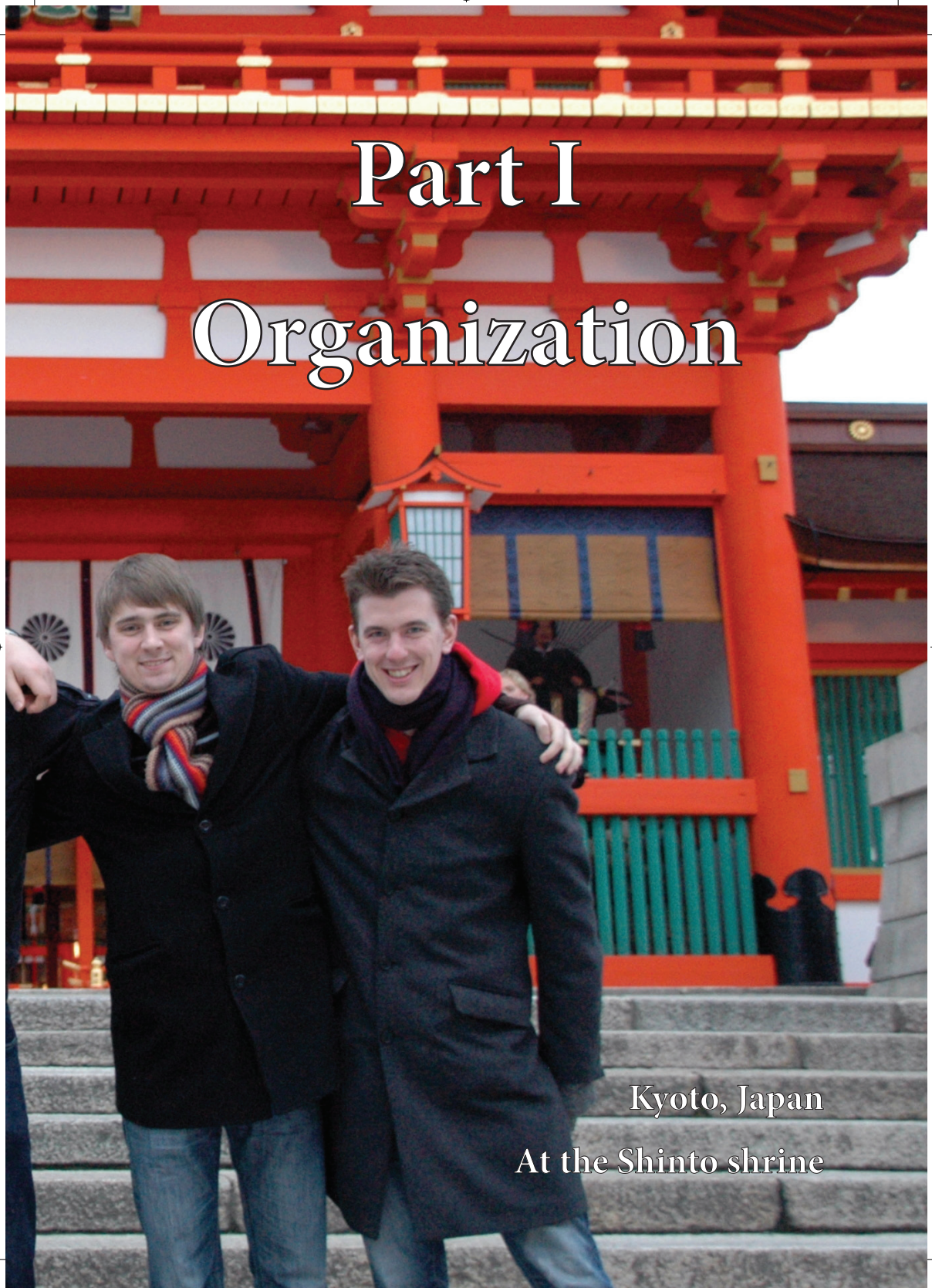
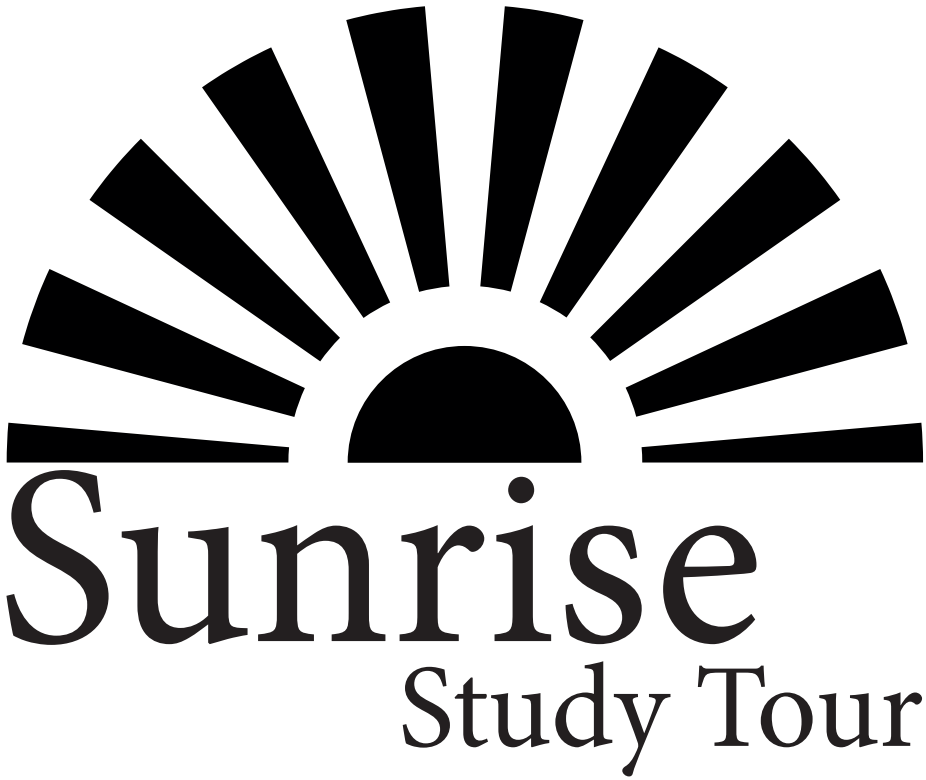
Organization



Kyoto, Japan

At the Shinto shrine

Sunrise Study Tour Committee



S.R. Groot	-	President
J.W. van Driel	-	Secretary
J.J. Kerpels	-	Treasurer
I.M. Zimmerling	-	Commissioner
R.C. van Dongen	-	Commissioner

Committee of Recommendation

The people in this board recognize the value and importance of the "Sunrise Study Tour".

University:

- **Prof.ir. K.C.A.M. Luyben**
  Rector Magnificus of Delft University of Technology
- **Prof.dr.ir. R.H.J. Fasteneau**
  Dean of the Faculty of Electrical Engineering, Mathematics and Computer Science at the Delft University of Technology
- **Prof.dr. C.I.M. Beenakker**
  Scientific Director Delft Institute of Microsystems and Nanoelectronics (DIMES)
  Professor Electronic Components, Technology and Materials at the Delft University of Technology
- **Prof.dr.ir L.P. Ligthart**
  Former Director of the International Research Centre for Telecommunications and Radar of the Delft University of Technology
- **Prof.dr. P.J. French**
  Head of the Electronic Instrumentation Laboratory at Delft University of Technology
- **Prof.dr. J.J. Smit**
  Professor High Voltage Technology and Management at Delft University of Technology

Industry:

- **Th.M. Cohn**
  Former Chief Executive Officer of Siemens Nederland N.V.
  Member of the Supervisory board at KEMA
- **G.J. Edelijn**
  Chairman and Chief Executive Officer of Thales Nederland B.V.

Institutes:

- **Ing. M.C.J. van Pernis**
  Chairman of the Royal Institute of Engineers of the Netherlands KIVI NIRIA
  Former Chief Executive Officer of Siemens Nederland N.V

Politics:

- **Mr.drs. G.A.A. Verkerk**
  Mayor of the city of Delft
- **Ms. M. Bot**
  Consulate General of the Netherlands in Japan

Realization Study Tour

The committee has been assembled in June 2010. We were all interested in organizing the study tour, some of us had already experienced the study tour to Israel in 2008 and some of us had not. We all had experience in the board and/or committees of the ETV, in that way we were convinced that we could organize this four weeks counting study tour.

During our first meeting we had to divide all of the committee positions, like the president and treasurer. That was actually pretty easy, because Stephan immediately stepped forward to be the president, Joost van Driel wanted to be the secretary, Joost Kerpels the treasurer (because he had a lot of experience in that field) and Rico and Imke became commissioners. Eventually Rico became the Vice President, because of the absence of Stephan due to an internship in Japan.

Every project starts with a planning and the track towards the Study Tour was not different from that. A subscription deadline, go/no-go and the date of the study tour itself were easily planned. In September we began to think about what different countries we could visit. We took all countries in consideration, but also looked at what the previous study tours had as destinations. Considering that, it did not make sense to go to the American continent, because the Columbus Study Tour had visited it in 2006, the previous 'Lustrumjaar' of the ETV. The countries that we did consider were India, South Africa, Australia, New Zealand and a lot of Asian countries.

With these ideas we went to some professors of the Electrical Engineering department at the TU Delft. Most of them were really enthusiastic about the idea of going on a study tour (as a student) and they gave us many ideas of companies we could visit. Some of them even wanted

F.l.t.r.: Imke Zimmerling, Joost van Driel, Stephan Groot, Joost Kerpels, Rico van Dongen

to join us to the countries that we would visit. Unfortunately, there were not much contacts in the countries that were just mentioned by name, but there were a lot of contacts in China, Korea and Japan. Based on that, we decided to go to China, Korea and Japan.

That was the moment that we had to decide which cities we wanted to visit, because especially China is very large and it has a lot of big cities with a lot of industry. When we considered the professors contacts again, we decided to go to Beijing, Shanghai and Hong Kong in China, Seoul in Korea and Osaka and Tokyo in Japan. With these cities, we set up a promotional campaign to increase the interest of the students. The track ended with a promotional lecture for the interested students. After that, the students were able to subscribe themselves for participation. The maximum amount of participants was set at 24, because of its ideal divisibility and manageability. Eventually we had 24 subscriptions, however, there were 2 resignations after a while, which made the total amount of participants 22.

Having sorted the destinations, we could start arranging the excursions, tickets and hotels. We divided ourselves in 'City Teams', to avoid concentrating on all of the cities. A daily planning for the Study Tour was created to have a good insight of what was already arranged and what wasn't yet. In that planning we made a distinction between travelling days, excursion days, cultural days and free days. We tried to plan two excursion days and at least one cultural or free day, meaning that we should stay in every city for at least three days. That suited our program very well and it was only for Shenzhen and Hong Kong that this did not work out, but the Hong Kong days were actually the free days of Shenzhen…

After a while, in June 2011, we had arrived at the Go/No-Go date and we decided to go for it. The tickets were already ordered, some students had already arranged their cases and a lot of excursions had been set up. June was also the moment for the first subcommittee to start off. The preliminary report had to be created. Just like we did for the cities, the members of the Study Tour committee were each responsible for different subcommittees. The other three subcommittees were responsible for the photos, a daily journal during our tour and the Final Report; these did not start until the beginning of the tour. It was in July 2011 that we had been working on the organization for over a year and it was taking considerable shapes already and a lot of participants were working on their cases in the summer holidays.

It looked like the Study Tour came increasingly closer, but it just came linear closer. In the last couple of weeks we were very busy organizing. We had to create a very detailed planning for all of the weeks. And that was something very hard to do, but it turned out to be very helpful. It consisted of all subway rides (where to get on, where to transfer and where to get off), all addresses and everything else that is useful during the travel. We had also created some booklets for the participants and the professors. The problem with that was that it had to be based on the detailed planning and it was not finished until the last week before the tour. So eventually, the preparatory work of 1,5 years had an intensity spike in the last week.

The last week was not just an hectic week for us, it was also a preparatory week for the Study Tour. Several speakers gave us an introduction to the countries that we should visit, and they were all willingly to tell us all about it. Another activity in the preliminary week was the participants dinner. The dinner was meant for the participants to get to know each other even better just days before our departure. We deliberately chose our restaurant to serve Asian food, to give everyone the opportunity to get used to the cuisine and eating with chopsticks.

A lot of people told us that it was a great opportunity to go to these countries and see these cultures. A big part of all the production worldwide is done in Asia and more and more design is also done in these countries, instead of just production (or copying). That change of thought made it extra interesting for us to see the companies there to broaden our views.

The participants were very cooperative with us, paying in time (mostly), listening well and very obedient. Stating that, we thank the participants for it.

Preliminary report committee

The preliminary report committee was responsible for publishing the preliminary report. This report contained more information about which countries and companies we would visit and information about the Electrotechnische Vereeeniging and the TU Delft. The people responsible for this preliminary report were:

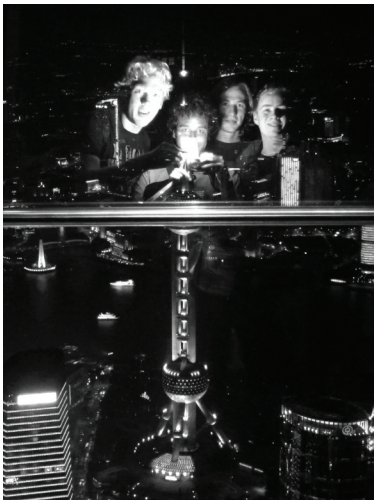
Barry Strengholt	-	Chief Editor
Joost Geelhoed	-	Secretary
Robbert Lodder	-	Commissioner
Daan Schellekens	-	Commissioner

Final report committee

The final report committee was responsible for publishing this final report. The people responsible for this final report were:

Matthijs Weskin	-	Chief Editor
Richard Spijkers	-	Secretary
Jan Christiaanse	-	Commissioner
Tim Feenstra	-	Commissioner

Photography committee



The photography committee made pictures of everything during our visits to companies or during cultural activities. Armed with good camera's, they made great pictures of our study trip. Most, if not all, pictures you find in this book are made by this committee.

Rolf Bilderbeek
Wouter Brevet
Stephan van 't Hof
Lennart Klaver

Diary committee

The diary committee was responsible for writing articles about our visits and excursions. They published this online during our study trip. They have also written the parts about the visits and excursions in this book. It consisted of the following people:

Jesper van Beek
Alexander de Moes
Jeroen Ouweneel
Frank Teunisse
Tom Verboon

Symposium

The preliminary week has taken off with a great afternoon symposium. Four prominent speakers informed the participants about the scheduled countries subsequently. Professor Segers closed the afternoon with a convincing speech about the azianisation of the world. In fact, the program did not end in the lecture room, the participants finished off with a small drink in /Pub.

The first speaker was not just an ordinary volunteer with China as a hobby. In fact, the first speaker was the Chief Executive Officer of TU Delft, former ambassador of the Netherlands in the People republic of China Dirk-Jan van den Berg. Since Van den Berg is still actively involved in Chinese interests for the Dutch government, the information was presented at a lively pace. Based on China's many challenges China is facing, the CEO led us from Energy to Environment. He also told us the impact of Aging and Inequality on the citizens of China. The government is well aware of these issues. Therefore, China has to maintain a stable economic growth rate, but should also invest in the quality of the growth, to be able to overcome Aging in the near future. After all, Van den Berg believes China is well underway. To the participants he concluded to show respect to the Chinese at anytime, and do not forget to always receive gifts or business cards with both hands.

Jerôme de Wit is a PhD in Korean studies. He grabbed the particpants attention with a fascinating story about the North and South Korea history, and the incredible role the United States has played. The U.S. is to some extend an inspiration for the Korean, while politically a counter policy is followed. The South Korean people, we are not visiting North, are very ambitious students.

The parents of the students fully support them financially. Unfortunately not everyone can make it to the best universities and as a consequence South-Korea opened many more universities. As a result, too many highly educated people have entered the labour market and Master's degrees devaluated. South Korea is a consumer society where people work very hard to earn money for the newest smart phones. De Wit says working from 5 AM to midnight is not exceptional. If employees finished earlier, they usually go drinking with their colleagues until late. We will definitely notice this phenomenon on the streets.

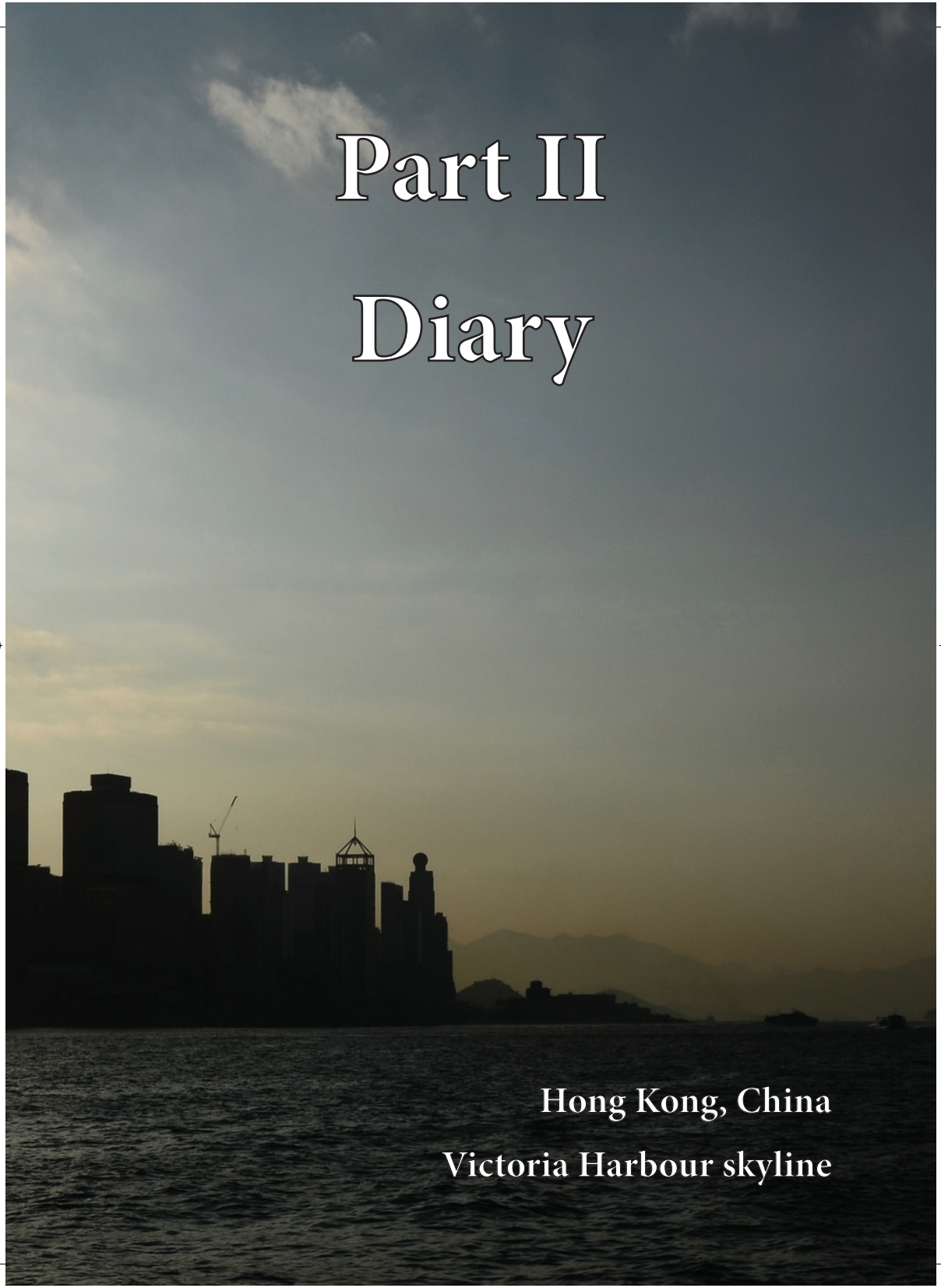
The Japanese embassy in the Netherlands planned an official visit to our faculty. For Japan, Netherlands has been a very important trade partner for over 400 years. Today, the Dutch import Japanese cars and printers. In return, the Japanese buy electric machinery from us. Japan has been in a recession for over 15 years. The recent earth quake had a major impact on

the political climate as well. The economy is recovering quite quickly, while Japan is searching for alternative energy sources. In the meantime the Tokyo area is saving up to 18% in energy consumption. Pictures showed how they achieve that. The semi-Dutch/British representative of the embassy told us not to try bowing to show respect to locals. We can easily made a mistake, and insult the conversation partner. We can better show respect by shaking hands. Also, common Japanese words have been studied. A hand out will go with us in the air plane from South-Korea to Japan. In a karaoke bar, we might better choose for English.

The final speech was by professor Segers from the Rijksuniversiteit Groningen. He called his talk the Wild East and the Inevitable Asianization of the World. The professor was strongly convinced that the centre of gravity of the world is moving from the west to the east. He admired our travelling schedule and states that especially from a technological point of view the chosen three countries are supreme. Huawei in China, Samsung in South-Korea and Toyota in Japan are giants. At that stage he did not know we are going for two out of three. Today it is totally clear for the professor that the Anglo American and Rhineland economic models fail, while the Asian model still shows growth. This is partly thanks to the size of the internal markets they supply. The 'real game' in Asia is hardly and inadequately covered by the Western press. After the professor brought the information extremely convincing, it was time for arguments. Although time was limited, Segers explained that it characterizes Japan that half Europe drives in Japanese cars. This cannot be considered normal; this is a great performance. Within a couple of years, Chinese cars will dominate our streets. The professor concluded by saying that although Asian countries are active in different politics, economically the countries are definitely joined strongly.

Part II

Diary



Hong Kong, China

Victoria Harbour skyline

Day-to-day program

Day 1: Saterday, 19 November 2011
Amsterdam - Beijing, China
Departure day

Day 2: Sunday, 20 November 2011
Beijing, China
First Impressions

Day 3: Monday, 21 November 2011
Beijing, China
Summer Palace & Research Center

Day 4: Tuesday, 22 November 2011
Beijing, China
Tsinghua University & Dutch embassy

Day 5: Wednesday, 23 November 2011
Beijing, China
HVDC

Day 6: Thursday, 24 November 2011
Beijing, China
Great wall of China

Day 7: Friday, 25 November 2011
Beijing, China
Lenovo's gadgets

Day 8: Saturday, 26 November 2011
Beijing - Shanghai, China
To Shanghai

Day 9: Sunday, 27 November 2011
Shanghai, China
Venice of the East

Day 10: Monday, 28 November 2011
Shanghai, China
Micro and macro

Day 11: Tuesday, 29 November 2011
Shanghai, China
Research in Shanghai

Day 12: Wednesday, 30 November 2011
Shanghai - Shenzhen, China
We're going to Shenzen!

Day 13: Thursday, 1 December 2011
Shenzhen, China
Foxconn

Day 14: Friday, 2 December 2011
Shenzhen, China
Goldway & Tsinghua University

Day 15: Saterday, 3 December 2011
Shenzhen - Hong Kong, China
Relaxing in Hong Kong

Day 16: Sunday, 4 December 2011
Hong Kong, China
Rest in Hong Kong

Day 17: Monday, 5 December 2011
Hong Kong - Seoul, South Korea
On to Seoul

Day 18: Tuesday, 6 December 2011
Seoul, South Korea
Samsung & Neso

Day 19: Wednesday, 7 December 2011
Seoul, South Korea
Free day in Seoul

Day 20: Thursday, 8 December 2011
Seoul, South Korea
Yonsei University & Hyundai

Day 21: Friday, 9 December 2011
Seoul - Osaka, Japan
To Japan!

Day 22: Saturday, 10 December 2011
Osaka, Japan
Cultural Kyoto

Day 23: Sunday, 11 December 2011
Osaka, Japan
A day off in Osaka

Day 24: Monday, 12 December 2011
Osaka, Japan
Panasonic batteries

Day 25: Tuesday, 13 December 2011
Osaka, Japan
Changing of the scholary guard

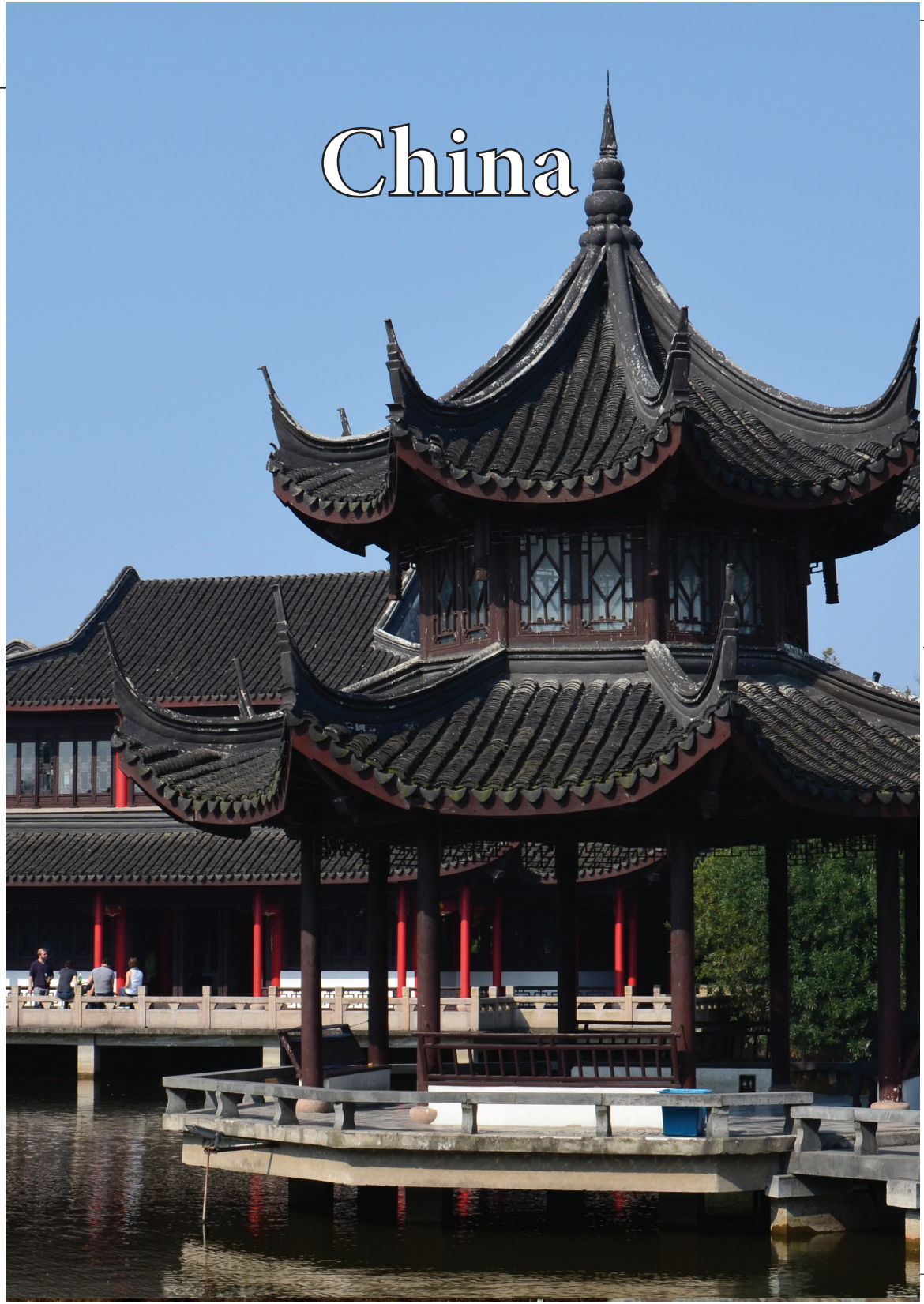
Day 26: Wednesday, 14 December 2011
Osaka - Tokyo, Japan
Tokyo, I'm on my way!

Day 27: Thursday, 15 December 2011
Tokyo, Japan
Nissan & Tokyo University

Day 28: Friday, 16 December 2011
Tokyo, Japan
NEC

Day 29: Saturday, 17 December 2011
Tokyo, Japan
The final day

China



Day 1: Departure day

Saterday, 19 November 2011

The 'Meeting point' was the suitably named location where we all met at Schiphol airport. One by one the participants arrived: some with parents, some with their girlfriend and others alone. When everybody was present, Adriaal Taal -the president of the ETV- told us how proud he is of the traditional ETV Study Tours. He concluded his speech with a toast, with the traditional ETV drink "vlek" with all of us.

After the speech all participants posed for the group picture and had time to say a final goodbye to their beloved. Then it was really time to check-in. Behind the customs the first excursions of our tour already started, as almost everybody directly went to the electronic shop. Although everyone found their way at Schiphol thereafter, within an hour everybody automatically found the group again at the Mc Donald's. Before entering the plane, there was another attraction, the body scanner. Although some nice questions arose about the used technique, there was no one who actually dared to ask the customs, for example, what frequency was used for the scanning.

In the airplane the group was seated pretty close to each other. As there is a seven hour time difference, soon after dinner the participants tried to get some sleep. Unfortunately only a few succeeded and for them the day ended somewhere above Russia.

Day 2: First Impressions

Sunday, 20 November 2011

After having flown for a little over 9 hours, we arrived at the very first city of the study tour: Beijing. Not the least of cities, since as capital of the People's Republic of China it houses over nineteen and a half million citizens – and as of today twenty-two Dutch students extra, of course.

The pilots welcomed us to the Orient, and in response everyone got their belongings from the plane departed to the airport. It took very little time for us to meet the first familiar face, since right after going through the baggage claim, honorary ETV member and first of the accompanying professors Kees Beenakker was already awaiting us, ready to bring us to what for the first couple of days would be as close to home as any: the Sunrise hostel.

The Sunrise hostel is situated in quite a stereotypical district of Beijing: small street blocks separated by big ones, a lot of very small family-owned shops and an electricity supply system which would cause any decent Electrical Engineer to have a sudden heart attack. As for the hostel itself, the rooms are "very efficiently furnished", yet as everyone has a bed and access to a shower, it's more than enough to ensure a good night's sleep and a fresh face in the morning.

Right after unpacking and setting up the rooms, and in spite of the tiresome flight, most of the group decided to check out one of the major cultural sites in Beijing – the Forbidden City. Although not all of us could get into the actual Forbidden City, the magnificently large 'driveway' leading up to it and the adjacent park were already very impressive in itself.

After this tip of the cultural iceberg, we returned home to drink a beer and grab a bite to eat. It had been a day of first impressions, as we discovered the vastness of Beijing, experienced real Chinese food and found that Chinese can actually be quite less decent than you might think. With all of this grinding in the back of all our heads and after more than 27 hours of being awake, it was time to get a well deserved sleep.

Day 3: Summer Palace & Research Center

Monday, 21 November 2011

After everybody was awake at 09:00, we soon realized the jet lag still wasn't gone. The 27 hours being awake had made an impact. Nevertheless, the whole group departed after breakfast to the "summer palace", which is the summer residence of the former Chinese Emperors. Nowadays it is a tourist attraction and official UNESCO heritage.

Arriving at the summer palace, we entered using the northern gate. After struggling through all the local salesmen, we saw several ancient Chinese buildings which each had a special purpose. There was a 'wisdom temple', a 'hall that could dispel the clouds' and several corridors which had special meanings. The morning had brought some nice cultural sightseeing.

We left the summer palace through the 'Western gate' where professor Beenakker was waiting to brings us to the "TU Delft/Beijing Research Centre". There we could witness the opening of this facility which is great example of cooperation between The Netherlands and China, respectively Delft and Beijing. After the speeches of several professors, PhD-students and the Dutch ambassador the ceremony was completed. Next, three of our students played a quiz against some Chinese students. The quiz was about cultural properties of the Netherlands and China. Unfortunately our team lost the quiz with 13 - 14. Nevertheless it was a joyful afternoon and since everybody was pretty hungry, we all went to grab some dinner.

We were treated to a banquet that was prepared with several different types of food. Some dishes looked a little weird but tasted great and some looked good but tasted rather peculiar. After dinner the evening program could begin. Our hosts prepared a cultural show with music and songs which they performed at their theatre. We also performed some Dutch songs and invited some Chinese girls to dance with us on their music. Everything resulted in a cosy evening and a good integration between Chinese and Dutch students.

After the cultural show, we went back to the hostel and prepared for an evening out on town. We went to "San Li Tun bar street", where a major part of the Beijing nightlife can be found. Until late we partied and finished in the E-log bar, where we cleaned them out, because they had an all-you-can-drink offer. With this action we finished a great third day of our study tour. Although that's what most of us thought, as some had to wake up during the night because of an extra bathroom visit, and although some people had some difficulties with this, we all survived to see day four.

Day 4: Tsinghua University & Dutch embassy

Tuesday, 22 November 2011

We woke up at eight and after a nice breakfast we took the subway to Tsinghua university. After an intense subway trip, we arrived at Tsinghua university and we were welcomed by professor Lui, who gave a presentation about the university. He talked about the history, the different departments and the campus. After the presentation, some students gave us a tour through the campus and we got to take a group picture in front of the electrical engineering faculty. We then had a delicious meal in the international student's restaurant. After we had filled our bellies, we continued our tour through the campus. We passed the soccer fields and had a brief stop at the shopping mall of the campus. The mall had a post office, a bank and a dry cleaner.

The tour continued with new guides, who showed us the library, the museum and the main building that resembles the MIT main hall and the pantheon in Rome. We took another group picture in front of the old campus gate and the tour ended In front of a temple.

Our next stop was the Dutch embassy. It is located in the embassy area, which contains all the embassies in China. We were welcomed by the head of the science and engineering department of the Dutch Embassy. He spoke about the importance of relations with China and the way they invested in Chinese knowledge and education. After we drank some beer, the people from the embassy brought us to the pizzeria. The best one in Beijing in the most luxurious area of the city.

We returned to the hostel, were we laid our aching feet to rest and fell asleep.

Day 5: HVDC

Wednesday, 23 November 2011

Today a company visit had been scheduled that was especially interesting for the guys from the Master's degree Electrical Power Engineering. Only the driver was informed about the actual location of the State Grid Corporation of China. Furthermore, photos were not allowed to be taken. China has four of these huge test sites. The site close to Beijing was specialised in high voltage DC transmission lines (HVDC). The more kilovolts that came across, the larger the smiles that appeared on the power engineers' faces. Also the other students understood it was pretty massive achievement that China has over 600 km of 1 MV ultra high voltage transmission lines operational since 2009.

On the DC site, the guide showed us the so-called pollution and environment laboratory. This lab had a co-located metallic canned chamber where insulators are being tested for heavy weather conditions. The chamber has equipment to test for pollution, rain spray and ice covering. Another interesting object was the dynamic testing tower. They revealed that they plant different trees right underneath the super ultra high voltage transmission lines. Above all else, they even told us they have sheep, pigs and chicken walking in the artificial surrounding of the tower, to test for side-effects. What we will remind is that the Chinese take their energy supply very seriously.

The second stop of the day was at the North China Electric Power University, for the Beijing Area Major laboratory for High Voltage. This is the place where our guide at the test facility holds a chair as a professor. They showed us around their research centre after a great traditional lunch. On the way back to our hostel, professor Beenakker instructed us how to negotiate with local salesmen. A few kilometres before our final destination for the day, we crossed the Olympic "Bird's Nest" stadium of Beijing.

Day 6: Great wall of China

Thursday, 24 November 2011

This day was all about the great wall. Because we needed a three-and-a-half hour bus ride to get to the wall, the bus left the hostel at 6:00 in the morning. Fortunately there was breakfast served in the bus, a McDonald's breakfast. When the bus finally arrived in Jinshanling, we were overrun by more than ten Mongolian street sellers. Apparently the great wall was not enough to stop this invasion.

Behind the entrance another invasion started; a number of Mongolians decided to join us the whole day, continuously trying to sell their photo books to us. This was not as horrible as it sounds, as they were very kind to us: they helped us to get up and down stairs and gave us information about the wall.

This information was welcome; our incredible walking speed was too much for our guide. After a rapid climb we reached the Great Wall, and great is was. The 5 by 5 meter wall reached from horizon to horizon. Every few meters there was a tower, from which tops the most beautiful pictures could be taken. As the wall was not in is original shape anymore, sometimes we had to walk small edges or broken stairs, but we survived. We all reached the five window tower, the end of the accessible part, in no-time. This was a walk of about 5 km.

After the lunch near the parking place, almost everybody felt asleep in the bus. Unfortunately the bus couldn't take us to the hotel, as it got stuck in the Beijing rushing hour. We were dropped off at a metro station, where everyone could find his own way in the city.

Day 7: Lenovo's gadgets

Friday, 25 November 2011

After having climbed the stairs of the great Wall of China, following the Chinese's pace through the metro system turned out to be a great challenge. It didn't get much better after that, since we had to walk for three kilometres, but the next excursion – to Lenovo - more than made up for this.

Lenovo is the second largest personal computer manufacturer in the world, and is currently focusing on taking over as many tech-toy markets as possible. To accomplish this, two major strategies are used. While on the one hand Lenovo protects its matured markets, on the other, it attacks emerging markets. While this was explained by a sales representative, we could enjoy a well deserved sit-down in a very classy looking conference room – while enjoying a hot cup of coffee.

After this short yet informative break, we continued to the actual Lenovo showroom. In here, a wide range of Lenovo products is displayed, including laptops, tablets, smartphones and even full-fledged workstations. All of these were elaborated on in great detail – giving a very good impression of how much research and development is actually being done.

Although this gave a great impression of Lenovo's product lines, for Electrical Engineers, a more detailed explanation would naturally be welcome. The next point on the agenda did just that, as a Japanese engineer, who had been working for Lenovo for 26 years, gave us an in-depth presentation on the ThinkPad line.

Initiated by IBM and continued by Lenovo after acquiring IBM, the history of the ThinkPad is quite impressive – many innovations, such as a colour display, a CD- and DVD-drive and many measures to improve robustness (like a 'roll cage' and carbon fibre casing) were patented

by IBM and even led to a 100% market share in space. Next up was the youngest member of the ThinkPad-family: the X1. The main challenge Lenovo faces with every revision is that a completely updated system has to fit in the signature form-factor (the main reasons for keeping the same design is brand recognizability and ensuring no ThinkPad ever looks 'out of date'). Some innovations incorporated in the new model are a fan-design based on owl-wings – allowing for a higher RPM at the same noise level and lots of minor optimizations, like microphone noise suppression based on beamforming, and software-based rapid boot.

This interesting speech was the last official point on the Study Tour agenda for the day – but with an entire afternoon to cover, all of the members went their separate ways, visiting either the silk market, the National Museum of China or – in our case – the Beijing zoo.

The taxi ride was already an experience in itself, as the driver clearly took some hot manoeuvres through the chaos that is the Beijing traffic. Considering this, it was even more ridiculous that the second cab of our group-of-eight managed to keep up, arriving just a few seconds later.

The Beijing zoo houses 8 of the world's 300 captured Giant Pandas, forming one of the main attractions. One of them was actually nice enough to give an acrobatic performance, climbing down a tree where it had just been taking a bamboo-break. Whether the rather strange taste of the hot dogs was related to the large amount of empty cages we still don't known, but after seeing lions, elephants, hippos and a bunch of other animals the afternoon was a fun one.

Most of the group rejoined in the hostel after dinner. Some chose to stay there, get a couple of beers and return to bed early for the train ride to Shanghai, while others went to one of the most fancy clubs in Beijing, delaying sleep until the five hour train ride.

Day 8: To Shanghai

Saturday, 26 November 2011

Every day starts at 0:00. At this time the majority of the group could be found at "the Vic"; a local disco in Beijing. Here everybody enjoyed the Asian party and the many conversations that were started by a lot of curious Chinese people. Some remained interesting, others were not! After a pleasant night we headed home because the next morning we were heading for the city of Shanghai.

The next morning we departed in the early morning to head for the Southern station of Beijing. A final ride in the subway of Beijing brought us to the station. The train ride would take about 5 hours and we crossed several big cities (e.g. Nanjiang). The train had a maximum speed of just over 300 km/hour so in the 5 hours we crossed a distance of approximately 1500 km.

Finally arriving at Shanghai, we soon noticed there were some differences between Shanghai and Beijing. Entering the subway we saw much more order and control compared to the Beijing subway. Also, walking in the along the streets, less vendors were around. After checking in into our hostel, which made a booking mistake by giving everybody a twin room instead of a room with two separate beds, we saw pretty soon that Shanghai is a bigger business city compared to Beijing. More skyscrapers, more control, less chaos, and also less traditional Chinese culture.

In the evening we went downtown to visit the forth tallest building in the world: "The world Shanghai financial centre". The view from this 100-floor building (492m) is amazing. The lighting from the city and the view over it gave a magnificent impression of the city Shanghai and made you realize how big Shanghai really is. To complete the evening we drank some beers and went to bed.

Day 9: Venice of the East

Sunday, 27 November 2011

The next morning we headed towards Zhou Zhuang after we had breakfast. Zhouzhuang is a popular tourist destination. It is one of the most famous water townships in China, noted for its profound cultural background, the well preserved ancient residential houses and the elegant watery views. It has been called the "Venice of the East". We left in a huge tour bus, with a somewhat frantic driver. The ride took about a half hour. The driver stopped and started talking Chinese to us. Nobody understood what he wanted of us , so Professor Beenakker decided to call for help and called Harry. It took the bus driver at least five minutes to explain Harry what he wanted. He wanted us to get tickets at the front desk. Once inside we quickly discovered that the local vendors were also present again. The whole village consisted of small shops selling all kinds of food and other items. All the restaurants had fish tanks from which you could pick the fish you would like to eat. The fish you chose would then be beaten on the street and cooked for you.

Boats transported visitors around the town. It was very busy, the streets were narrow and every Chinese vendor asked us the same question; 'you take lunch'. They all wanted us to have their lunch. Some temples also contained gold statues of Buddha. For the Chinese, we were also tourist attraction and many of them wanted a picture with us. There were some highlights that we visited, like the twin bridges, Fuan bridge, Shen house, Zhan house, Milou tower and Chengxu temple. We visited a theatre where a girl sang a tragic story about her loved one. In the evening we had a dinner at the restaurant around the corner and we tasted the delicious Sjanghaise cuisine. It was very good!

Day 10: Micro and macro

Monday, 28 November 2011

After relaxing cultural activities on Sunday, Monday started with an abrupt announcement from the organizing committee. Our flight tickets from Shanghai to Shenzhen were booked with a minor flaw, which I will not go into detail about here. The committee President and Treasurer would spend their day fixing this imperfection, while the group departed for a day full of micro electronics. Instead of micro, which is today's focus technically, the subway station of People's square is definitely macro at rush hour. Right after we exited the metro station at our destination of the day, a rather funny example of Chinese thorough electronics design showed up. Of course, some lack of sleep from the Delft side was involved as well. Anyway, names will be left out, since this stupidity could have happened to anyone, right? One participant successfully tried – not being aware – to check out in the metro system with his hotel room entry card, which had exactly the same size. The card reader eats it all. Despite of several attempts to open the device, the card was long lost.

Soon MaximIC welcomed us kindly in their research facility. The building can be described as an American looking cubicle office layout. The employees at the Shanghai department worked primarily on analog integrated circuits design. Their designs are applied worldwide. We were free to ask around, so we could get a fair impression of the corporate culture of MaximIC in China. The people seemed very open, but sometimes we had a strange feeling the answers were too polished. The micro electronic guys considered the presentations about the most advanced chip designs very interesting, like all their built up knowledge in micro electronics was bundled

suddenly. An example IC that has been designed here is an 8 bit output source driver for applications in e-paper and LCD displays. Maxim offered pizza for lunch, which resulted in cosy conversations with again all the people from the design floor. Because of a small gap in the programme, some participants competed the Chinese engineers to play a battle of table tennis which they lost painfully. Others went for a small walk in the inspiring high tech business park, imagining where they would have walked five years ago on exactly this place.

A brisk walk brought the fellowship to the next destination: the giant foundry of SMIC. Contrary to the group's expectations, not a native Chinese but an American expat presented a slick story about the rapid growth of the company that provides integrated foundry services for digital picture frames, mobile phones, USB products, etcetera. Almost all being told was considered confidential by the company. Unfortunately we could not arrange a tour through the 60 nanometre foundry and nothing could be disclosed about who their customers were.

The American, not to blame for this less revealing visit, told us widely about his career move to the far east. The group took the opportunity to ask for more. SMIC offers a possibility for expats and local employees from the countryside to live in a company-owned living quarter, accommodated with all facilities, for example restaurants, shops, kindergarten and a medical clinic. Our host lives here too. In his current standard of living, he concluded that he lives like a Chinese during the week and like a European in the weekend! That sounded attractively to the group.

Day 11: Research in Shanghai

Tuesday, 29 November 2011

Day eleven, was the most luxurious they until now. At nine in the morning we were picked up by a bus that would bring us to Delta. "Welcome friends from Netherland" was showed at the screens at the main entrance. We were one of the first people there to visit their new showroom, and it was impressive.

The few of us that heard of Delta before, mainly knew it as a company producing simple electronic devices, such as notebook chargers. We found out it does much more than that. It is active in the following fields: Solar power, wind power, power management (for example in electric cars), power trains and hybrids, networking systems, high end displays, led lighting, cloud computing, medical, e-paper and voice intelligence platforms.

The new building itself even was a showcase for their technology: it produced, even in the clouded weather, 20 kW of electrical energy. Inside the showroom, we could see a interactive video wall, the newest 3D technique for cinemas, super high resolution e-paper, beaming TV's, a small wind mill, a lot of fans, server racks, filled with servers and networking equipment, a 180 degree cinema display, a telephone based credit card verification system and much more. There was a device related to almost everyone's specialization.

After this tour we were brought to the offices of the researchers and developers. Again the researchers were placed in a big room with low walls separating their desks. The tour went through numerous labs: first of all, there were the environment simulation lab, were (water) pressure, temperature, and magnetic field could be applied to new devices.

Afterwards we went to some specialized labs for different types of devices, there was the adapter lab, the antenna lab, the motor drive lab, ups lab, microwave lab, packaging quality test lab and plasma cleaning lab. Because Delta just moved to this location, all labs were still pretty messy, this reminded some people of the ETV workshop. The tour ended at the restaurant, where we all got a Chinese lunch box: a box with rice, chicken, vegetables and a banana.

The bus from Delta also brought us to the next company: Philips Lighting. The visit was to Philips felt a little bit like coming home, of which the presentations in Dutch were the most welcome. We directly noticed that the workplaces were tidier. Philips also put quite some effort into our visit.

First we had an introduction presentation from Dr. Harald Wierenga, he called the building we were visiting the LED temple. According to Philips in the future we will use almost no other

lighting than LED lighting. That is why Philips is doing a lot of research in the field of LED lighting. Philips started doing research in China around 15 years ago because of the vast amount of relatively cheap engineers. They have different facilities all along China's east coast. Currently over 100 new engineers are hired yearly for Philips Lighting alone. However, as engineers in Shanghai are getting paid 15% more each year, Philips is now investigating in moving to Xian, in the centre of China. In the next presentation a Chinese researcher told us the topics of current research and the position of the company in these topics.

Then we got two surprisingly different presentations, about working in China as a Dutchman. We were told that you will never get used the dirty spitting noise the Chinese make and that Shanghai and Beijing are not representative for China at all.

The transport system and the facts that you will never be alone in an alley and that you can buy everything for every price, are both the biggest upsides and the biggest downsides of China. Besides that we should keep in mind that many things are not strange here, but different. When judging another culture, you should always look in the mirror as well.

Even the Dutch guys in China had to adapt to Chinese working hours. An average working day, including travel time, is about twelve hours. After these presentations we were guided around

through the LED temple, that of course itself was entirely lighted by LEDs. Even here the researchers work in one big room, separated by low walls. There was also a showroom for different LED lights. None of us was able to detect the difference between a traditional bulb and a LED one when placed inside a lamp.

We were told that the market of LED light is flooded with cheap and low quality products, which causes a bad name for the sector. We all agreed that the high quality LEDs that were used in the facility, were at least as good as traditional lighting and much cheaper in use. We did also agree that €60,- is too much of a lamp.

Next we visited a light laboratory, where the exact light intensity or the intensity at different angles could be measured. After we spend the whole afternoon at Philips, we were treated with a great dinner at the 15 floor of a luxurious hotel. Even the head of Philips Lighting in Shanghai joined us there.

As this was the final night in Shanghai a big group of 13 participants decided to go to a club. The girls there really enjoyed the presents of all the Dutch guys. We were even asked if we were a group of models, because we were so “handsome and tall”!

Day 12: We're going to Shenzhen!

Wednesday, 30 November 2011

Next up on the Sunrise study tour menu: Shenzhen. Getting up in the morning was relatively easy for some – but quite hard for others, after a thorough introduction to Shanghai's nightlife. Despite this, everyone was present in the lobby of the Phoenix hostel right on time. As the Shenzhen flight was the luggage weight bottleneck, most of the participants took a short detour to the scales – some finding out that packing lighter might had been a good idea.

The procession of ETV members walked through the now drizzly streets of Shanghai for the very last time – making it's way via the metro system to Hongqiao Airport. After arriving, the first participants checking in had to open their luggage. Fortunately, nothing serious was found, and everyone fanned out into the airport for twenty minutes to wait for the boarding.

Some turbulence shook up the otherwise comfy, two hour flight – even a Chinese lunch was offered while the latest Harry Potter movie was shown on the far too small plane monitors. The clouds of Shanghai were left behind, and made place for a clear sky – offering the ones lucky enough to sit at a window a view of inland China: mountains filled with (very) small villages. The fact that travelling to Shenzhen is roughly the same distance as a tour from the Netherlands to Southern France meant that we were welcomed by an almost tropical climate – which was very welcome, with the memories of the freezing Beijing cold still in the backs of our minds.

We got out on the Shenzhen airport tarmac, and after a short bus ride, everyone successfully reclaimed their luggage. As a pleasant surprise, professor Smit was already waiting at the airport to welcome us in person in our new home town. A long metro ride and a small walk later, we found ourselves at the Loft youth hostel. While some of the rooms are quite small, the refrigerator offers beer at a bottom price of five renminbi, so bottoms up!

The area in which the hostel is situated is quite a rich one, as large buildings and relatively expensive shops surround it. The participants split up for dinner, some visiting a cheap, 30 renminbi restaurant, while others went all out with a 90 renminbi turntable dinner. The only drawback of the hostel was the 24:00 curfew, which was even announced by a five minute power outage, which on the other hand meant that everyone went to bed early, so that everyone could buffer some sleep for the exciting days to come.

Day 13: Foxconn

Thursday, 1 December 2011

Today we went to Foxconn city. The excursion to Huawei was cancelled, so we could sleep a little longer for the first time. Foxconn makes virtually everything for electrical appliances. I can tell you with a relative certainty that something in your computer is made by Foxconn. They make products for Apple, HP, Cisco and Asus. They are also notorious for their poor working conditions. Last year they were in the news, because many of their employees committed suicide.

The Foxconn complex is huge: it is some 3.2 square kilometres. Foxconn was on the outside of the city, so it took us a few hours to get there. In front of the gate we had to wait. There were two Chinese fellows standing next to us. One with a Foxconn sweater pulled something that looked like a letter out, and the other in a foxconn suit pulled out cash. Some intellectual property probably left foxconn right in front of us. Once we were inside, we saw an enormously complex with huge buildings, skyscrapers and supermarkets. We noticed the nets around the buildings immediately. We had already heard of the safety nets, which they use for catching employees, but we didn't know every building had nets. We were taken to a building where lectures were given and received an introductory presentation here. They told us what their company does and how they treat their employees. Professor Smit noticed that they were quite busy with the psychology of their employees. After some questioning, the presenter told us that this was due to the high suicide rates. Then they gave us a tour around the R&D lab of Foxconn. We were driven across the campus in golf carts. In the lab they test the acoustics and sustainability of their products. In one of the acoustic Labs was a thin, square device under a blanket.

The only this we did see was the famous apple charger. We think we witnessed the new, version of the iPad, but the employees denied everything and no one had the guts to lift the blanket. We passed stress test labs and the "highly confidential" Apple labs with sealed doors, so no one could get in or out. In another room laptops and cell phones were tested for durability. Many labs had blinded windows. Once we were outside the golf carts took us back to the main gate and this was the end of the tour around the Foxconn city complex.

Day 14: Goldway & Tsinghua University

Friday, 2 December 2011

This day started as usual. We had to get up pretty early to visit "Goldway". Goldway is a Philips company which was founded in 1995. It has become one of the leading companies in healthcare in China. We were welcomed by Mr Ren Guanqing and Mr Terry Qin, who gave a short presentation about the company's business and technical aspects. After the presentation we had a tour through the entire company. This tour was very surprising for the most of us because we got to see our first assembly line in a Chinese company. This assembly line produces 25,000 heart monitors each year. Furthermore we got a chance to see the R&D department. Mentioned was the fact that a new product takes about two years of designing, testing and approving to be on the market.

After the lunch we were picked up by a bus, to go to the Tsinghua graduate school. This school is also part of the same university as we visited in Beijing. The difference is, that in Shenzhen there are only graduate students.

We were awaited by professor Guan, who first gave us a presentation about the university. This was followed by a campus tour where we visited the High Voltage test facilities and the Transport department where we also saw some great applied electrical engineering. We finished with a visit to the university library which was recently also opened for all citizens of Shenzhen.

After the tour we had dinner with all the professors of the High Voltage department, including professor Guan and the dean of the university. We soon realized that this dinner was more than just eating. After the first dishes were served, a load of bear was brought in and put on the table by the dean himself. He encouraged us to drink until we couldn't drink anymore. And so we did. Every professor introduced his own toast and pretty soon there were more bottles on the table then food. Everybody was surprised to see that twenty-two students were lagging behind on the drinking schedule of the Chinese professors. The dean of the university was such a good drinker, we are still doubting if he's really Asian. At the end of the dinner, there were twenty-two totally drunken students and a couple of professors who where just a bit tipsy. We lost the drinking battle! Especially after the professor drunk a half liter in a couple of seconds, we were astonished!

Saturated of the alcohol we headed home and the ride back was really fun. After all this drinking, some of us headed to a club in Shenzhen; others were preparing for the trip to Hong Kong which will be tomorrow.

Day 15: Relaxing in Hong Kong

Saturday, 3 December 2011

After a couple of exciting days in the engineering city of Shenzhen, the group travelled to Hong Kong for a relaxing weekend. Although the two metro systems are basically coupled, it took a while before we had crossed the 30 kilometre distance. The administrational paraphernalia at the border between the People's republic of China and the Special Administrative Region of the same republic were prevalent, especially when more Chinese want to spend their time off in Hong Kong for tax free electronics. At least, that is what the committee's President encountered when he was put into the wrong line. Nevertheless, we had a couple of hours to enjoy the sun in the compact and dense streets of Hong Kong. For two days we had to carefully remember that traffic shows up from the right, while the driver is commonly seated left. Gratefully, the taxi driver thinks about this at night time. Our hostel was located inside a skyscraper on primarily the fourteenth floor. It was not surprising that more hostels were located in the same building, as well as restaurants, offices and bars. It definitely felt mighty waking up in the heart of an incredibly crowded city.

After checking in, the afternoon consisted of an optional program. Most of the participants went to Ngong Ping 360, a cable car track taking tourists up the mountains of Hong Kong. In the past, the richest people lived in these mountains which represented their extreme welfare. Right at the top, the Tian Tan Buddha statue could be visited. Unfortunately, not much of the city centre could be enjoyed from the mountains, as also Hong Kong is covered in smog. Above all, it was a relaxing trip to the different face of Hong Kong. The committee cancelled the group diner, because the cable car back to the metro system was delayed by an hour. A small part of the group tried Hong Kong's international cuisine accompanied by professor Smit. Afterwards, these guys explored the city's night life and ended up in a club on the thirtieth floor of Hong Kong island. Others decided for a comfortable bar closer by. The coming up Sunday is the first day off after some time. Time to charge our internal batteries, and get prepared for the fourth city in the second country: Seoul.

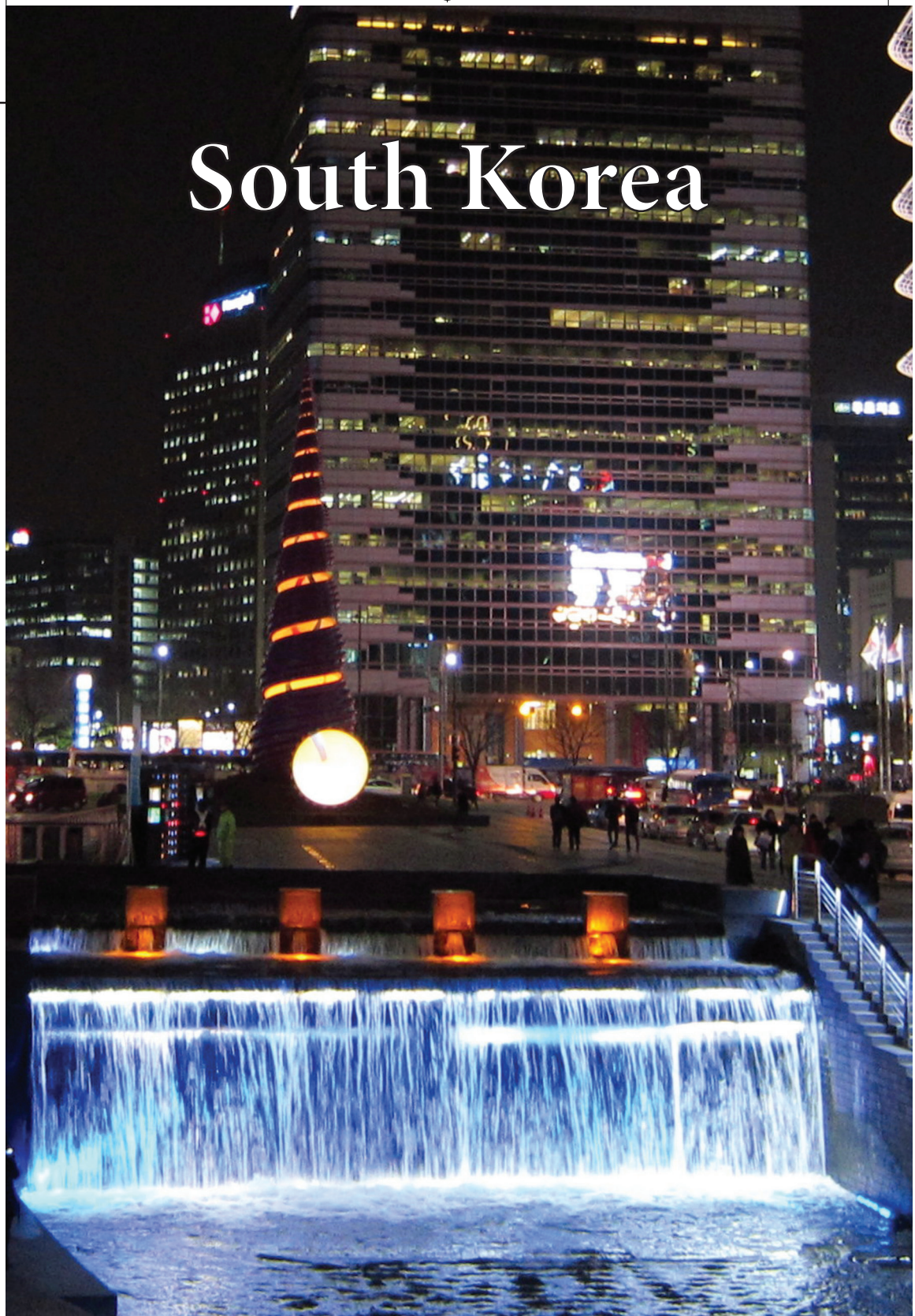
Day 16: Rest in Hong Kong

Sunday, 4 December 2011

Sunday the 4th of December was the first real day off. We had a full day to explore the city of Honk Kong on ourselves. For the majority of the diary commission this started already in the night from Saturday to Sunday. In club Azure there was a classy and expensive, but great party on the 30th floor, in the middle of Hong Kong's skyline.

Luckily the first free day was an excellent opportunity to catch some scarce hours of extra sleep; a few participants stayed in bed until the afternoon. In contrast: others got up at eight in the morning and prepared their own program around all touristic highlights of Hong Kong. Besides all the tourist sites, of course the well-known electronics shops and markets had to be visited. Unfortunately the promised price differences were quite disappointing.

South Korea



Day 17: On to Seoul

Monday, 5 December 2011

When all of the twenty-two members were present in the morning, their suitcases fully packed, it was time for the first change of country. Most were especially happy to leave the not so roomy and not so luxurious hostel, but there was still a challenge ahead: navigating through the chaotic Hong Kong traffic. Luckily, the distance to the Metro was quite short (in distance, not so much in time), and the committee had already bought everyone their tickets, so we could leave for the airport right away.

After the metro ride, we had to transfer to the Airport Express – a train ride through Hong Kong with plenty of scenery along the way, such as the famous skyline and the harbour – leading us to the Hong Kong international airport. It was enormous – especially the main terminal was very impressive. This time checking in went smoothly, so everyone had one and a half hours to spend on getting some lunch, exploring the airport or simply getting some extra sleep.

The flight – hosted by Korean airlines – was quite comfortable and took about three hours, although, due to the time difference, the clock told us four hours. Two types of lunch were available: a 'simple' chicken meal (served with rice, broccoli and a shrimp salad), or a real Korean Bibimbap – a rice meal which had to be self-assembled but, if correctly done, tasted great.

The landing was quite smooth, and after some taxiing we finally arrived at our new destination: Seoul, pronounced as the English 'soul' in the native tongue. Instead of just the normal arrival card, we also had to fill out a separate health and declaration form, but while we had to turn all of them in, seemingly nothing was done with them. Getting through security took quite some time as well, since not only passports were checked, but also our fingerprints and a photo of our face were taken.

All of the suitcases were once again delivered at the right airport, so we continued through the metro system. Seoul manages to make the metro rides even more fun, by playing a nice tune every time a metro arrives – and in the metro a trumpet tune is played when a station is coming up. Another noteworthy difference is the currency. One thousand Won corresponds to a measly 65 euro cents – meaning it is quite easy to become a millionaire!

Quite a long metro ride later, we arrived at the Hongik University stop – a few hundred meters from our hostel. After crossing these, we arrived at the Pencil Hostel, our stay for the next four

nights. The hostel is ridiculously well-equipped – ranging from electronic Samsung door locks and floor heating to a fully furnished kitchen with washing machine and ceiling lights with motion sensors.

The general impression of South-Korea is that is it very modern – especially compared to the Chinese cities we visited. The small, family owned shops that repeat every couple of bocks make place for decent and modern shops (including big franchises like Starbucks and McDonalds) all apartments look nice – in contrast to especially Hong Kongs many derelict buildings. The streets are filled with modern cars, of which a vast majority is made up of locally produced Hyundai's and KIA's.

The evening program was free, so the participants split into groups for dinner, some checking out the local twist on an American steak house, others trying the apparently typical Korean barbecue – a great concept, since while a Dutch winter barbecue is very cold, the Koreans discovered a way to do it indoors. Time to see what South Korea has to offer, but not before taking a good nap.

Day 18: Samsung & Neso

Tuesday, 6 December 2011

Today was the day we visited Samsung; one of the biggest companies in South Korea. Samsung develops, designs, manufactures and sells almost everything; especially in Korea. In Europe they are mostly know for their smart phones, fridges and TV's. But in Korea they produce cars, internet products, heath care machinery; they produce almost everything.

A result of this wide scale of products is that other companies want to know your secret. That's why Samsung has a very strict policy considering guests. Everybody who wants to enter the Samsung company park has to be screened and registered. Because of this we had to wait for half an hour before the entrance.

Finally in, we were taken to the showroom where all the products (old and new) were showed. The most interesting were the upcoming products of course, since these products hold the latest technology. But it was also nice to see the products you used to have and used to be very popular. A little funny was the fact that the Galaxy S was already considered an older product, since a couple of us still walks around with this (old) phone. To conclude we had a Q&A session with one of the recruiters of Samsung. He told us some interesting things about the R&D department, the structure of Samsung, the conflict with Apple and many more. The Q&A session concluded the tour of Samsung.

Our second part of the day was spent at Neso (Netherlands Education Support Offices) of South Korea. Neso supports Dutch students to study in South Korea and Korean students to study in the Netherlands. First, we had a presentation by de director of Neso, who told us a lot of interesting things about Korean history and culture. Secondly, we had a presentation and Q&A-session with the ambassador in Korea. He discussed some nowadays statistics of Korea, which gave us a better view of the influence of Korea to the world. Especially the growth of last 3 decades was very impressive to see.

After the presentations the ambassador took us to a traditional Korean restaurant. The restaurant contained several indoor barbecue systems (or grill systems, but they call it barbecuing). So, a lot of meat was grilled, dipped in spicy sauce and wrapped in a lattice leaf, then followed by eating the whole package in one byte. It was a special way of eating but everything tasted really good and everybody had a full stomach at the end of the dinner.

The evening was concluded with the traditional Dutch feast "Sinterklaas". Everybody had bought a present for one other person and combined with the traditional songs and some special alcoholic Korean drink we celebrated the entire evening. Afterwards some went to the club "the Cocoon" and partied till dawn.

Day 19: Free day in Seoul

Wednesday, 7 December 2011

On this free day part of the participants went to the Demilitarized Zone (DMZ). The DMZ was built in 1953, after both North and South Korea decided to move back 2 kilometre from the border to create a buffer zone. This zone is still the most heavy militarized zone in the world. We went on an early trip from Seoul, taking approximately one hour driving. The first stop was a viewpoint at the 'Bridge of no return' towards North Korea; a prestigious train project, which until now did not result in a frequent connection.

After that, the bus took us to one of the four infiltration tunnels the North dug for an unexpected infiltration of Seoul. Thousands of soldiers could pass through the tunnel every hour and lead in a surprise attack on South Korea. Luckily for the South, four of them have been discovered. On the other hand, nobody knows how many more exist. Checkpoint after checkpoint, with Apaches and Chinooks flying over our heads, we reached the Observatory point. This was the nearest we could get. We could look straight into the DMZ, and with binoculars we were able to see the tall North Korean flagpole and some checkpoints. Being so close to one of the most secretive countries on earth, was truly breathtaking!

The rest of the participants went to soak up some of the Korean culture. Korea has a very rich history, though it is not very known in the west. We went to the centre of the city, where we visited Seoul Castle and a museum dedicated to king Sejong the great. Lots of Koreans in traditional clothing were performing a changing of the guard ceremony. We took a cab an headed towards the Seoul tower. We got stuck in heavy traffic, but it didn't take us very long to get to the top of the hill that houses the tower.

The Seoul communications tower is 237 meter high and has a observation deck at the top. The view over the city beautiful. Next stop was the Korean national museum. This is one of the biggest museums in Korea and houses almost all of the remaining Korean artefacts. On the first floor is the Archaeological Gallery, which contains approximately 4,500 artefacts from the Paleolithic to the Unified Silla era. The second floor contains the Donation Gallery and the Fine Arts Gallery 1. The third floor contains the Fine Arts Gallery II, with 630 pieces that represent Korean Buddhist sculpture and craft work.

Day 20: Yonsei University & Hyundai

Thursday, 8 December 2011

Our last full day in Korea started luxurious, in a long convoy of taxi cabs heading for the campus of Yonsei University. The campus road showed similarities with Delft's Mekelweg; a lot of students in a rush for their lectures. In the Engineering Science Park, right at the beginning of the campus, a professor of the Electrical Engineering department welcomed us warmly. Two of his top students would guide us through the lab and over the campus. In the lab Yonsei conducts research on optical data storage and active train suspension. The research seemed more advanced than what we had seen in China.

The students from Yonsei were eager to show us their new-fashioned library. Wondering what could make a library modern, we headed to the large square building on the crowded campus. They soon convinced us, as the library had an advanced entry card system, which the students used to access touch panels by which they could reserve a workplace. Besides, there was a lot more that could be controlled by the fancy touch panels. For instance, Yonsei students can access global newspapers. At our request, the guide displayed the cover of yesterday's NRC Handelsblad. The cover depicted the new New Kids movie. It took some time to explain them New Kids does not reflect ordinary Dutch kids, it is a small subculture down the rivers. To wrap up, the library contained a respectable movie studio, as well as a small cinema. All of which could be reserved by the students, obviously only for study purposes. Right…

With a well-appreciated lunch box under our arms, we headed for the bus in which we would cross the entire city of Seoul. The combination of a filled stomach and the extreme heat in the bus, an after lunch dip could not be resisted. In an hour or so, taxi cabs brought us up the mountain. Two enthusiastic ladies of Hyundai welcomed us to their headquarter. Although the ladies were definitely no engineers, they presented us a coherent story about the newest Hyundai technology. There was even some technology that could be demonstrated in the showroom, like

cockpit modules, braking systems and head lights. The installed audio system was extensively tested for the sound experience of the unofficial study tour anthem. Afterwards, the guide wanted to show us some real test facilities. She first brought us to an air bag test facility. Here, a full-size car roll cage was installed on a rail, and could be fired at a massive block at velocities up to 80 km/h. Unfortunately no test were performed that day, giving the dummies a well-deserved day off. The second building housed the acoustic and electromagnetic chamber of Hyundai. We had already seen some at other electronic manufacturers. Yet this one had dimensions we had not seen before, necessary to perform tests with real vehicles.

The day was not over yet. To thank professor Smit for his active involvement in the study tour, a group dinner had been planned. To add some variation, the menu was not Korean, but Indian. Accompanied with a lot of water, we enjoyed the specialities. During the meal professor Smit announced that he would go with us to Osaka. It is fantastic we got to enjoy his presence a bit longer.

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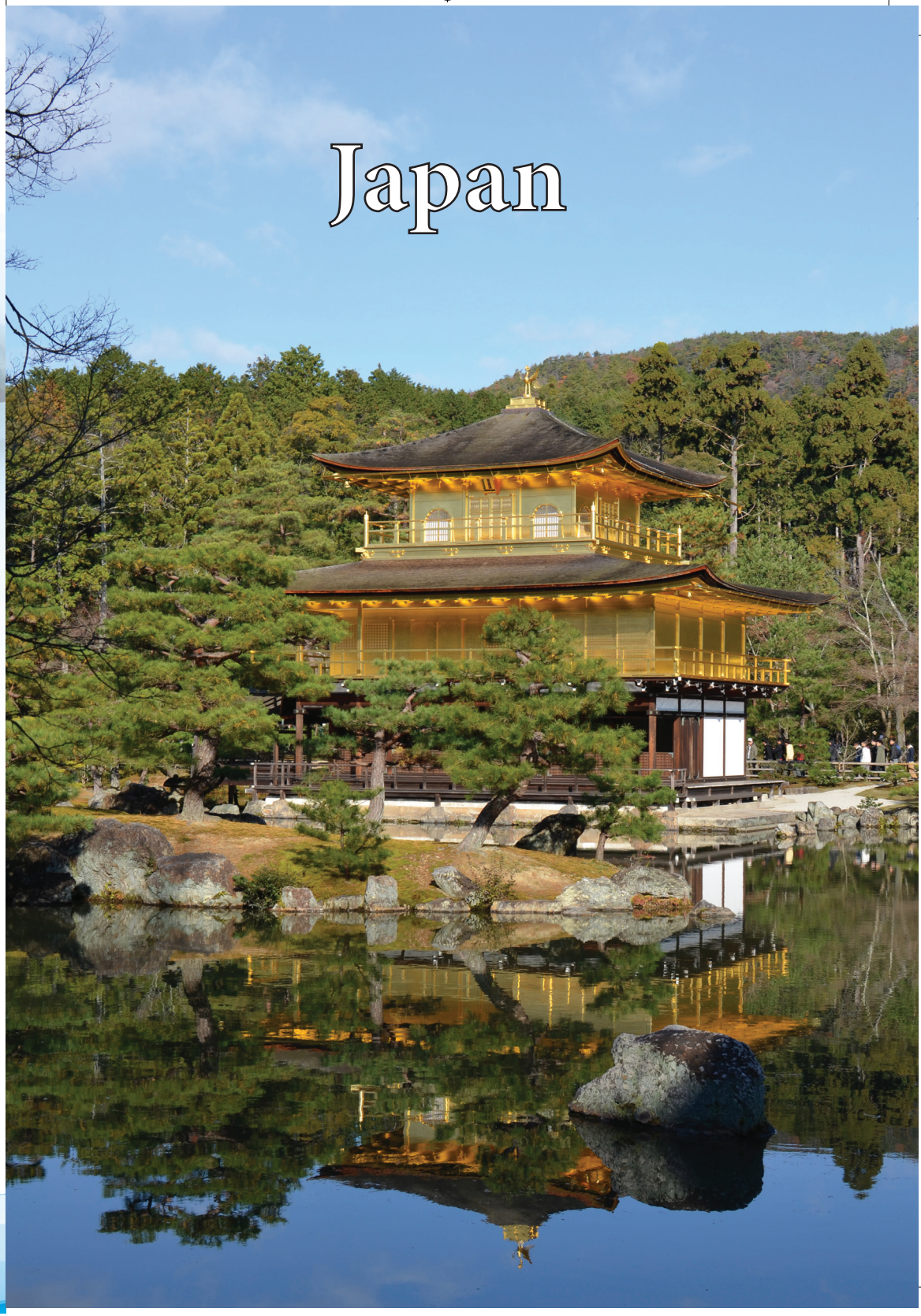


Day 21: To Japan!

Friday, 9 December 2011

After just 4 days, it was time to leave Korea and get ready for Japan. While some took the opportunity to get some extra hours of sleep (the alarms were set at 9:30 a.m.), the rest saw it as a great chance to explore the Korean nightlife for the last time. Two participants really enjoyed the company we got from two female hotel guests, who joined us to the party.

Tempers were tested intensively while packing our bags in the somewhat cramped double bunk bedded rooms. But one hour after the alarm (almost) everyone was standing in the cold Seoul winter weather, in front of the hostel. Because of a smooth train connection to the airport we arrived before our flight information appeared on the displays. This extra waiting time was gratefully used for a nap in the terminal.

Inside the air plane, there was hardly any time to get some sleep; the 830 km to Osaka was covered in only one hour and eighteen minutes. Before we knew it, we got our meals and a blink of an eye later we were already on the ground.

In the airport in Osaka we lost quite some time at the customs, who wanted to get everyone's picture and fingerprints. This procedure was comparable with entering the US. In the end it took more than two hours before we were finally in the train on our way to the hostel. Fortunately, the hostel was worth waiting for.

Although the owner of the hostel was afraid we would think the single bedded rooms were much too small for us, everyone was pleased to have a room with some privacy. The available Japanese style bath house (Sentō), was enough for everyone to relax for the rest of the evening. Others choose to enjoy the Japanese cuisine right away. However, everybody went to bed quite early, for the next day would start at 6:15 a.m.

Day 22: Cultural Kyoto

Saturday, 10 December 2011

For our first activity in Japan, we went on a trip to Kyoto. Instead of walking or using public transportation, the committee had arranged a bus, which took us from one cultural site to another. Right after we had entered, a very cheerful tour guide grabbed the bus' microphone, and told us some Japanese trivia. For instance – as some of us had already noticed – the Japanese use the word 'hai' a lot, and it means either 'yes', 'thank you' or 'you're welcome'. Next, the guide asked us if we were still 'ghenki', which means so much as 'feeling good'. Also noteworthy is that in Kyoto, McDonalds cannot stick to their regular colour scheme, since red, the background of their logo, is a sacred colour in Kyoto's culture.

The first stop was the Golden Palace. The palace and the park around it were designed and built by a rich Japanese man (but not a king), with the purpose of creating a small piece of paradise on earth. He quite succeeded, as the view of the golden palace was truly breathtaking. It was, however, not the original golden palace we were looking at, but a recreation. The original had been set on fire some 50 years ago by a Buddhist monk, who thought the palace would look even shinier when it was covered in flames. While walking through the gardens, we also got a chance to taste some local snacks, such as wasabi nuts and rice balls.

Next, we went to a tea house where we enjoyed a traditional tea drinking ceremony. A tea master, dressed in kimono, first served everyone a very sweet snack – to prepare the taste buds for the bitter tea. Then he prepared a bowl by washing and brushing it, and then poured the traditional green tea in. The tea master shows his respect towards his guests by first turning the tea cup half a round, facing the guest, and making a bow afterwards. When drinking the tea, it is important to let your last sip be heard clearly, since this means that you enjoyed the tea and are ready for a refill.

A bus ride later, we arrived in Kyoto's Gion district. Here, women are trained to become Geishas, Japan's traditional party makers. If you want your traditional party to become a guaranteed success, you hire some Geishas to serve food and drinks, make music and sing. The participants were served a nice lunch to prevent us from getting 'pecco pecco' – hungry. Besides the usual rice, we got a piece of Kyoto style mackerel, a local speciality.

With our stomachs filled, we headed for the shogun's castle. While not the emperor, the shogun was practically in charge of Japan, comparable to a prime minister. His personal army was formed by the well-known samurai. These formidable warriors carried three blades: one main blade, one backup blade and one small blade to perform 'hara kiri': honourable suicide in case the samurai got caught by the enemy. The shogun also had staff to tend to his other needs; it was not uncommon to have one thousand women in service. Besides a wife, the shogun also had many girlfriends, ensuring that his bloodline would carry on.

The castle itself was quite impressive. All of the rooms were decorated with paintings, and to prevent the view from being obstructed, no furniture was placed. The walls were all movable, so on a hot day every little breeze could cool the castle a bit. By now, everyone had noticed that with each step, the walls made squeaking sounds. This was not due to poor construction, but an ancient alarm system – since every enemy trying to get in could clearly be heard as soon as he set foot in the castle. We had some spare time to look around the castle, and admire the beautiful garden. The garden was decorated so that it symbolized a human: in Japanese culture, rocks symbolize the body, trees the spirit and water the blood. There were no flowers to be found, since this means so much as make-up, which the shogun did not care for.

We were welcomed back in the bus and took off for the last stop of the day: the Shinto shrine. Shinto is a Japanese religion, and a quite peculiar one at that. The Shinto have a god for every

little thing, such as the moon, fertility and even money, summing up to a total of over eight thousand. Instead of regular church visits, the Shinto only visit a temple or shrine when they are in need of something – praying to the corresponding god to get help. The Shinto shrine is very famous for its orange gates, which can be seen everywhere, but especially on the road right behind the Shinto village. Here, hundreds and hundreds of gates, big and small, form a tunnel over the pathway. All of these gates are 'adopted' by companies – not just from Japan, but all over the world – taking care of the Shinto's financial needs. After hearing that the smallest gate costs about eighteen hundred euro, to which an annual fee of about double that and a yearly contribution to a Shinto festival are added, one can only speculate on the amount of cash inflow. A fun fact is that the bright orange, with which all of the gates are painted, started out as dark red, symbolizing 'blood' or 'life', but over the years changed to its current colour with every repaint.

For the last time, the guide- still as cheerful as in the morning - said 'Arrigato for coming back to the bus' as we got in for the ride home. During our arrival in Osaka, we had already noticed that there is a vending machine on literally every street corner, but the guide could tell us that there's an impressive amount of five and a half million of these machines in Japan – meaning there's one for every 23 Japanese. While pondering on all of the cultural experiences of the day, the participants got back to the hostel.

Day 23: A day off in Osaka

Sunday, 11 December 2011

Today everybody had a free day. Since people don't work on a Sunday in Japan, there is no use in arranging a company visit. Anyway, everybody had the day for themselves. Some people went away on their own, others travelled with small groups. Here are some of the things that people have done.

Almost everybody took this opportunity to relax in the morning, and slept till noon. Especially since the day before everybody had partied till late. In the afternoon some took the opportunity to go to Hiroshima. Here, a museum dedicated to the drop of the atomic bomb in the second World War is located. Everybody who went there was very impressed by what they had seen and could hardly describe their experience. Afterwards they had a huge dinner and talked about the ´koetjes en kalfjes´.

Another group took the bike rental opportunity, and took a city tour by bicycle. They visited some nice places, like the Osaka castle; a 16th century castle which mainly consists of gold because its creator was fascinated by the rare metal. It was a nice way to get to know Osaka in a relaxing way, and spend time among the Japanese people. For the ones who were not into a bike ride, did the sightseeing by subway.

Some others went to the aquarium of Osaka, called Kaiyukan. Here, some pretty big, rare fish species swam around. The wale shark, sea otter, king penguin and the pacific white sided dolphin have all been spotted; truly a beautiful experience!

Of course some people stayed in the hotel and had a relaxing day. They, for instance, made use of the sauna and the Japanese bath to relax and enjoy the rest of the day. At the end of the day, everybody was satisfied and went to bed early, because the next morning we had to get out pretty early for new company visits.

Day 24: Panasonic batteries

Monday, 12 December 2011

Today we visited Panasonic and the Sanyo solar ark. We started the day with a presentation about Lithium-ion Batteries by Mr Ogino, team leader of technical administration group. Panasonic makes batteries for all kind of purposes. From traditional Alkaline batteries to car batteries. Panasonic is investing heavily in Lithium-ion technology, because of high demand from the industry. They have different types of lithium-ion batteries. Like the CR series for high output and the ML, MS and VL series used for memory backup applications and batteries for terminal and connector specifications. At the end of the morning Mr Ito, president of energy company, welcomed us and spoke about the company. Panasonic has a lot of facilities around the world. Five of their twenty-two facilities are in Japan. Panasonic also has facilities in eastern-Asia, Europe, Africa and South-America.

After the Panasonic presentations, we headed towards the Sanyo Solar ark. The solar ark is located in Anpachi, north-east of Osaka. It took us an hour to get there with the Shinkansen. The first thing we saw when we arrived was the giant, banana shaped building covered with solar panels. The Solar Ark is 315 meter wide and 37 meter tall. We were welcomed with a nice lunch and a presentation. After this we visited the museum inside the ark. It is a museum about solar energy and focuses mainly on kids, although adults visit the museum all the time.

We went back to Osaka with the Shinkansen and had dinner with a representative from the embassy. It was a traditional Japanese restaurant, where we ate all kinds of fish and drank a lot of sake.

Day 25: Changing of the scholary guard

Tuesday, 13 December 2011

The combined subway/train system of the Tokyo metropolitan area brought us to Mistubishi Electric. Here, we were kindly welcomed by again a company representative with experience in our home country. The engineer at Mitsubishi Electric proudly took off with his experiences with the Dutch culture, and his adoration for the, I think it is instead Belgian, Duvel beers.

The motto 'You wouldn't believe the things we do' was repeatedly emphasized by the presenter. This was made true by the fact that Mitsubishi Electric has a separated organization for development of elevators, air conditioners, escalators, giant displays, car systems and industrial robots.

The R&D centre in Tokyo conducts research on automotive sensors. The product range in which the research is performed contain pressure sensors, airflow sensors, accelerometers and infrared sensors. A very extensive story described us that in future power electronics silicon carbide will be replaced by probably gallium nitride. This was clearly the field of the microelectronics and power engineering students.

In the tour an industrial robot test side was shown. At a high pace a circuitry board was assembled by four robot arms. Furthermore, a demonstration room of a full-scale smart grid test setup was shown. The smart grid concept embraces the dynamic matching of energy demand and supply. This concept offers a lot of opportunities in future energy management, but it also requires a lot from the grid. The tour ended with a respectable plate full of sandwiches. Together with some company's engineers, the group evaluated Mitsubishi Electric. In the middle of the lunch session, professor French arrived directly from the airport, making the group two professors strong.

At the Omron Kusatsu Office, a tight schedule was kept. This phenomenon seems very Japanese, even the question and answer session is planned. In case this session finishes early, we had to keep making up questions, not meaning we did not ask a lot already. The Kusatsu Office researches Industrial Automation, and assembles products on a rather small scale. In this assembly line, programmable logic controllers, timers and power supplies are assembled. This is being done in ultra high mix-low volume production. Omron has a rather large product portfolio, from which not every product is demanded in high quantity. Therefore, the company created the advanced assembly line in Tokyo where the workers can rapidly reconfigure the assembly facilities to continue with the production of other products. This concept requires extensive micromanaging. We were delighted to finally visit a real assembly line. The facilities seemed highly standardized – an important pillar of Omron. It was impressive to notice that when we entered the facility, all workers bowed deeply, a very submissive attitude.

After the tour, we arrived at the Tsunagi Laboratory Kusatsu. Tsunagi, meaning connectivity, is the lab's main concern. The lab tests industrial machines where the connectivity between different components from different manufacturers is an important aspect.

At the end of the day the group said goodbye to professor Smit who guided us around since we had been in Shenzhen. Smit was involved actively, making notice of his presence at the excursion to the Demilitarized Zone in South Korea, which was not only our day off, but also his. We are grateful for his great support in all three countries that we have been to together.

Day 26: Tokyo, I'm on my way!

Wednesday, 14 December 2011

Most participants set their alarm a little earlier on Wednesday to enjoy the bathing house for the last time. That's why everyone could start the trip to our last destination, Tokyo, well rested. Quite soon, we found our way out of Osaka and to the Shinkasen (high speed train) again. This time we could enjoy it for 2 and a half hours, following along the Japanese coast to the train's final destination. As everyone was quite relaxed, a few naps were made to kill the time. In the train we found out that the Japanese take the smoking cabin quite serious; it looked like you were not allowed to sit their without a burning cigarette in your hand.

Once we got on Tokyo's subway network, we noticed that there were hardly any escalators. On all three station we literally had to lug our luggage up the stairs. While walking from the last subway station to our hostel, we suddenly bumped into the Senjoi Temple, Tokyo's oldest temple. As we quickly realized, this was only a few hundred meters away from our hostel.

After everyone had time to store his luggage in his room, make up his bed and explore the neighbourhood a little bit, we gathered to go to the restaurant altogether for the last time. At this great dinner, which was accompanied by Nomihodai ("all you can drink") again, some highlights of the fine Japanese cuisine passed by. The familiar beer together with warm Japanese sake (and some strange cocktails later on), made us all get in the right mood fast. So right, that some of us decided to explorer the Tokyo nightlife, already at the first night.

Day 27: Nissan & Tokyo University

Thursday, 15 December 2011

The participants had to get up quite early again – at half past six the alarm clock rang in order to be in time for a company visit. This time, Japanese car builder Nissan was scheduled. In order to get there, we had to drive for quite a while by subway. After a couple of transfers and a walk, we arrived at the big complex that is Nissan's manufacturing plant. Just outside of the meeting building, we could already get a glimpse of what we were about to see, as there was a Nissan LEAF (an EV, or Electric Vehicle) standing at a fast charge point.

Once inside, we walked through a showroom where four of Nissan's models were shown. We then got a short presentation, welcoming us to the plant and explaining to us what Nissan cars are being manufactured there. Nissan actually builds eight of its models at the site we visited. Also, there is a test track, where new cars are tested. Next up was the main event: a visit to the actual production line, where we could see several stages of the car making process.

Right after entering, it became clear how much effort it takes to make one car. Everywhere, all kinds of things were happening at once – mechanics adding parts to the cars, ranging from single screws to entire dashboards, fully automatic 'trains' driving around parts from the 'sorters' to the 'builders'(while playing a somewhat annoying tune). While some of the production line had just a conveyor for the cars-in-progress, another big part also had a conveyor belt for the mechanics, moving in sync with the cars. To make sure the 'sorters' get all the right parts, and

the 'builders' actually add those parts to the cars, small LED's are placed over all of the boxes with parts, indicating whether a part has to be picked up or used, or not. For the final stage, all of the cars are run through a series of tests, checking the cars' acceleration, braking performance and reverse gear as well as all of the electronics. Using this quite impressive process, one car can be built in just sixteen hours.

Next, we were offered a bus tour on the rest of the complex. We got to see a lot of completed Nissan's waiting to be shipped – since the complex is right next to a harbour, the cars can almost be directly loaded on board. Since Nissan can't always fill an entire ship, space is rented to other car builders, so for example Mercedes, BMW and Renault cars could also be seen on the parking park as well.

After returning to the meeting room, we were shown a short movie about Nissan's strategy for getting ordered cars delivered to specification in a time slot– which is mainly based on a centralized ordering system and ordering all necessary (optional) parts in the right sequence.

Having seen and heard all about Nissan, we headed for Tokyo University. We first got a general introduction, where we learned that the university is quite internationally oriented, since they collaborate with a French university.

We split up into two groups, visiting two research departments throughout the university. One of them is researching digital preserving of cultural landmarks. By using advanced 3D scanning techniques, entire buildings can be digitally stored, making sure that even if these sites were to collapse, future generations can always admire them as they are now. The other department is focusing on analysing web logs, and looking how popular overlapping phrases behave in time. This was presented in a very fancy three-dimensional graph, showing how these phrases spread out to multiple blogs. The groups were recombined, and we were guided to the French collaboration department, where research in the field of optofluidics is done. Finally, we got a chance to talk to some of the (inter)national students, sharing experiences from Tokyo and Delft.

After this elaborate excursion, the day program come to an end. Since the trip back to the hostel led past the Shibuya district, Tokyo's main outgoing area, some of the participants went out here for dinner. Everyone finally returned to the hostel, and another day came to an end.

Day 28: NEC

Friday, 16 December 2011

NEC is the last company that we are visiting. Nowadays NEC is producing a lot of half products which can be found in many devices. But many people may know NEC from the DVD-burners they used to make.

In the morning we were picked up at our hotel by one of our hostess of the day. With a very busy subway-drive we drove to NEC which was not that far away. When we got our entrance pass, we were taken to the reception room, where we got an introduction of NEC. After this we split up into 5 small groups and in turn we got to see five interesting presentations of different NEC engineers. They showed us some new techniques they are developing and it was nice that we could discuss about the design and implementation of their product. Most of the developments were connected to telecommunications; but in a broad sense. One person developed a program which could recognize words in a call and store the these words with the amount of time it has been said. This could be used for e.g. a call centre. Another development team made a special app for communication. It was a bit similar to "skype" and "What's App" but it had some special characteristic features. After all 5 presentations we had time for some final discussion. We talked a lot about their upcoming phone and how software implementations could be placed in the market.

This concluded the program for today and after this interesting day of technology we headed home. In the afternoon we had some free time. Everybody spent their time individually or in groups. Some went to the city centre, others stayed near the hostel. Finally, in the evening we went to one of the bigger disco's of Tokyo. Although the nightlife in Tokyo wasn't as relaxed as in Osaka, we still had a great evening with a lot of funny and sometimes embarrassing moments.

Day 29: The final day

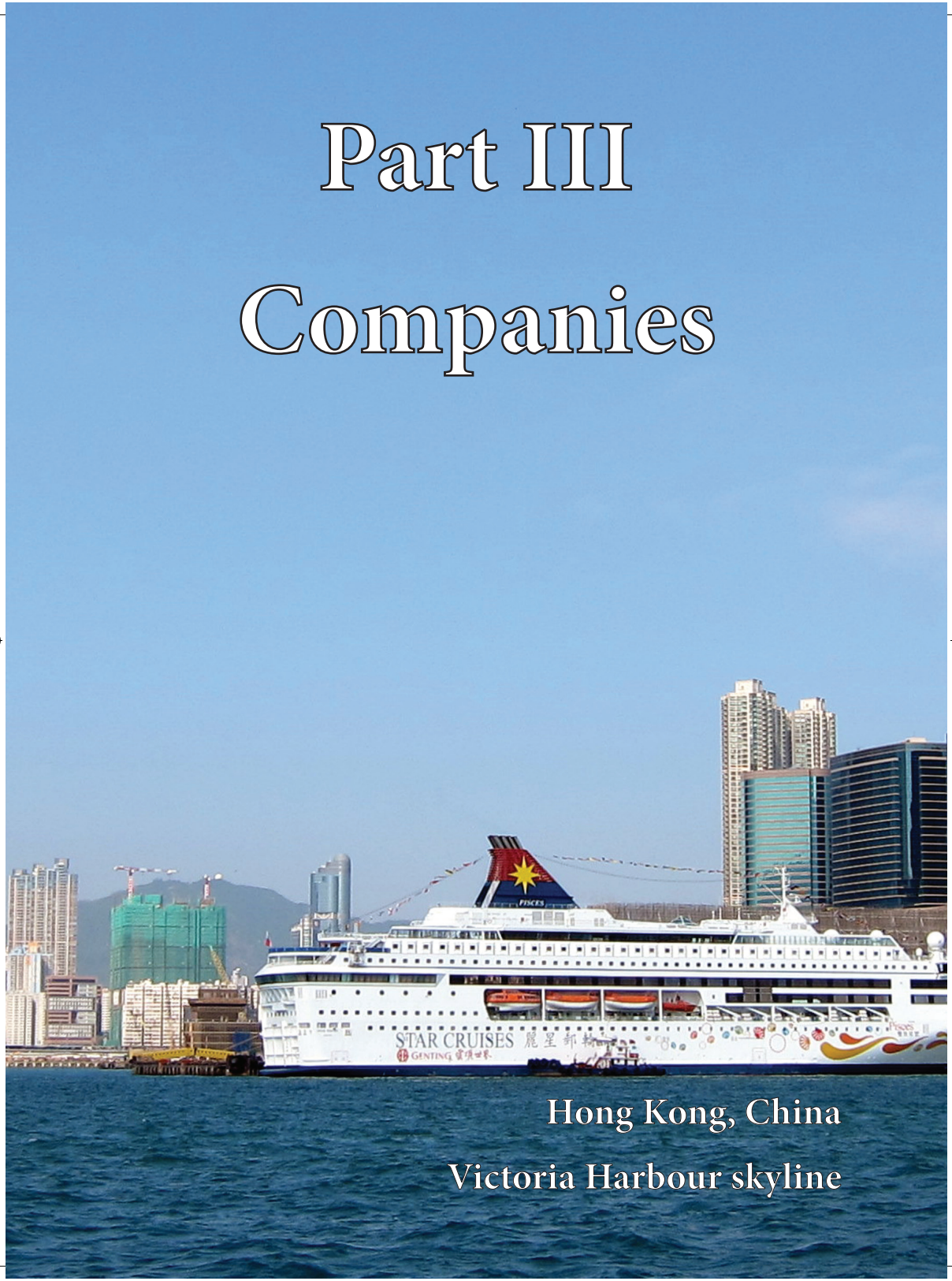
Saturday, 17 December 2011

The final day in Tokyo was mostly used to rest and to buy souvenirs. We didn't have to wake up early, so we could finally get some extra rest. Some ETV members had a little stress, because they didn't collect enough souvenirs during the study tour. Luckily, the travel committee reserved this day to buy souvenirs.

Fortunately, Nakamise, the biggest souvenir market in Tokyo, was just around the corner. Furthermore, some visited the imperial gardens, the market Ueno, Akihabara and Harajuku. We also had Japanese delicacies like Okonomaiyaki, Ramen soup and of course sushi in traditional Japanese restaurants. The next morning we had to wake up early for our long flight home, so almost all ETV'ers went to bed early, closing the final chapter of our active time in Asia.

Part III

Companies



Hong Kong, China

Victoria Harbour skyline

Brightsight

Case Study for:
Brightsight

Students Participating:
Jan Christiaanse & Joost Geelhoed

Brightsight is a company at walking distance from the university. It provides support to the development of systems that need to be secure and well protected. To deliver this it uses a lot of creative thinking and technical know-how. By using a sophisticated array of labs it has the capability to do this meticulously.

More and more people are using smartphones to easily do online purchases or banking, but how safe are these devices. Our case was to find out if a process could run in the background and log the data being typed in on a touchscreen without using the touchscreen interface.

When we first heard what needed to be done it definitely raised some eyebrows. But as sophisticated devices grow so did the sensors that are implemented in them. Could it be possible to use the sensors to predict the typed data and send them to a terminal?

We had the freedom to choose any cell phone we want. First we made a summary of the popular and modern cell phones. This resulted in the use of the Samsung Galaxy SII, because this phone has excellent sensors, the same as in the iPhone and was extremely popular at the time. Another advantage is that Apps for this phone are written in Java, which we are both familiar with.

We designed a modular program by first making a simple UML. Then we both started programming the different classes, such as a class to write data to the memory, another class to read out the sensors and a class to estimate the pressed key. To estimate the pressed key we used correlation functions.

For the test device we made a special option in the App, to store the sensor data on the device while pressing a key. To make the proper function to estimate the pressed key we first had to collect a lot of sensor measures for every key. These were then stored on the test device and exported to Matlab. Here we had the power to design an algorithm, which compares the measures of a pressed key to a predefined calibration set.

Soon we had a result of 85% of true estimations. So in case of retrieving a pin code the chance of a right estimation is 0.85^4 which is approximately 52%!

We've enjoyed working at BrightSight. It was a great experience to work in a small but innovative company. We had an own office and a lot of freedom in our assignment. Although it was pretty complicated we were able to achieve a good result with our knowledge gained during our study.

Cytobuoy

Case Study for:
Cytobuoy

Students Participating:
Wouter Brevet

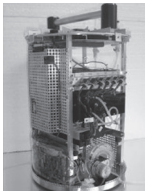
During the summer of 2011 I have performed a case study for Cytobuoy. Cytobuoy is a Dutch company that is currently housed in Woerden. The company specializes in building high-precision, high-speed Flow Cytometry devices, it builds devices that are capable of measuring and scanning a lot of small particles in water in a short time. I came in to contact with this company in 2008 via a friend and have been working for Cytobuoy for about one day each week ever since.

During the period of the 25th of July and the 12th of august I researched the suitability of several ideas that have been thought of to upgrade the current electronics of the CytoSense. The ideas that I have researched are all ways to increase the effective data rate of the transfer between the Cytosense device and the PC that it is connected to. In principle there are two ways to increase this data rate; the first way is to increase the transfer rate between the device and the pc and the second way is to build a filter that filters out data that is not wanted before it is sent to the pc.

To increase the effective data rate three ideas have been thought up:

- Equip the CytoSense with equipment from National Instruments.
- Add processing power to filter data before it is sent to the PC.
- Expand an already implemented DSP to filter data before it is sent to the PC.

National Instruments (NI) is a large American company that specializes in building data acquisition and instrument control equipment. They have several high-speed, high-precision data acquisition solutions that include a high-speed data link to the PC. The most suitable product for implementation in a CytoSense would be the NI FlexRio-system. Implementing this system in the CytoSense would greatly increase maximum samplerate, resolution and data rate of the device. The biggest disadvantage of this idea is the fact that the FlexRio-system is very expensive.



To research the second idea I have done some testing with an NXP ARM-processor. I have focused on testing the speed these processors were able to read and sent data and testing the speed at which they were able to calculate the parameters on which the filtering of the data would be performed. The tests I have performed were partly successful. The processors were quite fast enough to send and read the data. To perform the filtering however they were only fast enough in calculating some of the required parameters.

Researching the suitability of the third idea turned out to be a bit problematic because of some driver issues with the DSP-card that the CytoSense currently has. On paper however this should be a very simple way to both increase the rate of transfer between the device and the PC and perform filtering on the raw data, thus greatly increasing the effective data-rate. The filtering with the ARM-processors turned out to be the most suitable and at Cytobuoy we are currently continuing the development of this idea.

Deerns

Case Study for:
Deerns

Students Participating:
Richard Spijkers & Frank Teunisse

Deerns Raadgevende Ingenieurs has its headquarters in Rijswijk. It is an international multidisciplinary consulting engineering firm with a focus on buildings. The engineering done at Deerns is about the internal structure of the building. Some example projects are indeed offices, but the design of special purpose buildings, like hospitals, airports, data centres and laboratories is much more challenging. The design of these buildings requires quite some knowledge, as the designer has to deal with specific requirements like magnetic fields or the (backup) power supply for datacenters.

The latter is what we investigated for our case. Datacenters have specific requirements concerning uptime. This uptime is categorized in tiers, ranking from 1 to 4. Tier 4 is the tier with the toughest requirements, with a maximum of 26 minutes of downtime every year. This huge uptime is guaranteed by a good topology of the power supply of the datacenter, among many other things.

TIA, the Telecommunications Industry Association, has a guideline for the minimum requirements for a specific tier level for a datacenter. These guidelines are for the architectural, mechanical and electrical design of the datacenter. For example, there are architectural requirements concerning the distances from the parking lot and fence to the building, but also which tiles should be used inside the building. For the electrical design, the requirements concerned for example which batteries could be used for the uninterruptible power supply (UPS), how many redundant equipment and cables should be installed and also requirements for the backup generators. Of course, these are just examples. There are many, many more.

The original documents originate from 2005, but the requirements have been changed last year. We have studied the consequences from these changes for the electrical design and specifically the topology of the power supply. Furthermore we had to convert these consequences to basic schematics. We have documented the consequences and schematics and presented it to Deerns as a lunch lecture.

During our short internship at Deerns we started to realize what a tremendous amount of engineering work is embedded into a building without us even noticing it. Climate control, a stable power supply, internal telephone and computer networks, all are used unnoticed in an average building. The LIT (Laboratories, Industry and Telecom) group, where we were located, even does much more challenging work than this.

This case study was a very interesting and valuable experience for us. We had the opportunity to experience one of the options that you could do at Deerns as an Electrical Engineer and we are glad we were given this opportunity!

Epyon/ABB

Case Study for:
Epyon/ABB

Students Participating:
Rolf Bilderbeek

The world turns increasingly towards greener technologies and solutions. One of these developments is the electric vehicle. Glimpses of this rapidly growing technology market were shown to me during my case for the Sunrise Study Tour at Epyon/ABB.

During the period I worked on the case the company was still called Epyon, but it now has been taken over by the company ABB, which is global leader in power and automation technologies.

Epyon/ABB is specialized in providing innovative and efficient technologies for an electric vehicle charging infrastructure. They're making AC regular and DC fast charging stations and have developed management software for this growing network of charging stations.

An Epyon/ABB DC fast charging station with a Nissan Leaf being charged

My work itself was unfortunately less exciting than the fast developments in this world, but still it was fun to do. My case consisted of two tasks.

The first one was assisting in structuring the bills of materials of certain products. It was quite interesting to see what kind of components are used in a for me 'black box' called a DC fast charging station. One of the lacks of the TU Delft is in my opinion the relatively little experience you get with components used by companies. You get lectures about the theory and the new technologies still being developed, but not about the basic components used. Only electrical engineering students who build a lot of electronics in their spare time will get this knowledge and experience.

The second task was making a manual or road map, what to do when there is something wrong. It was fun to get in contact with a lot of people with different specialities from hardware to software.

Between 50-100 people are working at Epyon. It's nice you get to know people quite fast at the branch in Rijswijk, especially because of most people are lunching together in the central lunch-room. The atmosphere on the work floor is really open and friendly.

During this case and now I'm also working here my view on electric cars has completely changed. First I saw no future in electric car, because of the small distance it can travel with a fully charged battery, but as the batteries are still improving and with the fast charging solutions of Epyon/ABB electric cars definitely have a future in my opinion or even are the future. Driving an electric vehicle is great. The acceleration is like a roller coaster ride and it drives very relaxed.

The charging time has been reduced to approximately 20 minutes, but the range of only +- 100 km is still the bottle neck. More and more charging points are built at restaurants, car re-sellers and fuel stations, so larger distances can be travelled. The infrastructure is growing rapidly and in the auto branch new electric cars (like the Tesla Model S Alpha) are being developed with a range of almost 500 kilometres. Hopefully we will all drive an electric car in the future.

The new Tesla Model S Alpha with the Tesla Roadster on the background. The model Model S Alpha can have a range of almost 500 km

DNV KEMA

Case Study for:
DNV KEMA

Students Participating:
Tim Feenstra

I have performed my case study with DNV KEMA Asia Pacific, a subsidiary of KEMA International B.V., a leading authority in energy consulting and testing & certification.

The Sunrise Study Tour committee knew that my area of interest is Power Engineering. When this case study came available they contacted me and I accepted it immediately.

The goal of this case study was to perform a little market research to see where DNV KEMA stands national and international in the Chinese market. The subjects I covered are Power Generation and Transmission & Distribution. This case study was challenging because my resources where limited to the internet and some Chinese PhD students doing research at the TU Delft. I found it to be very hard to get some good results. The Chinese language is hard to translate and the companies of interest almost all have websites written in this hard language. Another big problem was the fact that company numbers given on their websites where almost always wrong.

Because my client is settled in Beijing it was straightforward that I wanted to visit him during the Sunrise Study Tour. We made an appointment and Friday November 25, 2011 I saw my client for the first time. I was able to take three other participants of the tour with me. My client prepared a short presentation about DNV KEMA Asia Pacific. After the presentation and a short discussion it was my turn to tell something about my case study. I gave a short summary and after my presentation we exchanged business cards. It was a very interesting visit that I will remember.

After the Sunrise Study Tour I had to finish my study case. With all the resources I had I collected the information I needed. With this information I was able to set up a final deliverable. This deliverable contains company profiles, advises and some conclusions pointed at DNV KEMA in the Chinese market.

I enjoyed my study case. It was nice to do some research in the area of my interest. I learned a lot from this case study and it made me even more enthusiastic to Power Engineering. Market research is new to me so there are still some points that can be improved. I will definitely remember the great time I had at DNV KEMA.

Klaver Technisch Bedrijf B.V.

Case Study for:
Klaver Giant Groep

Students Participating:
Lennart Klaver

Website: www.klavergroep.nl

The Juniorcollege at Julianadorp is a Lyceum school for pre-university education. The building is an architectural eyecatcher in the landscape due to its round shape. The building has a couple of environmental friendly features. For example the atrium roof exists of plastic material which allows sunlight to heat the building, but keeps cold outside. The building is naturally ventilated by using special hatches in the top of the building. This project was completed in 2008.

After the official start there were a lot of problems with the Building Automation System. For the teachers it was too difficult to control the heating and sunscreen systems, or these systems malfunctioned when used. The natural ventilation system didn't work correctly, opened when the building was closed or opened when there was rain and wind instead of closing. The heating system was uncontrolled so the building was hot in the summer and cold in the winter. Due to improper control the ventilation for the classrooms and toilets didn't work at all. The lighting in the atrium and classrooms didn't respond correctly on central commands and local movement sensors. These malfunctions gave a lot of trouble and uncomfort to the customer.

The constructing company, which designed and build the automation system, failed to resolve the problems after multiple tries. The customer decided to quit the existing contract and contacted Klaver Technisch Bedrijf B.V. to resolve the problems encountered.

We have investigated all of the building systems and delivered a report to the customer. After this the on-site systems were redesigned, re-engineered and the software rewritten. The hardware is inspected, maintenance is executed and repaired where necessary. My job was to do project management and planning. I have inspected the on-site systems, produced the report and wrote the main design of every system. These designs were implemented by my colleagues, in which I had global supervision. The case was a part of this project.

At moment of writing the project is completed successfully. The customer is very pleased with the results and the good care we took. The execution of work did not interfere with lessons and was mostly after school time to bring disturbances to a minimum.

The building systems work as planned and are easily controllable by using touchscreens with clear and easy-to-understand interfaces. The climate in the building is comfortable again.

About the Klaver-Giant Group:

The Klaver-Giant Group exists of nine independent companies, each with its own speciality:

- IT
- Telecommunication
- Security
- Automation
- Electrical Engineering
- HVAC
- Public infrastructure

The main focus is the customer. By focussing on a special branch of technology, every company is able to react fast on new developments in the market. Marksmanship, innovation, leadership and quality are keywords for the Klaver Giant Group. The companies work together to deliver a better service to the customer.

Every customer has his own contact person during an entire project. This way the customer is ensured to always get the best specialist for every challenge.

The Klaver Giant Group is a customer-focussed company, in which a long-time relationship with the customer is important.

For more information, please visit www.klavergiant.nl.

Legrand Group

Case Study for:
Legrand Nederland B.V.

Students Participating:
Daan Schellekens

In the summer of 2011 I did my 'Sunrise Study Tour Case' at Legrand Nederland B.V. in Boxtel. Legrand Nederland B.V. is part of the global operating company Legrand Group.

In 2011, Legrand was world number one for switches and sockets (low voltage installations) with 19% of the global market and world number one in cable management with 15% of the global market. The company is market leader in at least one of its main areas of business in 27 countries. Legrand Group is also developing its ranges around sustainable development and energy saving with a protection range for photovoltaic installations and a lighting control range.

For my case I was at the Dutch division of Legrand. The former Van Geel Group, which was founded in Boxtel in 1941. Because I'm born in Boxtel and have lived there till I moved to Delft, I know this company very well and it was logical to contact them and ask them whether they were interested in a case.

After a short interview in June 2011 Legrand decided that they wanted me to write some White Papers about some 'hot items' in the field of Electrical Engineering.

Frans Spijkers, the marketing manager at Legrand Nederland B.V., already collected a lot of articles about different subjects like power quality, wind energy, electrical vehicles, LEDs and wireless communication. So the first day I had to read quite a lot of paperwork. After I had done that I had to collect even more sources to write informative and reliable White Papers.

These White Papers are now published at their website about energy efficiency: www.eenvoudigenergiebesparen.nl and they are meant to be read by local installers. So they know a little bit more about some common problems which could occurs sometimes. Legrand is even interested in some more White Papers.

It was very interesting to write those White Papers because I first had to read a lot about subjects which are very interesting. Especially power quality and electric vehicles are very unknown and important subjects.

But I also experienced that having a normal office job is not really my thing. Just sitting behind your desk, drinking coffee, having fun with you colleagues and listening music. After one week every day is the same. But doing such kind of internship was a very good, educational and nice experience.

Neurasmus B.V.

Case Study for:
Neurasmus B.V. / Erasmus MC

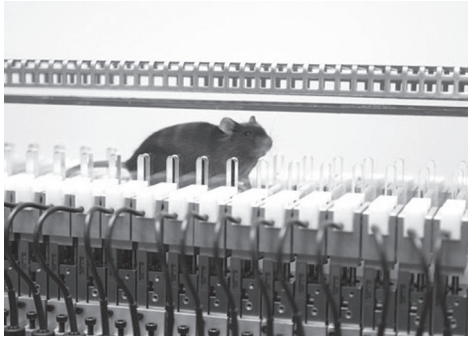
Students Participating:
Jeroen Ouweneel & Matthijs Weskin

For our Bachelor's final project, we had been working on the development of a new sensor for the Erasmusladder – a device that is used by the department of Neuroscience in the Erasmus Medical Center for performing neurological research by studying motor behaviour of mice. The general idea is that certain walking patterns correspond to motor disabilities, and to study these patterns, the department has developed a fully automated ladder with pressure sensors, that measure the exact movements of a mouse for a number of runs.

The department, however, soon wanted a better constructed and more customizable version of the ladder. Since the hardware used in the first Erasmusladder was outdated, a new control system was used. The 'brains' of the ladder is a 'Compact RIO (Real-time Input/Output)' system from National Instruments. This is a hardware platform, in which 'modules' with analog or digital inputs or outputs can be placed. These in- and outputs are then controlled and read out by a built-in real-time OS, and an on-platform programmable FPGA.

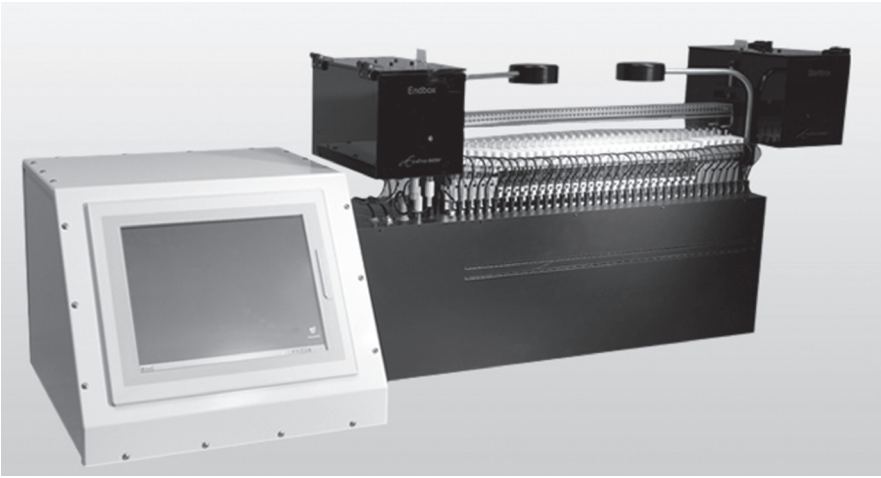
This is where our case started off. While the old ladder also used National Instruments hardware, the software part, written in LabView, could not be reused since the premade software blocks don't work on the new CompactRIO system. Our job was to rewrite the old software to fit the new hardware, using the built-in FPGA as much as possible (since the used barebone PC is not reliable enough for real-time control and measurement). Our direct supervisor was Christos Strydis, a TU Delft graduate who now works for the department of Neuroscience, and we also got a lot of explanation on the ladder by one of its designers and head of the Neuroscience department Bas Koekkoek.

After setting up our workplace, we started off by analysing the old software to determine the exact workings of the ladder. Since LabView is a graphical programming language, this turned out to be quite a challenge (for example, in case statements, only one case can be viewed at a time). Also, there is a prediction algorithm which analyses the movement of the mouse as it is running on the ladder, and places a barrier if certain conditions are met – which we tried to reverse-engineer. A short explanation from Bas, however, turned out to be much more informative.



The Erasmusladder working with a mouse on it

In the meantime, together with Christos, we divided the program in blocks, based on the inputs and outputs of the ladder. Next, Jeroen was responsible for the input- and output blocks and the main state machine, which controls and times these in- and outputs, both in LabView. Matthijs turned to VHDL for the prediction algorithm and barrier control, which could then be implemented in the LabView program. After four weeks of work, almost on the last day and after hours and hours of compiling, testing, rewriting and compiling again, we got the entire system to run by itself – successfully ending the case (although some testing and tweaking is still necessary).



The Erasmusladder Version 2; left: the real-time computer, right: the sensors and electronics

Our main experience is that the Neuroscience department is a very active department, with nice and enthusiastic co-workers, making for a nice working environment. Also, while generally easy to use, it is quite hard to make LabView programs neatly structured and efficient, since the underlying program of premade blocks can't be viewed. All in all, we both enjoyed the case very much.

Pinewood

Case Study for:
Pinewood B.V.

Students Participating:
Tom Verboon

I have performed my case study with Pinewood B.V., a small company with a focus on information security. Since I am now working on my Master's thesis, I have already started with my orientation on the labor market. After my initial contact with the company, IT and security have my deep interest, a case study seemed a suitable occasion to deepen our relation. The case study to me is a combination of getting to know the company culture, as well as earning a contribution to the upcoming trip.

Pinewood welcomed me warmly on their floor in a tall building in the Delftechpark, located between the former Architecture building and Highway 13. I was assigned to investigate the performance of a specific solution for corporate mobility management. This software solution manages and monitors all mobile devices in the company's possession, like smartphones and tablets. Subsequently, the administrator manages firmware updates and new applications from its desk. If a device behaves suspicious, the administrator can change the password, lock or wipe the device remotely. So, company data will never get into criminal hands.

I have tested a particular solution, which I could install in Pinewood's test server park, simulating a moderate company server park; including corporate user accounts, mail accounts, firewalls, etc. For different device manufacturers, the software performed differently. This is partly due to software limitations, but more to the limitations enforced by the operating systems. In my three weeks exercise, I assessed the software extensively. Moreover, I discussed several bugs with the product manufacturer.

The exercise was concluded by a final presentation to security consultants and senior consultants. I strongly hope the final results become a valuable contribution to Pinewood's knowledge base. To me, the case study has been an exciting opportunity getting to know the people at Pinewood and getting to know the security business. We will definitely stay in touch afterwards.

Studieverzameling

Case Study for:
Studieverzameling TU Delft, faculteit EWI

Students Participating:
Stephen van 't Hof & Alexander de Moes

The status after 2 x 300 man-hours:
- Number of books cataloged: 2991
- Number of cabinets cataloged: 19
- Number of units sorted: 8

In the summer of 2011, Alexander de Moes and Stephen van 't Hof catalogued and sorted books in the Study Collection of the faculty EWI . This case was presented by Professor Lou van der Sluis and Han Geijp, respectively lover and manager of the Study Collection. In contrast to most cases, more work had to be done. We worked for three hundred hours total.

First we set up a plan. We looked at how the university catalogues and sorts books. We have spoken with Eric and Marina Lebedeva Rumondor. After we looked at several sorting software, LibraryThing was the best option. LibraryThing is a Web site designed to keep a private library, with the ability to copy information about the books from library databases. This reduced the amount of work considerably. Furthermore, all forty bookcases were numbered.

We then started cataloguing the books. We put about three thousand books into the database. That is half of all the bookcases. Of all these cabinets, we have removed the duplicates. Finally, we sorted eight bookcases in alphabetical order. That was when the three hundred hours were over!

Besides sorting work, we have created a website for the study collection and we tried to include the collection in the special collections of the Central Library. This gives the Study Collection more attention and budget. On the website we shortly explained what the study collection involves and you can also search the database. The website can be found on studieverzameling.ewi.tudelft.nl or our Faculty page at 'the faculty'.

We think another two to three hundred hours will be needed to catalogue and sort the rest of the book collection of the study collection.

Working in the Study Collection provides a good overview of the history of Electrical Engineering in our faculty, the Netherlands and in the world. The books describe the rise of electronics, mainly as a mathematical discipline. After that, the practical applications in telecommunications (the first telephone links with the colonies of Suriname and Indonesia) and high voltage (Detailed reports of the power plant in Maastricht). Then published books with the first electron tubes (including many bookshelves of data sheets) and a few decades later, the first transistors. There is also much written by our professors and the faculty. It appears that many Dutch textbooks on electrical engineering exist, from old times. It is very interesting to browse through these books.

Han Geijp and volunteers of the Study Collection and Foundation for the Blue Tram have always enthusiastically received us. We had tea with biscuits together regularly, with biscuits and we received wonderful stories about the university every time.

SystematIC

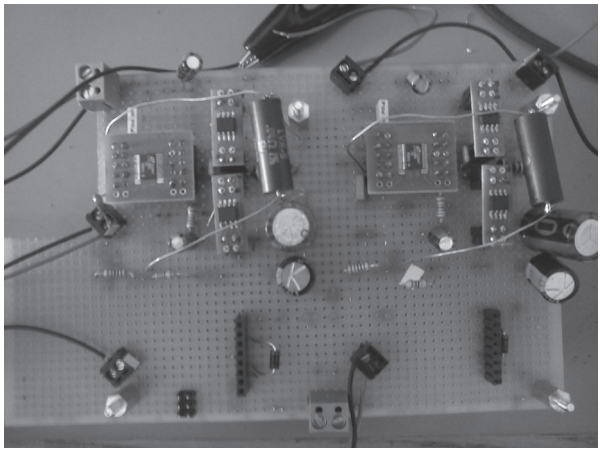
Case Study for:
SystematIC

Students Participating:
Jesper van Beek

To finance my study tour I did a case at SystematIC in Delft (www.systematic.nl). SystematIC Design is a young and dynamic IC design company offering various services in Electronic and Integrated Circuit design.

The assignment I had to do, was construct a motor drive for a brushless DC motor. The specific things for this motor drive were:

- The motor had to rotate clockwise and counterclockwise with different RPM
- The current had to be limited to 1A

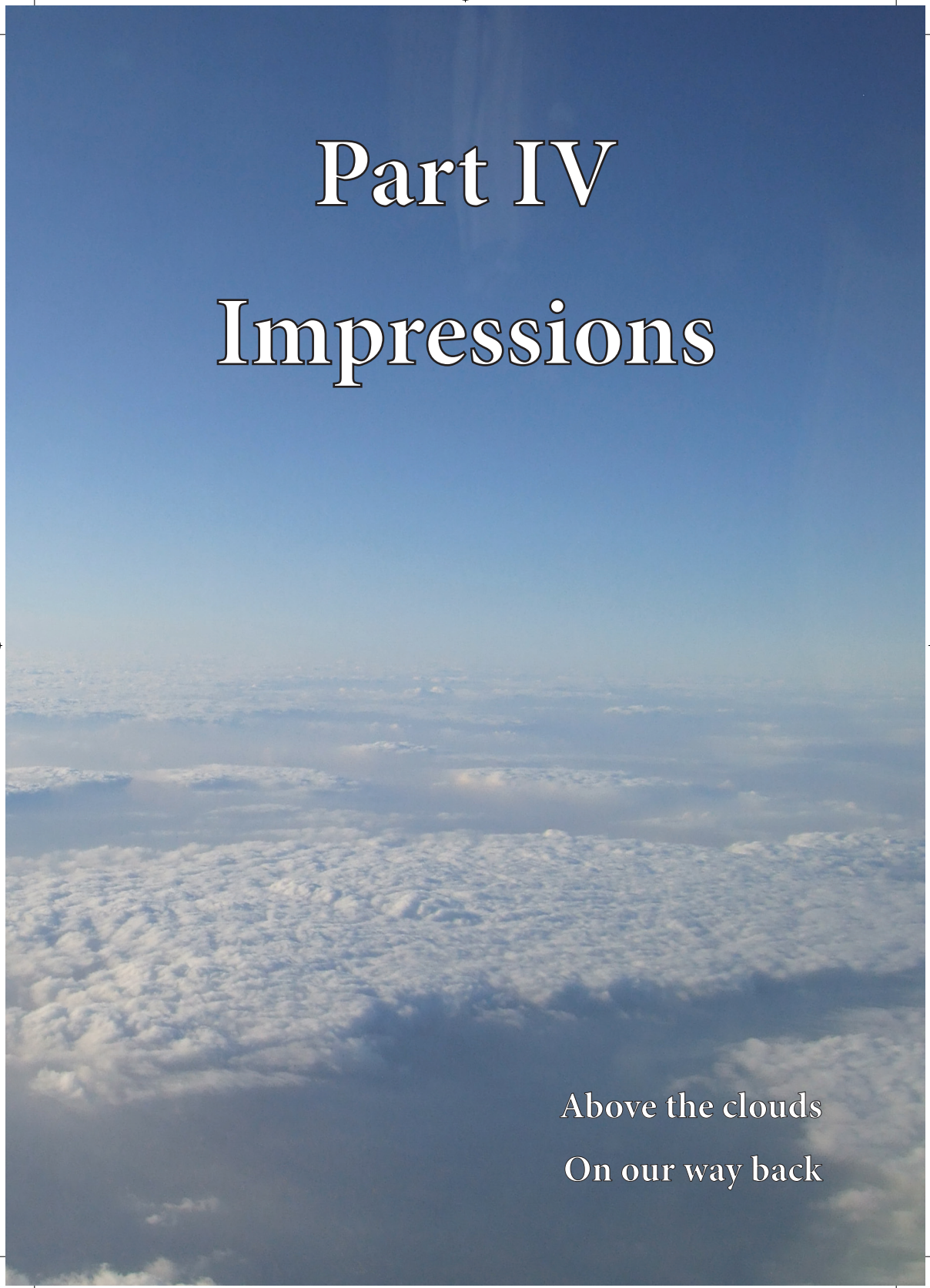


To come to a solution for this problem I had to investigate several chips of different manufacturers like 'Linear Technology' and 'Maxis'. The most time I had to investigate in understanding all the principles behind the chips (e.g. bootstrapping). After making a schematic in LT spice I had a draft of my electronic circuit. After ordering all these parts I started a 4-day session of soldering the whole schematic on a board. In the end the motor was running although I couldn't complete the current limitation because of the fact that a very low resistance controlled this current limitation and this could only be done on a SMD-scale.

Looking back on my case I can say I learned a lot from this month working at SystematIC. I learned a lot about the usage of semiconductors and some extra things considering electronic circuits. Furthermore I got some experience in making a motor drive and the assortment of chips that are used for these kinds of applications.

Overall I can see I have learned some things I am convinced of using them in the future. The month I have worked for SystematIC I have found very interesting. In the beginning it was pretty heavy but thanks to the help of my colleagues I was able to finish my project in time.

Part IV
Impressions



Evaluation

Already in the week before the start of the tour it became clear that we had gathered a calm and cooperative group of people that were eager to step on board of the KLM flight to Beijing. We noticed this during the presentations that were given during the symposium that we organized before the tour to get more acquainted with the countries we were about to visit. Already the participants forced themselves to pay good attention even if they were exhausted from the late-night drinks of the day before. Despite the fading hangover most participants managed to come up with interesting, funny and intelligent questions to ask the presenters of the symposium.

The day after the symposium the whole group came together and enjoined the first of many group dinners. Already most of us left the fork and knife on the table and ate their rice and sushi the way it is supposed to: with chopsticks. Drinks were offered all around making it a bit harder to remember the names of the fellow participants. Since the coming four weeks would give plenty of opportunity to practice names this did not matter at all. At least the rule to never drink alone was not broken.

Not only the interaction between participants started smoothly, also the interaction between the committee and participants was jumpstarted during the first diner. Committee members spread out over the big table reserved for us and started mingling in the group we were about to guide the next four weeks.

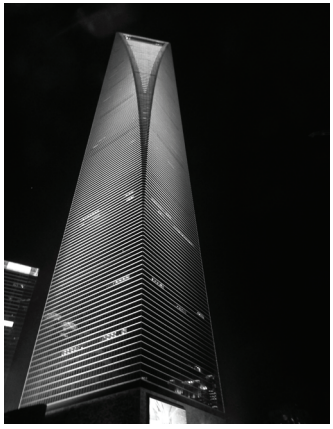
Finally, after over a year of preparation, the departure day had come. Fortunately the departure time was late in the afternoon, so everyone could enjoy a comfortable night sleep before departing to Schiphol Airport. This made it easier for parents, girlfriends, boyfriend and of course the board of the ETV to wave us goodbye and wish us the best of luck with a small shot of 'Vlek'. Remarkable was that almost everybody wore the red sweater that was specially ordered for this trip. Another sign of a group functioning as one.

The first time we practiced our way of checking if everybody was present by shouting numbers, 'het telspel'. It was finished faster than everybody could have imagined. Later during the trip the response time got a bit worse but still this proved to be a very effective way of counting and keeping the group together.

The first of many subway rides (in Beijing, China) was a small hurdle to overcome. Just a moment before we agreed that at all circumstances one of the committee members should be at the end of the group so that no one was left behind. Since it was rush hour this proved to be very conveni-

ent because we could not all fit into one train. Just five minutes later the next one arrived and since we all carried a copy of our detailed travelling program the stop to get off was quickly found and the group was back together. From that moment on we learned to spread out over the platform and let the tall guys enter first. In that way they could grab the handle and pull themselves in and make some room for their friends.

During the party that was organised to celebrate the opening of the TU-Delft Beijing research centre it was again clear that the group was not afraid to show some initiatives. Even in sober conditions some of us dared to step up to the Chinese girls that were present and fill the floor with traditional ballroom dancing that most of us probably had not been practicing for years. Although our moves probably did not impress the girls, we, as well as the professor, had a good time.



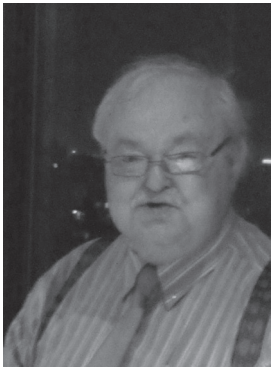
Although the group was as one big happy family during the day, during the night there was some difference between participants. It didn't took long before the so called 'party crew' was formed. While some preferred to stay at the hostel, Skype with their girlfriend and go the bed, the members of the party crew were always looking for the cheapest drinks. Although they usually planned on getting back to the hostel early they always managed to stay out until deep in the night. Despite the partying most of the time they were awake and down in the lobby on time and managed to stay awake during the excursions. Probably by using the valuable time spent in subways and trains to get some additional sleep.

Another example of good cooperation and showing initiatives was when it turned out an error was made in the reservation of hostel rooms and some of us had to share a twin bed. Immediately some couples stepped forward and volunteered so that the problem was quickly resolved. Even when the plane tickets we booked were expired and needed to be rebooked most joined in the organisation and checked for available flight options. Even a cash deposit to buy new tickets was made without arguing.

In summary, we could not have wished for a better group to go on tour with. It might have been hard work in preparation, but when it all comes together the way you planned it just feels great. We had lots of fun with the five of us during preparation and even more with the whole group of 22 participants.

Impressions

Prof.dr. Beenakker



Finally they arrived on Sunday morning of November 20. For several reasons I was already in China since November 3 and I was looking forward to the nicest part of my trip, to meet the group of ETV students and to accompany them during their trip to Beijing and Shanghai. It was not my first time to participate in a student study tour and it always had been a pleasure to see how enthusiastically they are in getting to know new cultures and how well they represent the Delft University of technology during the visits to universities and industries.

So around 10 in the morning they passed Chinese customs. It was obvious that they had prepared the trip very well. Although being for the first time in China they had chosen to travel by public transport. Without any problem we arrived one hour later at the hotel. The next day started already with a highlight, the opening of the TU Delft Beijing Research Centre located at the premises of the Institute of Semiconductors in Beijing. After the official part chaired by the dean of the faculty of EEMCS, Prof. Rob Fastenau, Dutch and Chinese students were challenged by a quiz "How well do you know each other". The quiz was lost by the Delft students. Unfortunate, but a useful first confrontation with the Chinese culture. The Delft counterparts had prepared for days with a high ambition to win, the Delft students had taken it more easy. Next another important experience: a nice dinner, but chopsticks had to be used. And finally there was a big party. Soft drinks only! Students and professors did show how well (and for the latter also how badly) they could dance and sing.

For the next days the travel committee had made an excellent program, visiting universities and industry in Beijing and Shanghai. But also ample time was left for experiencing the daily life in China.

On December 4 the study tour travelled to Shenzhen, I went home and my colleague Johan Smit took over. Looking back I concluded that the tour was very well organized maintaining a good balance between group and individual activities. The atmosphere in the group was very good. So compliments to the organizing committee. But most importantly I have seen a group of students being able to operate well in an entirely different culture and in a country they will for sure deal with intensively in their future professional career.

Prof.dr.ir. French

Unfortunately I was only able to join the Sunrise tour for a short period, but this was sufficient to get a good impression. I think the choice of locations was excellent. China, Korea and Japan are important players in the international field of electrical engineering. My part of the tour was Japan, where I lived at the end of the 1980's. From the start there was clearly a good atmosphere between the students and this continued throughout my time in Japan. The ETV had organised the whole tour extremely well, leaving no room for confusion. We only lost one member once. He had fallen asleep in the train (very Japanese) and missed the station. One of the Study Tour committee managed to find him (in a very large city) and bring him to the right place. This also showed the alertness of the committee to problems and the ability to act. I participated in four visits. The first was Mitsubishi. Unfortunately I was only able to attend the end of the visit after my arrival at the airport in Osaka. The afternoon visit was at Omron, where we saw how the factory is organised and the procedures to ensure optimum use. The third visit was Nissan Motor Company (which was my work place, when in Japan). This gave the members a good view of the workings of an automotive factory. In particular, how at this factory several different models can be made on a single line, using a logging system. Each car has a code, and the system ensures that the right parts join the car at the right time. Also we saw the human-machine interaction. The final visit in my part of the tour was to the University of Tokyo. This is one of the top universities in Japan and also the world. We visited a relatively new location for electrical engineering on the edge of the centre of Tokyo. We were received by Prof. Fujita who explained the structure of the institute and we had a number of presentations from researchers. The visit ended with a discussion between Delft students and PhDs from Tokyo (both Japanese and foreigners). This was a successful end to the visit as lively discussions continued until the end of our visit.

The whole visit was a very enjoyable one for me, visiting old friends in Japan, and making new ones. Also seeing how well the Delft students represented our university, and the Netherlands.

Prof.dr.ir. Smit

In Spring 2011 the organizers of the ETV Study Tour 2011 asked me about my willingness to join the Sunrise. Without any doubt I blocked the dates, being interested to travel together successively through countries like China, Hong Kong, South Korea and Japan. Then we could experience how different stages of economic growth influence daily life, work and education.

From the very start I enjoyed very much how sympathetic the group was taking good care of each other as well as of the professor accompanying them. For example how socialized you distribute zero star hotel beds and how sunny teams took care that everybody was in good mood present in the early company visits. In Seoul Sint Nicolaas surprised us all with a present with poem and a second dinner on the same evening, and a nice book to cook Asian myself , thank you. Another fact was we got never lost due to good trip coordinators despite the complex public transportation means we used. Last but not least is the very positive (quasi) academic atmosphere. Remarkably how all our visits went, well dressed and with expressing real interest and respect to our hosts. The organizing team did really a very great job, and moreover all participants stayed cooperative and friendly all these weeks so close together!

Regarding the tour visits, nowadays electrical power has to go to all those new industries and modernizing households in Asia. Many power plants and ultra high voltage transmission lines have to be build. With respect to the latter the biggest UHVDC test bases was in the program on kind invitation of prof. Rongcheng Li. I missed to meet him, but also the reported low temperatures in Beijing. I was happy to receive the "cool" group at Shenzhen airport at 30 °C.

The Shenzhen development area changed from a small village into a modern city with new industrialization. Interestingly we saw both sides of fast growth, bringing prosperity on the one hand and stress on the other hand. In that regard we learned that academic education is needed over a wide range from high-technology to psychology. Visiting the Electrical Power Department of the School of Engineering of Tsinghua University in Shenzhen was of high level, and friends were made at the great dinner party nicely hosted by prof. Guan Zhicheng. Next we went through a western transition via Hong Kong to Seoul, visiting big industries marketing in Europe well known electronic and car products. Unexpectedly I also joined the tour to Osaka, where economy matured as in Europe. Company visits were well chosen covering innovative areas like renewables, e.g. the big Solar Ark making my journey in the land of rising sun complete. Overall the Sunrise tour gave me the feeling that this was for all of us a once in a lifetime experience!

Jesper van Beek

In one word this study tour was: "amazing". The things we have seen, the impressions we have gotten; it was all very special. The differences between these Asian countries are bigger than expected; especially between China and Japan. The differences between the more selfish Chinese and the extremely polite Japanese are bigger than the difference between Dutchmen and Germans. The cultures were very interesting to see and were a real eye-opener compared to the things we do here in Europe.

About the excursions I can only say that overall we have seen some great things. Interesting presentations and impressive assembly and production lines are things I will remember for quite some time. All these visits to the companies gave me a good feeling about working for one of these companies in the future. The universities were also interesting. The differences between the student-professor-relation at different universities were remarkably. I enjoyed the festivities with the different professors and students.

To conclude this short evaluation I would like to say that I had a great time with all the participants of the group. I will remember this trip mostly because of the great ambiance and the fun we had together. I hope we all stay in touch in the future.

Rolf Bilderbeek

How can you evaluate a study tour of 30 days in 200 words? You can't! The tour was really amazing, but already feels like ages ago. Every city was completely different. Beijing was beautiful, because of its many old buildings and of course the quite nearby located Great Wall. I was afraid the Great Wall would disappoint me, because I've seen it quite a lot on Discovery Channel, but on the contrary, standing on the wall, looking at a 'stone snake' crawling over the mountain ridge was really impressive. Shanghai and Hong Kong were more similar to big European cities. South Korea was special, because of the unexpected cultural differences. In China and Japan everybody was looking at us, tall blond Europeans, but in Korea nobody noticed you. Only secretly you saw some eyes pointing shortly into your direction. I really liked the sushi in Japan and it's fun when plates with sushi are moving along a big bar on some kind of conveyor belt. The visits to companies and universities were also very interesting, because you get the chance to talk to local employees/students, which you do less often on a normal holiday. There are so many things to talk about, but therefore you just have to read the tour diary.

Wouter Brevet

I really enjoyed the Sunrise Study Tour! It was great to experience the difference between our western culture and the eastern cultures. During the visits to company's and touristic attractions we had the opportunity to see both the working culture and the traditional culture of China, South-Korea and Japan. Especially the working culture of the country's we visited is something that would be hard to experience without actually going to work and study for a while in an Eastern country, so I am really glad I got to know something about that during this study tour.

What I did not expect was how big the difference between the cultures of China, South-Korea and Japan is. The way people interacted with us, a visiting group of westerners, was quite different for each country. Finally I also got to know some of my colleagues a bit better during the study tour, which would not have happened in Delft because of the amount of stuff I usually have to do.

Jan Christiaanse

Going on the study trip to Asia was a huge experience for me. Every city we visited had its own culture, with different kind of people and companies. In China the first thing that I had to get used to was that everyone wanted something from you, if it were a picture or just to sell you something, it didn't matter, but was fun to watch as 5 cameras got pointed at you while you were just eating at a restaurant.

In South Korea, the people kept in close groups and the companies, which really kept their technical knowhow secret, reflected this. Finally arriving in Japan I again experienced a completely different culture. People were very polite and the companies gave good insights at how their products were manufactured. When visiting the Omron plant we even got a bow by the employees.

Reflecting back on all that I saw, with a fun group of people, it was an experience of a lifetime. Actually seeing how, many of the products are being manufactured and by which means the different companies found solutions, gave me a new understanding on how EE is used to solve real life problems and build innovative solutions.

Rico van Dongen

Since I returned in the cold and rainy climate of the Netherlands people asked me to tell all about the tour. Due to the tight schedule and continues flow of information I am having trouble to keep up with the experiences myself and reproducing them in a story. One question in particular is difficult to answer. What is the most impressive experience of the trip? I cannot give just one since all of it was absolutely awesome. I can, however, mention a few. Below you will find some short anecdotes.

China:

- Good for the environment, bad for your ankles.
- Using the bathroom at 400 meters with a view, unless you are afraid of heights

South-Korea:

- Carousel at the start of the demilitarized zone. It seems like it is only there for tourism but then a Chinook passes over your head.
- Indoor barbequing and cutting your meat with scissors while waiters laugh at you.

Japan:

- 'Thank you' after everything you do, even if you're back at the tour bus and late.
- One vending machines per 7 residents.

Joost van Driel

Even though we (the organizing committee) had prepared the Sunrise Study Tour very well, it was still unknown what we could expect really in Asia. Happily, one of the first sights in Beijing from the airport express train was the IKEA, so it felt a bit like home. The cultural differences are clearly recognizable and it was good to see that. Thankfully, we have seen a lot of culture, both inside the companies and on the street, many of that can be read in this report. The three countries can be distinguished by the bit dirty China, the booming Korea and the always polite Japan.

My main highlight of the tour was the visit to the World Financial Centre in Shanghai, the observatory was located at floor 100 (500 meter) and the excursion to Nissan in Tokyo. It was great to see all the automatic vehicles carrying goods through the factory, with their nervous music. It made it a special morning, especially after seeing the big stack of vehicles that were ready to be shipped to America and Europe. I will not forget these four weeks easily! Many thanks to all the participants that followed us 'blindly' with a big smile at their faces!

Tim Feenstra

Saturday November 19, 2011. The first day of the Sunrise Study Tour. A day I shall never forget. A group of 21 men and 1 woman met at Schiphol airport for maybe the biggest journey of their lives. During this tour I saw different cultures and behaviors. Some of the aspects of these cultures and behaviors are very interesting, while some of them are a little bit strange. I like the architecture in all the countries and I like to see how all the people are connected to their faith, each in their own way. The Chinese food is very nice but I was very delighted to change the rise for some western food. I like the BBQ restaurants in South-Korea and the Japanese fish is very good. The companies we visited are very interesting. The companies in my area of interest, Power Engineering, are CEPRI, KEMA and Philips. My KEMA visit was off the official Sunrise Study Tour program. I arranged a private meeting because my case study was related to KEMA Asia Pacific.

During this tour I became a lot closer with all the participants. The group worked well together and I hope we can do a reunion some time to bring back the great memories we have experienced. This tour was very special for me and I would advise everybody to participate on a study tour like this once. Thank you Sunrise Study Tour committee. Thank you participants!

Joost Geelhoed

In the beginning of 2010 I made the decision to join the Sunrise Study Tour. For a long time I was in doubt, because going on this tour means that I wasn't able to do the courses of that period. Besides the study delay it also costs a lot of money for a student. Unless this disadvantages I decided to go and since then I became more and more convinced that I've made an excellent choice.

For me it was the first time I visited Asia, so I was very curious about the culture, especially the human interaction, because that's quite different than here. Like I expected the Asians are very friendly and threat you with very much respect, sometimes a little bit too much maybe. I remember that we were at a company and whole groups of employees stand up and bowed for us when we walked in the room. It amazed me that companies are growing very fast in Asia and that almost every western company has divisions over there. Besides experiencing the social differences it is great to visit metropoles as Hong Kong, Shanghai and Tokyo and visit cultural sites as the Great Wall, the Forbidden City and the Demilitarized Zone in Korea.

Stephan Groot

Living up to a great adventure can sometimes be as exciting as the experience itself. That's why the weeks leading up to the Sunrise Study Tour I got more and more exciting, and I noticed my expectations getting even higher than before. All the makings of four fantastic weeks were there: 7 interesting locations, a challenging program and of course a very nice group of participants!

Now, a couple of weeks after the tour it's time to look back at the many things we've experienced. From the moment we've touched the Chinese soil until the moment we were airborne over Tokyo I've truly enjoyed myself. What I will remember when I think back of this study tour in a few years? I will probably have many thoughts about the companies and universities we've visited. About the many different cultures and the sometimes incomprehensive expressions of these cultures we've seen. And of course I'll remember the good time we've had with each other in the Far East.

But, maybe the Sunrise Study Tour is best characterized by stating it was an unforgettable four week rollercoaster ride across many different cultures, cities, ho(s)tels, (high speed) trains, air planes, companies, universities and subways!

Stephen van 't Hof

Pizza, ping pong and engineers

When I left the Netherlands, not so few jealous friends stayed behind. They were right the month we spent in Asia was one of the most exciting months in my life. Not only did we visit interesting companies, universities et cetera, but I also learned a lot about the Chinese, Korean and Japanese cultures.

The best visit was, in my opinion, MaximIC's. Shanghai's software park is a beautiful location with a relaxed ambience. During the lunch break we had a nice stroll by the lake in the sun. MaximIC was one of the few companies where we could actually chat with the engineers. Also it was one of the few where the presentation had an adequate level of difficulty. Afterward, we had pizza together and played ping pong against the engineers. How cool is that! If I'd speak Chinese I would immediately start to work at MaximIC.

Of course this is just a glimpse of the month we spent in Asia. Back home, I can tell the rest of the story to my friends to get them even more jealous.

Joost Kerpels

As a member of the organising committee, the trip was especially exciting for me. We've invested a lot of time and effort into organising this trip, and so I already had high expectations of all the places we were going to visit. Fortunately, all these expectations turned out to be true, and most of the time the experiences were even better than expected.

I am very thankful to have been able to join such an amazing trip through Asia. We have been able to see a culture that differs from ours very much. Not only did we experience these differences in daily life (eating, sleeping, transporting), but we also had the opportunity to experience this in companies and universities, when communicating with the local employees and students.

A big part of the success of the Sunrise Study Tour is due to the amazing group of participants, so with this I'd like to thank everyone who joined the tour. Secondly, I'd like to thank everyone who helped with the organisation of this tour, including professors, students and people from all the companies and universities we've visited.

Lennart Klaver

The Study Tour 2011 was a great experience and a widening of my vision. In The Netherlands we do not know a lot about Asia, and the image we have about Asian countries is very different from reality. By visiting companies that determine our current and future technology, I have obtained a good impression of Asia. It was very interesting to see their structure, vision and strategy. These companies, in combination with the universities and institutes we have visited, give a strong impression and an unforgettable time of my life. The cultural trips and the everyday life was interesting and showed how the same things happen differently everywhere.

The organisation has put a lot of effort and time in the tour, and by this way I want to thank them for their great care and planning. Thanks to them everything ran smooth and was very enjoyfull. Great work!!!

The Study Tour has been an enrichment to every participant and I'm sure no one will forget this!

Robert Lodder

The Sunrise Study Tour was a unique and great experience. In enjoyed it very much to visit China, Hong Kong, South Korea and Japan. I stayed far away from home for four weeks, together with a group of great fellow students, in hostels of quite varying quality. Every day there was something new to discover, from cultural trips to beautiful places, like the "Great Wall of China" and the "City of a Thousand Temples" Kyoto to visiting interesting companies. At some companies we wanted to see more than they showed us, while other companies showed more than we had expected. We experienced the difference and similarities between both us and the people of China, South Korea and Japan, as well as between them. An appropriate quote from the tour I liked is very fitting: "They are not strange, they are different".

While I probably won't take a grand tour like this anytime soon, I will continue to travel to new countries and I will always remember this wonderful Sunrise Study Tour.

Alexander de Moes

When we headed for China, I had no idea what to expect. What I found was a very well developed, but chaotic country. We traveled a lot, but every time we traveled to another city, we ended up in another paradise. I was surprised by the strict and organized culture of South Korea, the crowded streets and buildings in Hong Kong and the wacky Japanese culture. Cultural highlights of the tour were the Beijing Summer palace, The Chinese wall, Zhouzuang, Pudong, Hong Kong and Kyoto. I even had the chance to train Aikido in the Hombu Dojo. It gave me a good insight into the culture of eastern Asia.

We visited lot's of really remarkable companies and it gave me a good idea of how these companies operate. I especially liked the Nissan factory and Foxconn city. We saw some crazy things along the way, like the mad traffic in Beijing and Shanghai, The extremely crowded subways, Chinese people selling intellectual property and we now know there are Japanese people inside ticket machines!

All in all the study tour was an unforgettable experience and I want to thank everyone who made it possible!

Jeroen Ouweneel

Never having been a big traveler - in fact, I had never left Europe before - I really had no idea what to expect of the study tour. I was, however, very eager to see what Asia is all about. And I wasn't disappointed: every time we got out of the metro system for the first time in a new city, I was impressed by all of the new views and experiences.

I really enjoyed all of the excursions – some made a more lasting impression, such as Nissan, which I really liked because of the inside view in how cars are made, and Foxconn, which painfully confirmed that not everyone benefits from technological advancement.

Besides this, I really enjoyed just sitting down in the hostel bars (especially the Shanghai rooftop bar with fantastic view!) after a long day, drinking a beer and discussing the day – or, since I was one of the daily reporters, writing down all we had seen and heard.

Overall, the study tour has really changed my opinion on Asia, and definitely interested me in studying or working abroad.

Daan Schellekens

First I want to say: "It was fantastic!" And because 200 words is too less to tell everything about my experiences I want to sum up some little things I won't forget.

Let's start in Beijing where at sunset the police expertly cleaned Tiananmen Square and where a lot of young Chinese boys were fooling them. That was also the place we discovered the 'Feenstra'tjes van de Dag.' Or in Shanghai, where we expected a pretty quiet night which ended in a lot of tequilla in the bar of the hotel and my first visit to the M2. What a night!

And Shenzhen where we had a dinner in a room with a strong airco and were another guest of the restaurant had to order our dinner because we couldn't speak Chinese and there realy was no other way to communicate. Further more the crowded streets in Hongkong, the 10,000 missiles aimed at Seoul, the jokes of our guide to the DMZ. "I'm the second most beautiful woman in our company. Number one is my only other feminine colleague." My birthday in Osaka, especially the taxi back home, the day after and the crazy Japanese! I want to thank all the participants, professors and especially the Commitee for their contribution to those four educational weeks of fun! Thank you all!

Richard Spijkers

During the preparation of this trip, I did a short and interesting intern with Frank Teunisse at Deerns. This gave me the opportunity to experience working in companies in the field of Electrical Engineering which was already worth it on its own.

The study trip itself was an amazing experience as well. It was great to visit the countries and experience the different cultures. Fortunately, we visited so many companies in each country. The products they made were interesting, but the way the employees worked and lived was even more interesting. This gave us a great look into the culture and way of living of the employees. Great to see that a different approach in these countries can lead to great success as well. Furthermore, it was amazing to see the growth of the economy and the change of everything in China.

We have enough time to see cultural sights, so we had a good complete look of all the countries, making this trip one of the best memories of my time as a student in Delft.

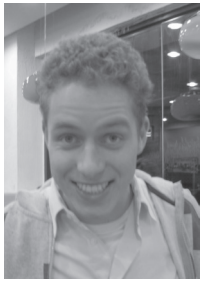
Barry Strengholt

The Studytour was an enthralling experience. How different the culture can be. How their companies work. Also fascinating was the difference between the cities in China self. An example is the price and comfort of the taxi's: in Beijing you are glad to survive your drive though you still feel ripped off, while in Shanghai you feel comfortable when you smoothly pass the Masserati.

Something special was about the jobs European people had and their lives that come with it in China and Korea. It gave a small view of the possibilities of how life would be if you would work in such a environment. With a different culture as background you can an advantage with certain jobs, however you could get totally isolated as you live in a country totally unlike you own, without being able to really speak the language and almost without friends of family.

This trip has been a great and nice experience which showed a lot of life. I really enjoyed it and it helped to develop my view on Asian life and culture.

Frank Teunisse



During this study tour I was totally amazed by new, amazing, strange, wonderful and sometimes weird impressions. There hardly was any time to really realize everything. Even weeks later I suddenly realize something that I saw or did in those four weeks was really extraordinary. Every day, the organizing committee planned visits to interesting companies, most of which are world leading in their fields, or breath taking cultural heritage. Even on free days we got changes to see - for example - the border between North and South Korea or the sunset in Tokyo from above.

At home, one of the questions I hear a lot – "What was the most amazing?" – is a question I'm a bit ashamed to answer; it is the party in Honk Kong. In there, while partying on the 30th floor, in the middle of the Hong Kong skyline, – with girls almost fighting to dance with us – I realized how lucky we are, we had the chance to join this study tour.

Tom Verboon

The Sunrise study tour has been a valuable experience to my early life. Although the tour focused more on getting to know the corporate culture, spending a significant time in East Asia also means you are getting to know a lot more than the inside of sober – but always uncomfortably warm - offices. The chaos in the Chinese cities, the order in Japan. The patience of the Japanese standing in line, on the other hand the impatience they show in elevators - quickly pushing all buttons on the panel. Nothing compared to the Dutch in the train from Delft to Rotterdam!

Every city had its own eye-openers. Inner calmness was the biggest effect the Asian culture had on me. Last and for sure not the least, I want to mention the group. They contributed significantly to this experience. Together we kept on evaluating the foreign cultures; sometimes with a critical view, sometimes only for fun. The one thing we could not acquire was bowing, though we have tried hard. Anyhow, bowing will never be the same to me!

Matthijs Weskin

Before we left Delft to go ahead to China, South Korea and Japan, I didn't knew what I could expect. We all have our thoughts about Eastern Asia, but what was really happening there, nobody could tell me.

At the arrival at Beijing my thoughts were right: a very well secured country with strict rules. But it didn't took long before my view had changed: there were sleeping guards at the subway stations…

For companies I didn't know what to expect either; everybody is telling the Western World Chinese companies are going to take the lead in the market, but we never felt it that way. So, time to take a look by myself. A very short overview of the companies: many ups and downs! But one thing shocked me the most: the anti-jump nets at Foxconn. Employees were not allowed to leave Foxconn City and had – probably – to work a lot more than Europeans ever could understand.

During the study tour I started to understand the Eastern Asian culture which widens my view of the world. But besides all the companies and universities we visited, off course, we also had a great time with all the participants. In every way I had a wonderful study tour. Guys, thank you all very much for that!

Imke Zimmerling

What an experience! After four weeks of travelling through Asia I'm slowly also returning to our dutch culture: people who are not queing up neatly to enter trains and metros as in Japan, people who not spit on the ground just where they stand as in China, people who know that you want to drink your beer out of a proper glass, not a container with the volume of a nutshell, but also people who find it normal to make holes in their food by means of sharp metal tools before eating it. Why should you? This is only one of the questions I asked myself after returning.

What I definitely have learned is that I'm able to adopt a lot of things within very short time. Seven cities with different cultures within four weeks is a lot to adopt to, but we all managed.

Also some of my questions I had about the countries before going there where answered: Is it difficult to find your way in Beijing Subway?- No. Are there traffic rules in China?- No. Do Japanese people really bow all the time?- Yes. Are Chinese companies afraid of sharing their knowledge?- No. Are Chinese people willing to discuss with us?- Yes, very much. What makes Korean people different from other Asian people?- They BBQ inside their houses and drink lots of coffee.

Various Remarks

V.n Dr..l: *"Ik baal als een wereldstekker..."*
V.rb..n: "*Als je maar niet overspannen raakt!"*

F..nstr. (tussen alle reisdeelnemers): *"Kan er hier iemand Engels?"*

V.n D.ng.n: "*Weskin heeft met zijn fluit gespeeld!"*

Sch.ll.k.ns: *"Kun je zeggen dat is cultuur, maar je kan ook gewoon normaal doen!"*

K.rp.ls (kijkt naar een stenen beeld): *"Die moet het steenkoud hebben..."*
..w.n..l: *"Maar hij zit er beeldig bij!"*

F..nstr. (tijden het eten): "*What kind of fish is it? Semen or ...?!"*

m.d.w.rkst.r v.n d. .mb.ss.d. (T..n.ss. probeert hek open te krijgen): *"Nee, je moet trekken."*
T..n.ss.: *"Goed teken, dat ze liever heeft dat we trekken in plaats van duwen!"*

Chr.st...ns. (zit aan ronde tafel): "*We eten pas als de tafel rond is"*

K.rp.ls (tegen v.n Dr..l nadat v.n Dr..l een foto van een panda heeft gemaakt):
"Die panda is op jouw plaat gegaan, dat is raar"

Z.mm.rl.ng: *"Wie heeft de WC naar de klote gescheten?"*

F..nstr. (tegen toerist uit Australië): *"Do you have traffric rules in Australia?"*

Chr.st...ns.: *"Het toilet heeft een S.O.S-knop, voor als je in de shit zit"*

v.n D.ng.n: *"Ze hebben hier plastic zakjes warm geföhnd en uitgetrokken tot tafelkleed"*
Gr..t: *"Dat is zeker de Zeeuwse oplossing?"*

DJ: "*Everybody make some noise!!!!"*
K.rp.ls: *"Ghrgrgrgrrrghr"*

v.n Dr..l: *"Later ga ik mijn hamster Faraday noemen"*

Sch.ll.k.ns: *"In principe hoeven we geen quotes bij te houden, F..nstr. maakt er in de laatste week nog wel genoeg"*

F..nstr. (tegen v.n h.t H.f): *"Waarom heb jij geen quotes gemaakt?"*
v.n h.t H.f: *"Ik heb genoeg quotes gemaakt, maar niemand kon ze opschrijven aangezien ze dubbel lagen van het lachen"*

Did you know...

...that van Beek en Feenstra were scammed with a tea ceremony on their first day in Beijing?

...that there was a partyteam that represented all participants during night life?

...that in the right corner of the M2 in Shanghai you could buy ten consumpion tickets for €10.-?

...that Schellekens is very good in haggling when he wants something in the silk market?

...that Geelhoed and Schellekens experienced wild adventures together?

...that Finland is a beautiful country?

...that all the participants lived like VIP's in China because the taxis are very cheap?

...that cellebrating Daan's birthday in club Joule, Osaka, did not ended well for some participants?

...that losing a tooth in Japan is not very amusing?

...that van Driel is an excellent navigator?

...that the Shanghai World Financial Center is with a length of 492 meter the tallest building of Shanghai?

...that the Bund in Shanghai is a must-see for everone?

...that every participant walked over 200 kilometers during this study tour?

...that the trains in Japan always drive in time, in contradiction with the Netherlands?

...that the Big Mac Index (BMI) in Hong Kong with a big mac menu for $2,50 is the lowest one?

...that 27 °C is the standard room temperature in Asia?

...that air conditioners hang low in China?

...that it is a recommended by all participants to visit China, Hong Kong, South Korea and Japan at least ones in your live?

Thanks to

The Sunrise Study Tour Commitee wishes to express many thanks to:

- The Board, former Board and many Honorary Members of the Electrotechnische Vereeniging
- Prof.dr. Beenakker, Prof.dr. French, Prof.dr. Smit and all the participants for their enthousiasm and efforts in making the Sunrise Study Tour a succes
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- All people involved in organising excursions to their company or university
- All other people who have contributed to the Sunrise Study Tour