



WFEO YE/FL Standing Committee Report
International Strategic Planning Forum
Stakeholder Collaboration for Global Integration of Youth in Industry
3-6 March 2015

The annual committee meeting was held at UNESCO in Paris in December 2014. The small group of delegates was working on the strategic plan for the next four-year term of the YE/FL STC, to begin in November 2015 in Kyoto, Japan. Certain topics tend to resurface throughout these on-going discussions, one of which is the committee's goal to bridge gaps left by formal education to help young engineers become successfully employed.

In discussing the challenges young engineers face in seeking and achieving employment, the idea of "camps" were discussed to examine six regions throughout the world, note their unique employment challenges, and draw parallels from all five regions. The regions include: Asia Pacific, Europe, Middle East, Africa, Latin America, and North America. The end-goal is to issue a position paper on youth employment challenges in each region and ideas for how these can be overcome. The Kuwait Society of Engineers President was in attendance, and agreed to sponsor the camp in Kuwait to represent the Middle East. A workshop was held in March 2015 to meet this objective.

This forum truly came about as the result of the outcomes from the first Young Engineers/Future Leaders Conference in Kuwait in February 2013 and marks the second independent YE/FL standing committee (STC) function from WFEO events. The forum contributes to the committee's strategic plan by inviting stakeholders to for an open discussion to define their current needs and expectations. The workshop was divided into three themes: what companies need from fresh graduates and young engineers; what universities know about industry expectations; and how third parties are trying to fill the gap between university life and work life by preparing young engineers to work in private sectors. Striving to identify the gaps between formal education and the capability to function in industry as young engineers, catalyst questions were posed throughout to spark thoughts around specific topics. This forum was an opportunity for open discussion between private industry, government, universities, and young engineers to voice their concerns to better meet each other's expectations. The workshop had many guests in attendance, including representatives from private and governmental sectors, universities, and government ministries associated with helping job seekers find employment.

The workshop was divided into three days to focus on the major stakeholders in play: Companies, Universities, and Public & Private Sector. Each session had specific questions that were used as conversation guides throughout the discussion. The graphic below was used to illustrate three key



concepts: Perception of Industry Needs (PINs), around which the academic curricula is largely based for preparation of the student to enter industry and finally Reconciling the Grey Areas in Industry Needs (ReGAIN) which goes back to filling in the gaps of traditional education to better equip young engineers entering the workforce. It is on this grey area that the committee is interested to focus on.

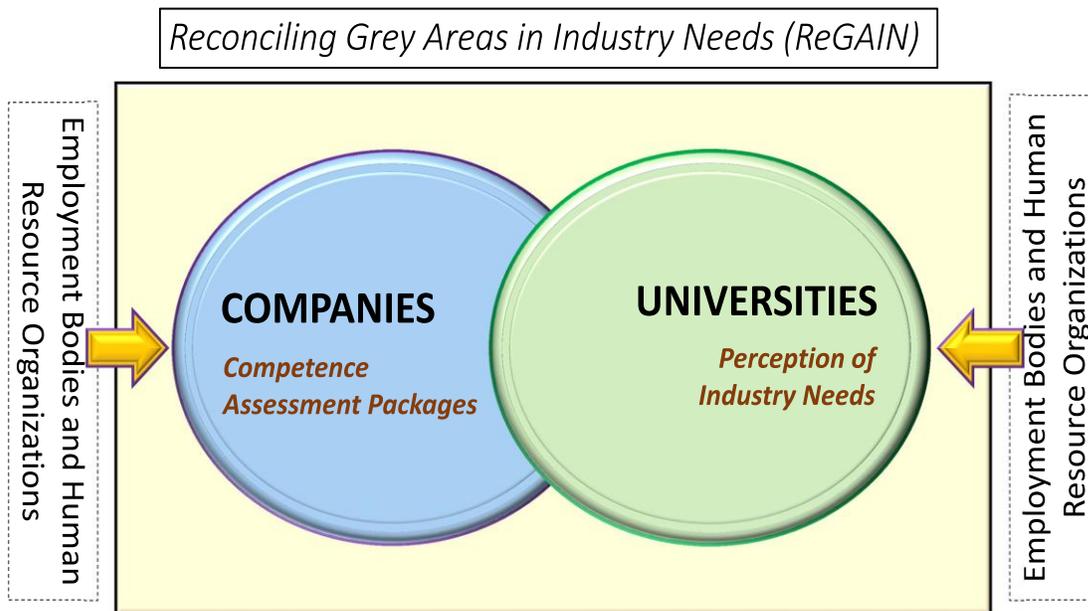


Figure 1- Reconciling the Grey Areas in Industry Needs (ReGAIN) Illustration



As the YE/FL STC enters its second, four-year term in Japan in November 2015, committee leadership aims to develop a concrete strategy, objectives, and future outcomes for the WFEO convention meetings in Australia in 2019. The purpose of this workshop is to develop this four-year strategy, with the help of trusted advisors. The strategy note also includes proposals for tracking progress on these initiatives, implementation of resolutions, strength of networks, development of people-sized technologies, and the responsive alignment of all stakeholders' (Companies and Institutions, Universities, human resource organizations, young engineers etc.) needs for the benefit of young engineers.

Day 1- Company Objectives When Hiring New Talent

The first day's theme was: Companies' point of view: Present & discuss the problems companies are facing when hiring or working with young engineers. The following companies attended: Solarity, an alternative energy company; Schlumberger, world's largest oilfield services company; Equate, a petrochemical company formed by PIC & Dow Chemical; AMEC, oil & gas consultancy; and Kuwait International Bank. To start the conversation, we were curious as to each employer's general needs and thus which engineering disciplines are most demanded by both private & public sectors. There appeared to be a heavy balance on petroleum engineering, as that is the single industry in Kuwait, though all disciplines support the industry.



Photo 1- Forum Day 1

It appeared very quickly that the job market in Kuwait is unlike that elsewhere, as it is heavily dominated by government and unique, even compared to other countries in the gulf region. Not only are most people employed by the Kuwaiti government, the government assumes responsibility for each citizen to find employment. Employment is one-hundred percent guaranteed, though wait times vary. For a private sector job, the average wait is between two and six months; however, for a government sector job, the wait is a minimum of six months and can last as long as eighteen months. This occurs as each ministry is constantly evaluating their needs for new graduates. A list of available positions is published four times per year. This method is considered a sustainable way to make sure all Kuwaitis are employed into the future.

However, Is it enough to provide a job for every engineering graduate? The desired result is not simply employed engineers, but engineers working in the fields and capacities that they desire. A structure could be put in place to identify non-traditional roles for engineers within the economy and expand the placement of engineers outside traditional roles, as well as better place engineers within the traditional



job positions, according to their personality and career objectives. Available jobs are greater in number than annual graduates, of which 54% matriculate from Kuwait University. If there are more jobs than graduates then why are there unemployed graduates? The perspective of all stakeholders involved shed light on this situation. Some questions arose which made clear a distinction between a preference to work in the private sector, so much so, that the private sector has trouble employing Kuwaitis and thus there is a large foreign contingent working in the state to meet the demand. Questions that surfaced as this fact came to light included: What do employers see in foreign engineers that they don't see in Kuwaiti engineers? How can we grow the interpersonal skills among Kuwaiti engineers so they can compete for jobs?

The main differences between Kuwaitis and foreign nationals noted by employers were the following: Discipline, including reliability, responsibility, timely & regular attendance, and the desire to work hard, not just for a paycheck, but for a career; Performance, not just the capability to performance, but the discipline of mindset.; Self-Improvement, demonstrating knowledge of the latest technology, exposure to a variety of projects & experiences, active networking, and taking the initiative.

Each firm operating in Kuwait must fulfill a certain quota of employed Kuwaiti nationals. In one small private company, the percentage of Kuwaiti to non-Kuwaiti engineers is 62% Kuwaiti. In this firm around fifty people manage assets in excess of eight billion KD. This means that each employee works a lot of hours, often irregularly so. There is no redundancy in employed engineers. In this particular company, different competencies have been observed from new recruits, who tend to be aggressive and thirsty for training.

There is an obvious chasm between the draw to governmental and private sector employment so what will motivate more young engineers to work in the private sector? Which companies are more attractive to young engineers and what are their value drivers? Young engineers are more drawn to governmental sector in Kuwait than private companies, for a variety of reasons, but largely because they are stable, secure jobs. The workload is predictable and the hours are regular.

On the other hand, those who want to make a difference in society are often drawn to the private sector because the environment fosters autonomy, allows for positions with future growth opportunities, variety of work, a strong professional development structure, and provides the flexibility for creativity. One way to increase private sector employment would be to increase the Kuwaiti utilization quote, but there is little incentive for companies to do so, and even less incentive for young engineers who know that it is only a matter of time before they are placed in the government sector. In the oil sector, mega projects exist which provide good opportunities for young engineers to come up in the business and to be part of



a project which further develops the oil sector in Kuwait. Experience can also be gained through shutdown when all maintenance processes must be completed in a short amount of time. The opportunity of working on one tough project early in one's career can help shape one's entire career. Another challenge is that, if a young engineer not promoted to a managerial position, say after 5 years, then enthusiasm wanes; however, it takes more than 5 years to have the necessary experience to competently manage multimillion dollar projects. Often young engineers don't have the patience or tenacity to see difficult aspects of the projects through. Companies notice when a significant contribution is made, but there is no concept of delayed gratification in Kuwait, which would result in more and/or better opportunities for the young engineer in the future.

In discussing what qualities the hiring company regards as most important in a young engineering recruit, aside from technical skills, similar traits were echoed from all industry representatives present, which included a key strength of energy, willingness to learn, and enthusiasm. New graduates need not be afraid to ask questions so they can learn, and they should be willing to provide support and assistance so others can learn as well. A rising star takes the initiative to learn, is independent, a self-starter, and strives to be better than his peers. He seeks out challenges and is not just satisfied with what is assigned to him. These are qualities that come from the inside. The most important quality is *not* experience or present capabilities. Those who are willing to work and invest the time in developing as professionals are those that become the go-to resources and rise to the top of the organization, in terms of leadership.

There is a general perception among private sector employers that young Kuwaitis are not willing to work hard. As students and job seekers, young Kuwaitis are used to a lot of free time so when a private company demands more of their time, the young professional becomes exhausted and thus his social life suffers. However, on the topic of work ethic, one young Kuwaiti made the following statement, if you shine you will do so weather in public or private sector. A myriad of opportunities can be found in *both* private and public sectors. One needs to ensure his choice of company fosters the kind of work environment in which the young engineer wants to work and be accepting of the preset conditions of that environment. Emphasis should be placed on finding a job that fits one's personality, ambition, and career objectives. It is important to comprehensively read an employment contract before signing it so that one is prepared for and agrees to the expectations placed upon him. The most important point to note, is that the young engineer is in charge of his own growth or stagnation, no matter where he is employed.

Conversely, the young engineer needs to feel a sense of security from his employer to know that they are committed and invested in the young engineer's personal and professional success. There needs to be an element of trust, while also allowing for inevitable failure. Expectations of young engineers vary



throughout the industry. Young engineers can feel a tremendous amount of pressure to develop themselves creating an “island” mentality with no perceived resources to turn to for advice or help. It is equally important for companies to have a structured integration planned for new hires while simultaneously being made to feel like a valuable and positive contributor to company projects and objectives. Practices, such as keeping a daily diary can foster discipline, create a record for the beginning of employment which can be evaluated by a supervisor at the end of every month, and allow for a personal review of professional growth and development. Self-teaching is efficient and easy with the advent of the internet. Performance is an aspect in which the young engineer should work continuously for improvement.

Schlumberger is a unique private company, which provides a comprehensive and rigorous five-year training program for all employees. Any discipline of engineer is hired and is trained according to his career aspirations. At this company, every employee is an engineer, which brings a unique perspective non-engineering roles, like human resources and marketing. The company conditions employees to be mobile and flexible. Schlumberger attempts to increase employee retention by providing for a plethora of business opportunities while remaining within the company to avoid boredom or disinterest of the employee. Further, there is no limit for those who aspire to the upper echelons, as the company’s policy is to promote strictly from within. The company recognizes that technical and professional skills will develop over time. A good candidate has a sense of responsibility, and has done a lot of internships and/or volunteering.

Another private sector company, AMEC, has a formal pre-job/on-the-job training program consisting of a 15-month total program of which seven-months are spent on pre-job training and eight months are on-the-job training. Upon training completion, one can transferred to a different role. This allows young engineers to shadow senior engineers to learn to negotiate the business. The company representative estimates that 60% of the skills required are learned in the field.

One is not *really* prepared to work upon graduation, even for a young engineer who excels at coursework. One quickly grasps that there is much to learn before he can be useful in an office environment. The young engineer must humble himself to learn each part of the business from the ground up. Hands-on experience is the most valuable skill as it provides the background to work on progressively harder tasks in the future. Young engineers need some form of exposure to industry either just before or just after graduation, a topic further explored on Day 3 of the forum.

While all disciplines of engineers are in-demand in the Kuwait economy, the private sector faces a shortage of computer, electrical, mechanical, and chemical engineers. The public sector faces a serious



shortage of industrial engineers. However, not everyone is suited to work in the predetermined boxes of employment in the public or private sector.

Creativity can be nurtured by the International Bank of Kuwait to create additional a different kind of entrepreneurial discipline. The situation in Kuwait is further unique in the way the International Bank of Kuwait (IBK) fosters entrepreneurship among its citizens. The IBK supports projects that are well planned and have a solid business plan. The IBK undertakes a feasibility study when approached by a young entrepreneur applies for a loan. The feasibility study takes approximately four to five weeks to complete to determine the return on investment for the bank. Upon completion of the study, if it has been determined a good investment, the applicant is granted a loan. It's should be noted that not only is financial support provided, but assets and equipment required to complete project as well. IBK aids in the construction process so the whole business is funded. An Islamic Loan is also available, though funded somewhat differently, the loan covers 80% of the project cost. In addition, this loan may go toward already complete projects to improve them. The IBK and Islamic Loan is available for projects across all professions. The government's strong support for this program fosters innovation and creation among society by making funds to realize projects so readily available.

The value of establishing a private enterprise is fulfilling personal ambition and creating job opportunities for oneself and for others 'security. This has the added benefit of growing the economy. Additionally, innovation & creativity will usher the economy into the future. Academics should try to plant the seed of possibility in the student's mind to spur non-traditional career choices and increase awareness that this is an achievable objective. A nation's economy is only as vibrant as businesses built by her entrepreneurs, the patriotism of her citizens, and their love of country, hence the need to inspire young engineers towards building private enterprises. It also creates a proud legacy within the industry and society.



Day 2- University & Training Centers Preparation of the Young Engineer for Employment

The second day focused on the universities & training centers' point of view. Forum guests included representatives from the Engineering Training & Alumni Center – College of Engineering and Petroleum; Kuwait University; Kuwait Society of Engineers Training & Development Center; American University of Middle East (Tawteen); and The Public Authority for Applied Education and Training. The diverse guests on this day brought to light a variety of interesting perspectives on sabbaticals, internships, training, and academic preparedness.

One issue which was contemplated is whether the current engineering curricula in Universities robust enough to satisfy the wide range of industry expectations? And in the same vein, what else can be done to improve the quality of engineering graduates for industry job positions and entrepreneurship? On the topic of internships, universities were able to stress that more emphasis should be placed on them, and perhaps even mandate them as part of the university curriculum to aid in closing the gaps of preparing engineers to function from the first day of employment, rather than having those expectations delayed until months of training is completed. A degree of training specific to the company or ministry is obviously necessary, but on some level, training required to successfully practice as an engineer is the same in terms of on-the-job training, whether it be making presentations or smoothing over disputes between colleagues and clients. Students who have the opportunity to experience the work atmosphere prior to graduation are able to observe some of these skills themselves whilst also beginning to develop themselves in this arena. In this way, the experience of an internship can set a student apart from his peers, and often displayed during job interviews.

The university perspective is largely based on feedback received from students participating in internship programs that are managed and/or developed by the university. However, it must be stated that internships are not common among students, and the university has received some push back from the industry, largely private companies, who do not feel that internship programs are a useful way to expend their resources. Additionally, students do not feel compelled to complete internships because they know that the government will guarantee their employment and thus there is little competition for jobs.

The American University's first graduating class was in 2012 whence 250 industrial engineers were in the maiden matriculating class. The American University offers an alternative to Kuwait University, which educates the vast majority of engineers pursuing a degree in Kuwait. While internships are not mandatory, companies have offered training to senior design competition winners as an incentive. However, only a handful of graduates are gainfully employed as they are waiting for a ministry position



to become available. Educators at the university have encouraged students to pursue careers in the private sector.

While every graduate faces stagnation between graduation and employment, the KSE Training & Development Center aims to provide rudimentary training to accustom & prepare young engineers for the work environments in which they will be entering. Additionally, there is an employment recruitment training market for CV preparation for those seeking employment in the special job sector.

For the first several months in a government sector job, young engineers are subject to specialized training programs specific to the ministry for whom they are working. Frequent supervisor evaluations ensure continuous improvement in performance. Employees are also able to provide feedback to the employer in the form of a survey. But even if the proper training and support is provided, are young engineers getting jobs that they want, rather than what is assigned based on ministry availability? And are the skills and personal abilities of the employee a good fit for the role to which they have been assigned? It appears these questions are not being asked or assessed often enough within government sector employment in Kuwait.

From an educator's point of view, communication between industry and university stagnates. There are organizational boundaries, which are unable to be overcome because university and industry have their own respective "languages." While the transfer of information can be difficult, it is important that stewards facilitate the "translation" of information necessary for good communication to improve preparedness for both university education and the industry. Similarly, the ability for the engineer to explain engineering problems to those with no engineering background is a very important skill for government sector employees, as they frequently must relay technical information to the lay-public.



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Photo 2– Forum Day 2

As we continue to define the qualities which make up the “ideal” engineer, we asked university representatives the same question which was asked of industry professionals regarding, aside from the



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core technical courses and trainings, what other skills are regarded as most important for young engineers' development? The response echoed the industry professionals from day one, in that, all agreed that the development of technical skills is acquired over time. University aims to instill in young engineers a willingness to learn, a thirst for continued knowledge acquisition, and enthusiasm for new experiences.



Photo 3– Forum Group Picture



Day 3- Knowledge of Industry Requirements by Job Placement Bodies

Day three of the forum focused on peripheral bodies involved in employment and included the following guests: Manpower and Government Restructuring; Civil Service Commission; and Engineers Without Borders- Kuwait. This was an opportunity for them to present their respective projects, which aim to limit the gap between graduation and employment. Additionally, these institutions have knowledge of companies & their requirements of newly graduated young engineers.

The representative from EWB Kuwait posited that young Kuwaitis can show their patriotism by working locally for private sector companies. This allows for more jobs for Kuwaitis and thus reduces the need to seek labor from foreign nationals in order to operate at capacity. By encouraging Kuwaiti employment in Kuwaiti private sector companies, a more responsible generation is created, who is working for their local economy. The private sector may also allow for more opportunities for creativity and even be a catalyst for more Kuwaitis starting small businesses.

To create such a movement, a medial campaign could be created to challenge young Kuwaitis to migrate to the private sector. Additionally, better benefits could be attractive to young job seekers. Accurate needs for private corporations are not currently known, and tracking the retention of employees hired as a result of the campaign would be paramount to developing metrics to evaluate if the campaign was successful. Better partnerships between universities and professional societies could also encourage Kuwaitis to explore a career path they otherwise would not. Facilitating cooperation on this front would also be essential to encouraging a larger majority of Kuwaitis to seek employment in the private sector.

The Manpower and Government Restructuring Ministry offers a comprehensive training program for recent graduates; however, participating in this one-year program does not allow the young engineer to remain on the “wait list” for available jobs. In effect, it penalizes the young engineer for participating in this training program. The program offered is comprehensive, and includes six months of training outside of Kuwait; however, this brings about a different set of challenges as women largely cannot participate due to cultural and familial reasons. Additionally, many participate only for the travel aspect of the program. Alumni of the program are perceived as having higher qualifications in the job market. Overall, the sentiment is that the perceived benefit or “elite” status does not outweigh sacrifices of remaining outside of the job market for an additional year post-graduation.

Perhaps the largest perceived problem is the lack of incentive for students to obtain an internship because they know the government will guarantee their future employment. As internships take place, almost solely, in the private sector, companies do not perceive the value of such a program as students often do not take the opportunity seriously. Further, each private company has their respective internal



training programs for all new hires so training must take place regardless, and vary widely from company to company.

The training program offers many more benefits than what is superficially observed. Participants have the opportunity to learn a different country's business practice customs. They are able to participate in the engineering profession abroad and are provided greater perspective than the limited industry exposure in Kuwait. Exposure in a working environment develops vital soft skills necessary for business practice, which are often neglected in academia. Further, working experience, even in a training capacity, allows the young engineer to come into their own, developing their professional self, and creative confident, competent young professionals. It also allows for real, working experience so that young engineers become familiar with their performance expectations.



Photo 4- Forum Day 3



It is important to note that none of the attitudes or perspectives discussed in this report relates to a monetary situation. The Kuwait government generously provides stipends for students while they are in college. The internship program run by the ministry also provides a stipend for participants. Finally, whilst graduates wait to be placed in the job market, they are provided a stipend to cover living expenses. Throughout each phase from student to job seeker, living expenses are provided for.

The government of Kuwait makes a conscious effort to ensure every engineer is not only employed, but also positively contributing to society. More coordination and cooperation with respect to job placement will create a more positive benefit. While the government places the large majority of engineers within the governmental sector, it must be noted that engineers are not necessarily placed in engineering roles, as there are many more engineers seeking jobs than actual engineering jobs available. Engineers are largely placed in administrative capacities. The result is that many people are unhappy with their jobs, but hesitate to make a change because of the security their governmental job provides. It can be somewhat challenging to ask for or receive a transfer to a different ministry or role. While the government views its responsibility to place each graduate in a position which employs them while creating a positive benefit to society, a greater effort needs to be made to place the right type of person in the right kind of job to ensure employee satisfaction and career objectives. This also creates a positive ripple within the government, as happy employees are more likely to be productive in roles in which they excel.

At the end of the sessions, key drivers were identified at the close of this session, namely, identifying what motivates young engineers to continue their training outside of formal education. Are incentives necessary to encourage further training? What does the picture of the ideal engineer look like? And how can we bridge the communication between industry and academia? With increased communication from both new graduates and industry hiring managers back to the university and training centers about the performance and preparedness level of recent graduates versus expectations, the university curricula can possibly be tailored to better prepare young engineers for employment post-graduation. Can existing training programs in Kuwait be restructured to encourage the young engineer to participate without penalizing him with respect to employment wait time? On the surface, this would seem to be beneficial to all parties involved, as the young engineer can be productive by furthering his training whilst waiting to be placed in the job market, and in turn, new employees can lessen institution related training time by demonstrating more advanced soft and professional development skills compared to peers who do not take part in the internship and/or training programs. Finally, the concept of patriotism of working in the private sector to contribute to and advance the local economy, while encouraging creativity and healthy competition, thereby creating more qualified job-seekers.



Photo 5- Forum group Picture



Conclusion

YE/FL leadership spent the fourth and last day drafting a whitepaper based on the outcomes of the workshop. The draft whitepaper is attached herein. This report briefly touches on the discussions throughout the forum, but it is no way a comprehensive representation of all the knowledge acquired during the three-day workshop. This workshop was invaluable to understanding the employment situation in Kuwait. Kuwait being a small, heavily government directed state, creates a unique employment environment unlike other countries. While YE/FL leadership was hoping to extrapolate the results of this forum to the Gulf Region as a whole, it is clear that Kuwait is not representative enough of the employment conditions of young engineers in the region.

YE/FL feels this topic merits further discussion, and committee leadership is already planning a similar forum during WEC 2015 in Kyoto, Japan, to gain a better understanding of the situation young engineers face as they transition from student life to young professionals in the workplace. We hope that forum guests can depict an accurate picture of the process in the Australasia Region, but based on forum outcomes in Kuwait, we may well find an industry situation unique to Japan, which is not representative of the region, as was apparent in Kuwait.

These points are but a few of many, which have been discussed throughout the three day workshop. Doubtless future conversations will come about as a result of the discussions which took place during the forum. YE/FL will be issuing a white paper for presentation among the wider WFEO body during WEC 2015. In addition, our sessions in Japan will include similar topics while attempting to gain a broader understanding of similar issues in the Asia-Pacific region. We hope to carry on the discussion throughout other regions of the world as well, and identify global issues between the young engineer & the engineering industry, and offer potential solutions resulting from our individual and regional experiences. We aim to create metrics for monitoring these issues and track changes which may be brought about as a result.



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Photo 6– Forum Closing Ceremony



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It is abundantly clear to the committee that this topic requires further exploration. This report is in no way meant to be a comprehensive representation of either the employment situation in Kuwait or the outcomes and take-aways from this forum. As we move into our second term as a standing committee, addressing the transition of young engineers into practice is a major strategy objective. We will have the opportunity in the next term to evaluate the situation in Japan, Peru, Rome, and Australia. At the end of the term, we aim to submit a comprehensive report to WFEO for review by other the standing committees, detailing our findings from the six regions and drawing from similarities realized from each region to reach general conclusions about the transition of young engineers to the workplace on a global scale. In the future, these findings could highlight a strategy for better integration of YE/FL members into other standing committees in order to improve student/young professional exposure to the experience necessary to fill the gaps of formal education and better prepare young engineers to compete for desired jobs within the engineering profession.



Photo 7– Forum Closing Group Picture



Note: The views and opinions expressed in this documents are those that were observed during the forum from participants and recorded by committee leadership. This report is not meant to reflect the personal opinions or views of any committee member or forum participant, rather to create generalizations drawing from the forum discussions. This document is neither meant to criticize Kuwaiti government practices nor private enterprise business conduct but simply to record observations from the forum.