



2014 WORLD ENGINEERING
EDUCATION FORUM
ENGINEERING EDUCATION FOR A GLOBAL COMMUNITY



3rd - 6th December 2014

Dubai International Convention and Exhibition Centre

Dubai World Trade Center

CONFERENCE REPORT

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In Cooperation with

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WEEF
2014 DUBAI

WORLD ENGINEERING EDUCATION FORUM

ABOUT WEEF

The first World Engineering Education Forum (WEEF), held in Singapore in October 2010, was the brainchild of leaders in the global engineering education community who sought to bring together the world's engineering education societies to the same place at one time, allowing for logistical and programmatic synergies. Since 2010, the WEEF has been held in Buenos Aires, Argentina (2012), Cartagena de Indias, Colombia (2013). In September, Florence, Italy will host WEEF 2015.

WEEF has been an important event in furthering IFEES' mission to bring together the global community to build excellence in engineering education. Not only do international organizations benefit greatly from the Forum, but local engineering education institutions are heavily involved in the vision and execution of this event. The venue of WEEF changes each year, and the event has brought great visibility to local institutions which otherwise may not have had such opportunities to interact and cooperate with foreign and international engineering education organizations.

WEEF 2014 DUBAI

Following in the footsteps of WEEF 2010 in Singapore and WEEF 2012 in Buenos Aires, the 2014 World Engineering Education Forum is bringing together a whole array of activities. The Forum combines a number of international engineering education conferences, and regularly aims to be the largest ever conference on engineering education. Hundreds of engineering educators responded to that call by participating in the WEEF 2014 in Dubai, United Arab Emirates (UAE) from December 3-6, 2014. WEEF 2014 Dubai brought together a diverse group of participants, including students, industry members, policymakers, and academics, and provided a wide range of opportunities for each of those stakeholders to contribute significantly to the discourse of improving engineering education. Thought leaders presented key research about *engineering education pedagogy, innovation, entrepreneurship, diversity, retention, competitiveness, online courses, and corporate-university collaborations*.

Hosted by the American University of Dubai, and with cooperation from IFEES, GEDC, IGIP, SPEED, IEEE, ABET, UAE-SOE, and other local UAE groups, the Forum was a successful and enriching experience for all involved.

Hundreds of participants joined from over one hundred countries, truly exemplifying the theme of WEEF 2014 Dubai - *Engineering Education for a Global Community*. Engineering educators from around the world began their local UAE experience from the first day, with an opening reception at the American University of Dubai School of Engineering. The next day's Opening Ceremony Keynote speeches would feature the HH Sheikh Hamdan bin Mohammed Al Maktoum, Over two hundred papers were presented, through IGIP, in a variety of formats by the WEEF participants.



This report is a compilation of highlights from the most recent WEEF in December 2014 in Dubai, UAE. The main plenaries, as well as selected sessions from each participating organization - IFEES, GEDC, SPEED, IGIP - are included here to give an overview of the WEEF. For the full summaries of each organization's conference, please contact the individual organization.

WEEF SPONSORS AND PARTICIPATING ORGANIZATIONS

Another thank you to all of our sponsors, without whom this event would not have been possible!

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10TH GLOBAL STUDENT FORUM (GSF)

29 Nov - 2 Dec 2014

THEME: ENGINEERING EDUCATION WITHOUT BORDERS

ABOUT

The GSF (Global Student Forum) is a global conference organized by the Student Platform for Engineering Education Development (SPEED), which draws academicians, representatives from government, industry, and non-profit organizations, and an increasing number of students from around the world to discuss issues pertinent to engineering education. During this event, students will be a part of an international experience, submerged in the atmosphere of cross-cultural communication and creative thinking.

Participants take part in workshops aimed at providing them with tools to find innovative solutions with a global perspective and apply them in their local communities to improve upon engineering education. Students have a chance to learn about existing student projects, get involved and/or start their own regional and global initiatives with the aim of maximizing the student voice within the engineering education community. Traditionally, the World Engineering Education Forum (WEEF) follows the GSF.

The 10th GSF was held during the weekend prior to WEEF, from 29 November to 2 December. The theme of this year's GSF was *Engineering Education without Borders*. Participants started arriving to Dubai on 29 November 2014. A welcome dinner was organized at the American University in Dubai. The dinner began with an introduction to SPEED by Alexandra Seeman, the 10th GSF local chair. She also provided the students important instruction for their stay in Dubai. This was followed by some icebreaking sessions for the students to network with fellow participants from different parts of the world. Dinner was provided after the icebreaker sessions.

DAY 1

The GSF was kick started by Aswin Karthik, the 10th GSF International Chair. He gave an introduction to SPEED and the 10th GSF. He gave the participants an insight into SPEED's work and core-values. This was followed by a keynote speech, delivered by Dr. David Delaine, who spoke about "Action Planning an Educational Life". He spoke on the importance of multidisciplinary research in engineering education, encouraging the participants to be reflexive engineers rather than just traditional engineers. He asked the participants to first understand the purpose of pursuing engineering, and emphasized a peaceful change through love, peace and networking. He outlined the importance of having an action plan for education that included aspects such as a theme, objectives, tasks, responsibilities, timeline and evaluation. The next session was a guest lecture by David Bradford, project director of the Burj Khalifa. He shared about the planning and construction of the Burj Khalifa from its foundation, focusing on the importance of interdisciplinary learning and strategic planning for the successful execution of any project. He also shared interesting facts about Burj Khalifa with the participants.

Joe Packhem, SPEED External Affairs Officer, gave participants an introduction to brainstorming. He talked about the advantages of brainstorming in groups to formulate more ideas and also gave tips on evaluating those ideas generated, post-brainstorming. This session on brainstorming was followed by an introduction to action planning by Ana Rita Medeiros, BEST representative at the 10th GSF. She talked about the various ways to approach effective action planning and also introduced some useful tools such as Gantt chart and SWOT analysis.

Later that day, participants took part in an Industrial Site Visit, and were taken to the world's tallest man-made structure, the Burj Khalifa. The presentation on Burj Khalifa in the morning helped the students visualize all the information provided in the morning.



DAY 2

GSF participants were divided into three different tracks, which were streamlined from the GSF theme of “Engineering Education without Borders.” The students were engaged in brainstorming on the various challenges in engineering education pertaining to their track and developed action plans. The three tracks were:

- Track 1: Re-imagining Engineering Education in and out of the classroom
- Track 2: Re-imagining Engineering Education beyond the silos of discipline
- Track 3: Re-imagining Engineering Education through the world

The students were ready with their action plan by the end of the second day.

The day ended with a Cultural Evening in which participants from different countries had a chance to share and display their local traditions. Participants were dressed in their traditional attire, served their local food to everyone and also performed traditional dances.

DAY 3

On the 3rd day of GSF, the sponsors’ presentation was followed by the presentation of action plans in each track. One winner was chosen from each track. The presentations were judged based on creativity, sustainability, thoroughness, feasibility and social impact of the action plan. The winner of each track competed against each other in the final round for the final action plan winner. The panel of judges included Nicholas Xenos (Juniper Networks), Monique Simon (Total SA), Tom Lee (Quanser) and Uriel Cukierman (UTN).

Overall, it was a successful GSF, and provided ample opportunities and lessons for participants to bring back home to share with their respective communities.



WEDNESDAY, 3 DECEMBER

OPENING CEREMONY KEYNOTE ADDRESSES

HE ENG. ESSA AL-MAIDOOD, DIRECTOR-GENERAL OF THE DUBAI HEALTH AUTHORITY

TOWARD A KNOWLEDGE-BASED ECONOMY—THE ROLE OF ENGINEERING EDUCATION

HE MR. ELIAS BOU SAAB, MINISTER OF EDUCATION AND HIGHER EDUCATION OF LEBANON

FUTURE TRENDS IN HIGHER EDUCATION IN THE MIDDLE EAST

On the morning of 3 December, WEEF officially opened with a ceremony and keynote speeches featuring important guest speakers HE Eng. Essa Al Haj Al Maidoor, the Director-General of the Dubai Health Authority (DHA) and HE Mr. Elias Bou Saab, the Minister of Education and Higher Education of Lebanon.

HE Eng. Al Maidoor opened the morning with an inspiring speech on the role of engineering in the advancement of civilization, and the role that the Middle East has played in that, citing advancements in Algebra, navigational instruments, and the UAE's very own Burj Khalifa.

HE Mr. Saab continued with this theme of the importance of engineering, noting that "engineering touches every part of our lives." He attributed the UAE's success to engineering creativity. He also noted that the Society of Engineers - UAE was established 35 years ago, and now has over 35,000 members. "Education of the next generation is the cornerstone of civilization. Human development is the basis for building a strong nation. Engineering education is connected to the quality of life."



These two important leaders in the Middle East would set the tone for the workshops, panels, sessions, and conversations to come during the week.

During the Opening Ceremony, WEEF participants also honored the memory of Duncan Fraser, who passed away in July 2014, with a moving slideshow that included snapshots of his full life. Duncan would have started his two-year term as IFEES President this week at the IFEES General Assembly.

INTERGENERATIONAL PANEL

THE DIGITAL (RE)-EVOLUTION IN ENGINEERING EDUCATION

Over the last few years, an exciting and key part of WEEF has been the Intergenerational Panel, spearheaded by the Student Platform for Engineering Education Development (SPEED). This is a critical part of WEEF, as it is an opportunity for students, faculty, and other engineering thought leaders to share multiple perspectives about a relevant topic towards improving engineering education. At every WEEF, the Intergenerational Panel helps launch the Forum with a rigorous conversation between panelists and then engages the audience in small group discussions. This year, the discussion centered on “The Digital (Re)-evolution in Engineering Education.” Aswin Karthik, a SPEED executive committee member, moderated the panel that included other SPEED members, Alexandra Semaan and Joseph Packhem. The panel also consisted of an industry thought leader, Xavier Fouger from Dassault Systèmes, and a diverse group of engineering faculty including Buddi Kanmani, Eesa Bastaki, and Zainab Al Hammadi.

The panelists and small groups were prompted to consider how the role of technology in engineering education has evolved dramatically over the past decade. In this session, educators, practitioners and students spanning a range of generations debated the critical role of technology in today’s engineering education, and shared their unique perspectives from different vantage points on the proliferation of technology in today’s classroom.

Discussions included the challenges of today’s engineering students who learn not only from the professor in the classroom, but also from a variety of digital resources including MOOCs, digital labs, online simulations, wikis, discussion boards, and social media. Due to the global nature of the WEEF, topics of conversation also led to facilities that make it easier and more reliable to hold synchronous classroom sessions across different continents. Indeed, the Intergenerational Panel aimed to foster a sense of the importance of thinking globally about engineering education through the lenses of a wide range of stakeholders.

HIGHLIGHT ON IGIP CONFERENCE

SUMMARY BY MICHAEL AUER

After the opening ceremony, IGIP organized a keynote talk by Christian Dorninger from the Austrian Ministry of Education, Arts and Culture on “Engineering Education in Upper Secondary Systems”, where he spoke on the challenges and the risks of an engineering education that leads young people between the ages of 15 and 19 to a promising career, either in tertiary engineering programs or in the world of work. In addition, the digital poster session and the five IGIP-ICL tracks, with 35 parallel sessions dealt with interesting topics of teaching and learning, as well as with accreditation, curriculum development and remote labs. The high attendance in all sessions organized by IGIP, as well as the constructive feedback that was given by the competent audiences to the presenters and speakers, showed that not only a great number of IGIP members from all around the world contributed well to the discussions of the interesting topics that were presented, but also proved that the global engineering education community took a great interest in getting together with the engineering pedagogy experts of IGIP. Thus, the first day definitely left a sustainable impact on both IGIP, as one of the key players in engineering education, and on the audiences that realized how important IGIP is as an academic and pedagogical body for setting trends in engineering education.



GEDC AIRBUS DIVERSITY AWARD DINNER

WEDNESDAY, 3 DECEMBER 2014

THE ADDRESS DOWNTOWN DUBAI

On the evening of 3 December, GEDC members gathered at The Address in downtown Dubai to celebrate the finalists of the 2014 GEDC Airbus Diversity Award. Charles Champion (Airbus) and John Beynon (GEDC) introduced the finalists and their work in diversity and inclusion in engineering education, naming Marita Cheng (2Mar Robotics) as the recipient of the 2014 Award. Cheng gave brief remarks, saying that she felt quite humbled to be amongst the finalists, after hearing the work of the other finalists Bryan Hill (University of Arkansas) and Bevlee Watford (Virginia Tech). She thanked her university, and the faculty there who first supported her endeavors with Robogals.

Charles Champion, Airbus Executive Vice President Engineering led the evaluation committee, said, “At Airbus, we are constantly looking for new ways to innovate. That means building more diverse teams, for higher performance and an inclusive culture that builds on everyone’s strengths. Our 2014 Award recipient not only impressed us with her initiative, but also inspired us with her understanding that the best way to increase diversity is by creating a clear roadmap for others to follow.”

The three 2014 finalists were selected from over 20 candidates from 12 countries. This prestigious award is given to individuals who have been proactive in bringing more diversity into engineering schools and universities. It rewards initiatives around the world which encourage young people of all profiles and backgrounds to study and succeed in engineering.

The finalists presented their ideas before a distinguished evaluation committee at the World Engineering Education Forum (WEEF) in Dubai earlier this week. John Beynon, (Executive Dean, Faculty of Engineering, Computer & Mathematical Sciences at the University of Adelaide and Chair of the GEDC), Rana El Chemaitelly (Founder, The Little Engineer) Prof. R Natarajan (Former Chairman, All India Council for Technical Education, and former Director, Indian Institute of Technology, Madras) and Dr. Khairiyah Mohd-Yusof (Director, Centre of Engineering Education, Universiti Teknologi, Malaysia) joined Charles Champion on the Committee. Their selection criteria focused on the measureable success of the initiative, the transferability of the idea and the potential to inspire others.

“All three of our finalists are to be congratulated for the real difference that they have made,” said John Beynon, chairman of the GEDC. “Their achievements are testimony to their hard work and commitment. Now we hope that engineering leaders from around the world will be inspired to follow their example, and replicate their initiatives in order to build a more diverse global community of engineers.”

For more details on the 2014 GEDC Airbus Diversity Award and the three finalists, please visit www.diversityinengineering.com.



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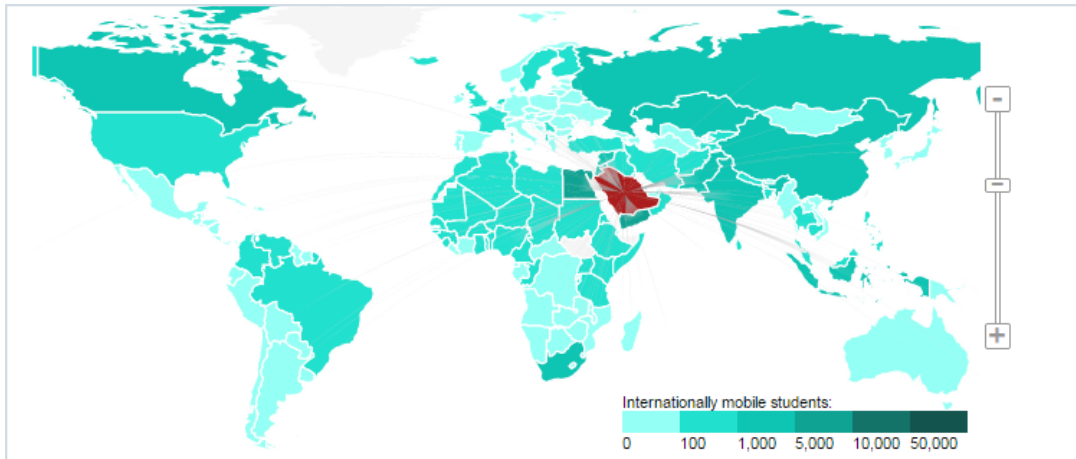
THURSDAY, 4 DECEMBER

PLENARY: KEYNOTE LECTURE

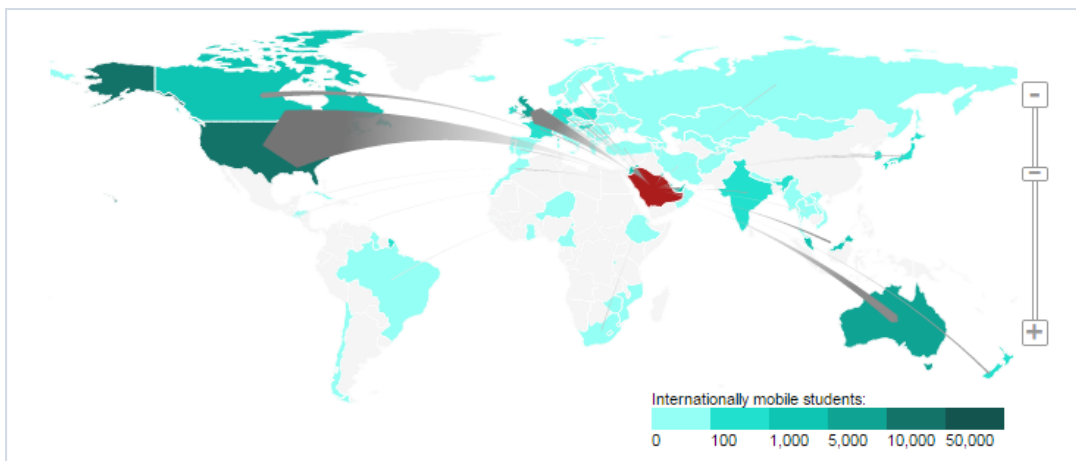
JEAN-LOU CHAMEAU, KING ABDULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

GLOBAL ENGINEERING EDUCATION: THE NEW NORMAL

Sharing from his experiences in leadership at GTech, Caltech, and KAUST, Chameau shares the current environment of globalization, which make up a “new normal” for education institutions. He began by describing the current environment of student mobility, sharing data from UNESCO on the flow of tertiary-level students. “Global mobility’s implication for university is that talent is empowered to ‘shop around.’ There is increased competition for top talent.”



Flow of Tertiary-Level students from (above) and to (below) Saudi Arabia.
Source: <http://www.uis.unesco.org/Education/Pages/international-student-flow-viz.aspx>



He shared data on the rapid expansion of science & engineering researchers in Korea and China, on competition from emerging economies (citing China’s share of refereed journal articles grew the fastest among larger developing countries –nearly quadrupling from 3% to 11% of the world total between 2001 and 2011), on the increasing number of USPTO patents granted to inventors outside of US, the increasing international collaboration in S&E articles, and on the continuing gender and race disparities in S&E. Then Chameau posed the question: how do S&E research universities respond to these trends? He answered the question in part by sharing KAUST’s mission, vision and approach to education, which include state-of-the-art facilities, major programs, and a research and technology park.

He finished his presentation by encouraging engineering educators to prepare students to have a local and global impact, develop professional/soft skills in the laboratory and beyond, to cultivate working in a cross/multi-disciplinary environment, to develop experience through internships in industry and/or research, and to embrace new areas of discovery/need in curricula.



HIGHLIGHT ON IFEES SUMMIT

This year, IFEES aimed to make their sessions more interactive, on a variety of topics, such as MOOCs (Hope or Hype?), CDIO, Attributes of a Global Engineering, Quality Assurance, PBL and more. Below is a summary of just one of their enriching sessions.

(RE-)DEFINING THE ENGINEERING GRAND CHALLENGES OF THE 21ST CENTURY

The session on Global Grand Challenges brought together diverse thought leaders from around the world to broaden the discourse about engineering education within the context of 21st century Engineering Grand Challenges. Grand Challenges are global initiatives that have beacons of support from around the world, including the Chinese Academy of Engineering, National Academy of Engineering (NAE), and Royal Academy of Engineering, multinational corporations, and a wide range of universities.

The panel was moderated by Christina White who is a director of Grand Challenges Scholars & K12 Partners Programs and a member of the NAE Global Challenges Scholars Program (GCSP) committee. To set the groundwork of the concept of Engineering Grand Challenges, Yannis Yortsos, engineering dean at University of Southern California and one of the founders of the GCSP, shared how engineering has evolved from physics devices to complex societal challenges requiring interdisciplinary connections. Jaime Bonilla, engineering dean of Tecnológico de Monterrey, and Khairiyah Mohd Yusof, director of the Centre for Engineering Education at Universiti Teknologi in Malaysia, stressed the importance of service-learning to develop a wider range of skills and motivation to solve human challenges.

Jean-Francois Minster, Vice President of Research at Total, presented the need for new business models coupled with new technologies as being key to scaling solutions globally. He shared a real world example from Total, where they reconceptualized their business model to work with their new technology thus making it feasible to scale a lighting solution to 50 million people. Theo Andrew, executive dean at Durban University of Technology, included ideas about how cross-cultural training and systems thinking are needed in engineering education in an effort to address Grand Challenges. Catherine Didion, senior program officer for the Diversity in the Engineering Workforce at the National Academy of Engineering, discussed how Grand Challenges attract diverse students, including those that are traditionally under-represented, into engineering. She and Jean-Francois Minister agreed that Grand Challenges must include diverse perspectives in their solutions.

Overall, the discussion included themes that resonated across Grand Challenges including sustainability, health, technology and growth, entrepreneurship, education, enriching life, and resilience. With this panel, the WEEF community will continue to enrich the discourse on Grand Challenges from global perspectives on research, teaching, implementation, and engineering education.

IFEES AWARDS DINNER

THURSDAY, 4 DECEMBER 2014

JUMEIRAH EMIRATES TOWERS HOTEL

IFEES PRESIDENT'S AWARD



A highlight of WEEF is to recognize and honor leaders in our global community. The IFEES President's Awards recognizes thought leaders who have contributed significantly to the global engineering education community. The sitting IFEES President in consultation with former presidents and the Secretary General, determine the recipients each year. The IFEES President's Award for Global Visionary is presented to individuals who have had a long career in engineering education, with a strong reputation and credibility as global leaders.



This year, the President's Award honored Krishna Vedula for his multivalent approaches to revolutionizing engineering education through deep commitment and fostering collaboration amongst many stakeholders.

The IFEES President's Award for Pioneering Regional Leader was awarded to Yury P. Pokholkov who has made stellar contributions to engineering education, including establishing ties with community, corporate, and scientific spheres, throughout Russia and the broader region.

IFEES DUNCAN FRASER GLOBAL AWARD

Dr. Luiz Scavarda, a Physics professor and Administrative Vice President at the Pontifical Catholic University of Rio de Janeiro, Brazil was the recipient of the IFEES Duncan Fraser Global Award. The IFEES Duncan Fraser Global Award (previously the IFEES Global Award for Excellence in Engineering Education) recognizes individuals who have made outstanding and original contributions to engineering education through exemplary teaching, research, and/or leadership innovations. Dr. Scavarda was honored with the 2014 IFEES Duncan Fraser Global Award for his work on several facets of engineering education making an impact on all key stakeholders – students, faculty, industry and government. He also hosted the 2006 IFEES Summit in Rio de Janeiro and is responsible for international activities of the Brazilian Association of Engineering Education (ABENGE), acting as its formal representative in IFEES since 2006. Dr. Scavarda's efforts to build the engineering educators community in Brazil and his contributions towards enhancing the number of engineering graduates are laudable. His efforts resulted in an increase of engineering graduates in Brazil from 16,000 in 1996 to 65,000 in 2013. In Brazil, his influence would continue to grow. He was elected as member of the National (Brazilian) Academy of Engineering where he will continue to make a significant impact nationally and globally.



IFEES AWARDS SPONSORS

The IFEES awards and ceremonies would not be possible without the important sponsorship and support of the global community and industry leaders. Hans J. Hoyer, Secretary General of IFEES and Executive Secretary of the Global Engineering Deans Council was joined by Jose Carlos Quadrado, President of IFEES, in showing great appreciation for IFEES Awards Sponsors: Hewlett Packard, Dassault Systèmes, Granta Design, Quanser Consulting, National Instruments, and Siemens. The Award Dinner in Dubai was sponsored completely by Total S.A. The support of these stellar multi-national corporate leaders in engineering indicates the relevance and importance of the IFEES Awards recipients' contributions to our global engineering education community.

FRIDAY, 5 DECEMBER

PLENARY: KEYNOTE LECTURE

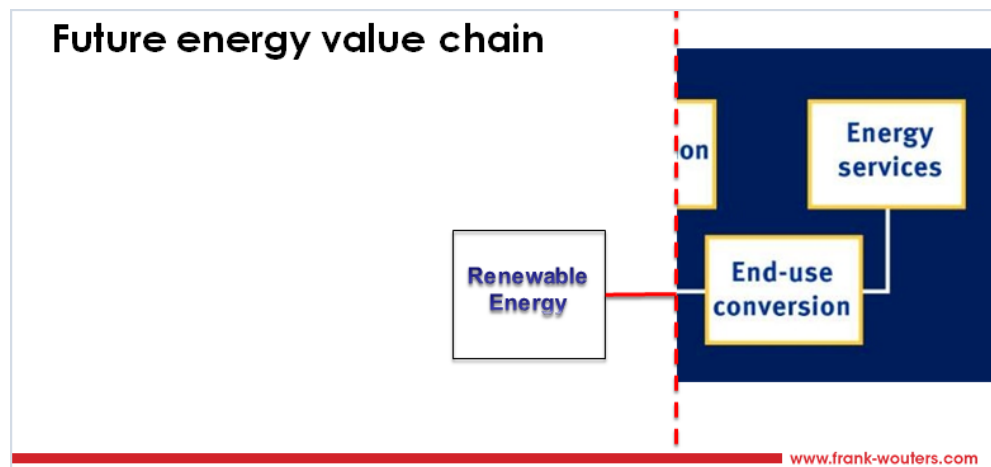
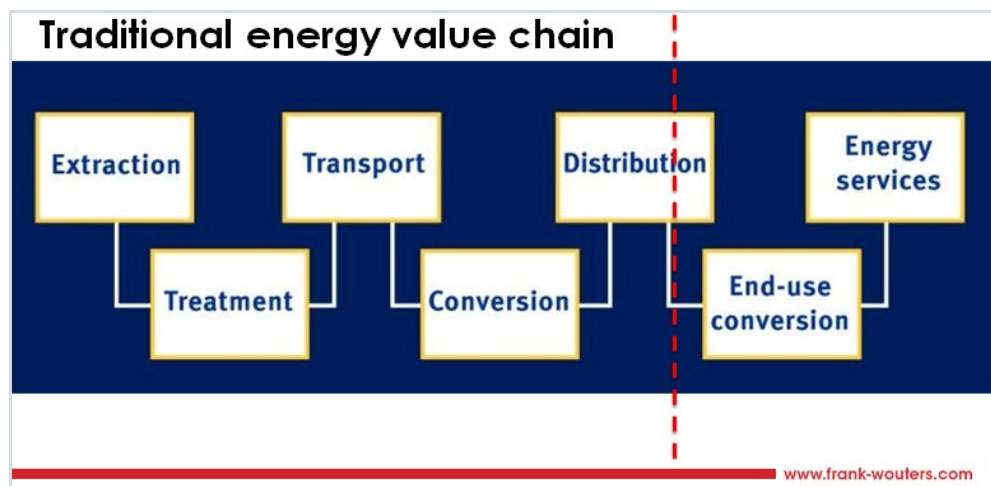
FRANK WOUTERS, INTERNATIONAL RENEWABLE ENERGY AGENCY

TOWARDS A FLEXIBLE FUTURE

Frank Wouters gave an expert talk on the future of energy, emphasizing the critical element of flexibility in the future energy system. With 25 years experience in renewable energy, intermediate technology, chemical industry and energy efficiency, Wouters serves as the Deputy Director-General at the International Renewable Energy Agency (IRENA), the first global intergovernmental organization dedicated to all renewables.

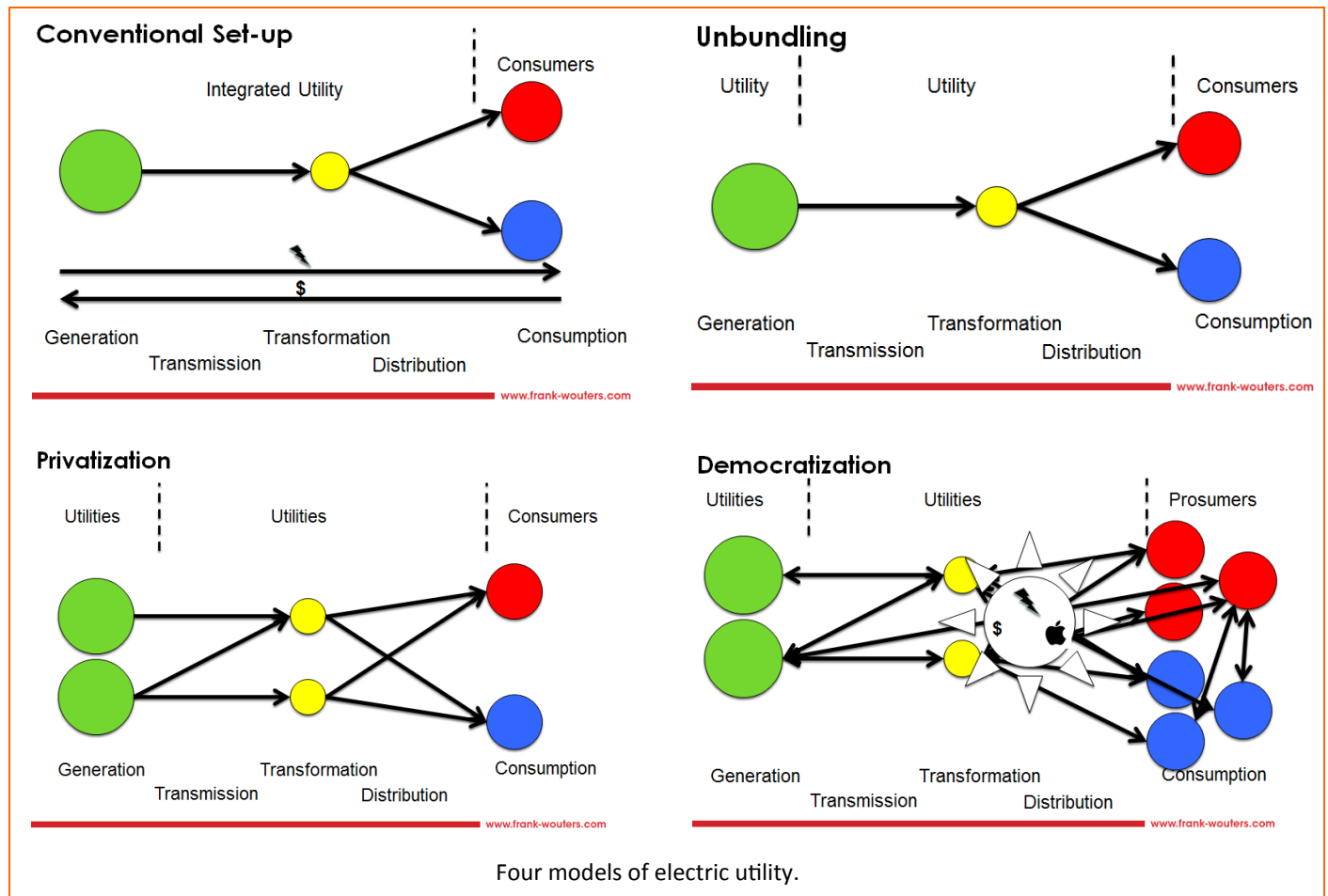
Wouters broke his talk down into four sections: 1) The paradigm shift, 2) Global trends and issues, 3) Electricity Sector, and 4) Flexibility. He encouraged participants to first see that the traditional energy value chain will not be the energy value chain of the future.

He introduced the current trends in the energy industry: burgeoning populations, increasing urbanization and sustained economic growth (all having led to an exponential rise in the demand for energy services, particularly in developing countries), growing concerns about climate change and the environmental impact of fossil fuels (which are prompting many governments and communities to seek lower-impact options), and rapid technological progress, which will make renewable energy has become an increasingly viable and cost-



effective option.

Wouters shared details of the energy system in the context of the electricity sector. “In the short term, there are already bad things happening for the incumbents in the electricity sector. In only three years spot prices have almost halved and according to the Deutsche Bank, 50% of the European profit pool will be gone by 2020.” He gave the example of RWE, whose profits have slid in part because of the renewable energies boom.



In conclusion, Wouters emphasized the need for flexibility for the success of energy systems of the future. “The challenge is to make it work in a new and much more complex system, enriched with non-traditional players and ‘prosumers.’ Smart money is on flexibility enablers.” He cited Google’s purchase of Nest Labs as a prime example of “flexibility enabling.”

Wouters’ depth of experience in the energy sector allowed WEEF participants to understand the importance of multidisciplinary and understanding engineering within the context of real-world challenges. Engineering students would benefit from understanding the importance and impact of global trends on engineering.



HIGHLIGHT ON GEDC CONFERENCE

While the GEDC held several enriching sessions on topics that varied from diversity to building excellence in resource-constrained environments, here we highlight one of their two sessions on university-industry relationships.

CORPORATE ENGAGEMENT AND COLLABORATIVE R&D

In this panel discussion, representatives from academia and industry came together to discuss an increasingly important topic for engineering deans: how to cultivate productive R&D collaborations with industry.

Peter Kilpatrick (Notre Dame University) impressed upon the audience that corporations want to see universities investing more in research. He shared Notre Dame's experience of building a large research facility, which helped to establish preeminence for the university, as well as leverage partnerships. It was a great tool for the local economy of South Bend, IL. GE subsequently committed 13.5 million USD for research, recognizing that they would benefit from access to great talent. "The best corporate-university partners are when university invests as much, if not more than corporations."

Referencing the Abu Dhabi National Oil Company (ADNOC) experience, Wafik Beydoun illustrated three typical university-corporation partnership models: 1) Consortium model where academia leads, and several industry partners sponsor; 2) Bilateral cooperation where academia leads, and industry provides data and sponsorship moneys; and 3) Co-leadership, where industry provides data, money and SMEs. He then shared seven ingredients for successful collaborations: 1) Industry Technical Challenges need to impact Operations, 2) Shared access to data, information & knowledge, 3) Opportunities to experiment/pilot potential innovations, 4) Define clear roles and deliverables with handshaking tasks, 5) Understand each other's business and culture – mitigate the "valley of death", 6) Early buy-in from Operations and involve R&D staff in Pilots, and 7) Team up passionate/able Scientists, Engineers, Experts & Students.

Alex Tormasov from Innopolis University shared the differing interests of four key players in university-industry collaborations: university, industry, students, and faculty. After outlining different models of partnerships, he pointed out that there is no "silver bullet" or magic formula for successful cooperation. "Not all companies are able to successfully cooperate with universities."

Abdurrahman Khalidi of GE shared his experience from industry, admitting that he had experience the "shadow of death" in university-industry collaborations. He has found there to be three phases of collaboration: 1) Set up, 2) Execution, and 3) Dissemination. Failure in the first phase of set-up comes with miscommunication or a misalignment of expectations. "People in industry will say, 'This is a waste of money.' Academia will say, 'There is no scientific value in this.'" The "shadow of death" comes in the execution phase when people are turned off—the team must be able to adapt during this critical phase. Khalidi hammered on this point: "Do what is impactful to business, not just what is important."

Participants raised questions about resources and the cost of co-leadership as a model of collaboration, but the panelists insisted that it was the most effective form of teamwork. Wafik Beydoun said, "Blue sky' inspiration should come from R&D science, not industry." Deans were challenged to consider this question: "Often when considering tenure, do we look enough at the impact of research?"

IGIP AWARDS CEREMONY

FRIDAY, 5 DECEMBER 2014

DUBAI CONVENTION CENTER

The highlight of the Friday was definitely the IGIP Awards Ceremony which took place in Maktoum Hall C and featured the presenting of the famous IGIP Nikola Tesla Chain to two excellent engineering pedagogy experts, namely Christian Dorninger from Austria and Claudio Borri from Italy. Both of them were honored with the chain for their outstanding achievements in the field of engineering pedagogy and for their reputed contributions to the engineering education community. Apart from that, three other IGIP members, namely Dana Dobrovska, Jose Couto Marques, and Vassiliy Ivanov, received the 2014 Adolf Melezinek Meritorious Service Award for outstanding achievements and longtime active work for IGIP. Finally, a number of Senior Members were nominated and the whole ceremony, inclusive of two excellent laudatory speeches, concluded in a highly festive atmosphere.

Afterwards, the sponsor Dubai Business Events invited all IGIP members to the IGIP Dinner in the Dubai Heritage Village. There, a highly successful conference day for IGIP found its happy ending with good food and interesting talks and networking discussions.

Earlier in the week, IGIP and SPEED jointly presented the IGIP-SPEED Young Scientist Award, which was given to a group of students in India who researched on the topic of “Diversification in engineering education through the Indian student forum” and to a group of Argentinian students who presented a study called “The impact of the first Argentinian engineering students forum on the training of engineering students and its influence on education”. It was sensational to see how the room was packed with young students who were cheering their peers and where also discussing the presentations as well as future trends in engineering education with an intra-generational audience.



SATURDAY, 6 DECEMBER

CLOSING CEREMONY

After a full and intense week of keynote addresses, expert panel sessions, poster presentations, workshops, and networking, participants came away with new insights and relationships that they would bring back to their home institutions.

Hans J. Hoyer (IFEES & GEDC), Michael Auer (IGIP), and Aswin Karthik (IGIP), gave summaries of their sessions during the week.

Claudio Borri (Universita degli Studi di Firenze) made an open invitation to 2014 WEEF participants for the 2015 WEEF Florence (www.weef2015.eu), which will take place from September 20-24, 2015 in Florence, Italy. The theme of the 2015 WEEF is *Engineering Education for a Resilient Society*.

John Beynon (University of Adelaide) invited all engineering deans to the 2015 GEDC Conference (www.aomevents.com/gedc2015), which will take place from November 30 - December 2, 2015 in Adelaide, Australia.

Alaa Ashmawy closed out the week with recognition for all the people who made the WEEF 2014 Dubai possible, including sponsors and participating organizations. Meeting Minds Dubai received a special thank you for running all the logistics for the week.

We thank everyone who made WEEF 2014 Dubai a grand success. We look forward to seeing everyone in Florence, Italy at next year's WEEF.



For WEEF 2014 Dubai photos and the full week's program, please visit www.weef2014.org