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PRESIDENT'S REPORT

Last year when I did my inaugural speech I spoke of a vibrant society and a vibrant future. It was the slogan that I chose for my presidency. If I'm talking about a vibrant society I am not only referring to this Institute, but also to the society of Industrial Engineering practitioners.

Vibrancy is being full of life and being energetic. What I can tell you from my experience during the past year, having met with various members of our Institute and fellow Industrial Engineers, is that we are definitely a vibrant profession.

Our mandate is first and foremost to represent the Industrial Engineering Profession to the Engineering Council of South Africa. The second part of our mandate is to represent the interest of our members.

In the very beginning of this year, I did a Roadshow. It was not only about introducing the Professional Registration programme, but to actually see for myself what the future of our profession looks like in terms of IE Students, and if we are talking about representing the profession, who are we talking about. My biggest learning was about my own paradigm - one generally thinks that the world looks like oneself and the reality is that things look different – the world has moved on.

I went to about 7 or 8 universities and Jacques and I spoke extensively to some of the young students, as Jacques accompanied me to launch our Student Membership Portfolio. I would like to share a couple of the key insights from this particular Roadshow in terms of the profession that we represent.

- Firstly, transformation is happening and I believe that the time will come, not very far from now, where we will, in terms of Industrial Engineering graduate intake/graduate output, be very close to representing the demographics of South Africa.
- We are have a whole number of first generation students, in other words, the first of their generation that actually have the opportunity or the privilege to enrol for tertiary education.
- Very often career choice is limited to courses offered at the local university, as historically disadvantaged students often do not have the means to study in another city.
- If you look at post graduate studies it is not necessarily a logical option, it is a privilege. In so many instances, the current generation of students need to become employable because very often they are breadwinners to a family or even an extended family.
- If you look at Professional Registration, the majority of students and people who started working recently are determined to pursue their Candidacy Phase, and ultimately their Registration.
- A sad reality is that so many graduates battle to find work after having completed their studies. The same applies to students who need to complete their workplace training. They battle to find workplace opportunities, or, after having completed their training, the financial means to complete their studies. This



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has had a significant impact on drop-out rates, with further implications for Schools to receive funding (based on graduate output).

- If you look at the 40 something generation, they do not see themselves as Industrial Engineers. They see themselves as Management Consultants, Supply Chain Practitioners and so forth. Although they have an Industrial Engineering background and qualification, they tend to relate to the Industry in which they are working or the role that they fulfil, rather than their qualification and designation as Industrial Engineers. This has very significant implications for an Institute like ours.
- If you look at the generation between 50 and 80 years of age, and even older (because SAIE do have members older than 80), these are the individuals who have generally remained loyal to their profession and designation as Industrial Engineers. We do need to pull this generation closer because of their collective wisdom. They are the people we actually need as mentors and I am very grateful to see the extent of which these people are coming to the fore.

That in a nutshell is what I believe the profile of Industrial Engineering currently looks like. To a large extent this picture looks similar across the spectrum of engineering disciplines.

No presentation will be complete without statistics, graphs and so forth, especially when you are talking to Engineers. Considering the profile of Industrial Engineering, and the Engineering Profession in terms of numbers, the following deserve mention:

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This graph shows the results of a survey that was done amongst Industrial- and other Engineering disciplines. The three realities I would like to draw your attention to are:

- The Asian and Coloured population was too small to feature in this graph;
- In the age group 26 – 36 the African population is more or less the same as the White population;
- If you draw a line from the highest peak to the 60 something population and you take into consideration natural attrition for e.g. people dying, people emigrating, people leaving the Industrial Engineering profession, you will notice a huge gap, especially in the 44 – 60 age bracket. This is where we experience the actual skills scarcity in Industrial Engineering, and also in many of the other engineering disciplines.

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Industrial Engineering is the 5th largest engineering discipline after Civil-, Mechanical-, Electrical- and Chemical Engineering. 2007 – 2012 statistics show a gradual decline from 8% - 6% in the graduation of Industrial Engineering students at Academic Universities. Since early 2000 a steady incline in Industrial Engineering graduates at the Technical Universities is also noticeable.

Approximately 6000 Engineering students graduate on an annual basis from the Universities of Technology, and approximately 5000 graduate annually from Academic Universities. This means that approximately 11 000 Engineering Practitioners enter the workplace every year. The record number for graduations in Industrial Engineering in the past 10 ten years were 450. Industrial Engineering graduates from Universities of Technology shows a gradual upwards trend, whilst Industrial Engineering graduations from Academic Universities are stagnating. This is a big concern.

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These graphs reflect the racial and gender distribution of professionally registered Industrial Engineers. The racial distribution of professionally registered Industrial Engineers is representative of the graduate output, but the female distribution is not, which is very concerning and needs to be looked into. We share with the Agriculture Engineers the 2nd last place in terms of professional registration. This is another big concern and

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Council is putting in a lot of effort to address this. The good news though is that the younger generation wants to register, unlike the generation between 35 and 45 years of age.

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Transformation is happening, but unfortunately there is a huge gap in the 40 something and older generation in terms of being demographically representative. We simply cannot reverse history, or do anything about this.

The new curricula for B Tech Eng. qualifications will make a significant difference. I believe that is the right thing for the right time, provided that the change is managed pro-actively and with due consideration to industry. Council will make an effort to promote this course.

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A number of SAIIE members participated in the scarce skills survey that was launched by the Department of Higher Education and Training in 2013. The role of DHET in terms of the National Development Plan is to ensure that there would be a sufficient pipeline of skills that are considered scarce. The objective of this study was to determine the extent of scarcity, to offer motivations for scarcity, as well as to propose solutions to some of the systemic issues experienced in the education system that affect the respective occupations, and amongst others our discipline.

The result of this tremendous effort from the task team was that Industrial Engineering is now ranked the 8th scarce skill in South Africa. The following professions, for which industrial engineering is often a point of entry, are also on the list of scarce skills:

- 5th Programme and Project Manager
- 37th Manufacturing Managers
- 62nd Supply and Distribution Managers
- 80th Production and Operations Manager
- 90th Logistics
- 99th Quality Systems Manager

The question we should ask ourselves is whether we are pro-active in supporting skills development into the above professions? This needs to be one of our key focus areas in the decade to come.

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As soon as the results of this survey was published, SAIIE members started responding that they are not finding work, despite the so-called scarcity. Could it be that we are facing a situation where we are not supplying enough Industrial Engineering Practitioners, whilst at the same time we have Industrial Engineering Practitioners that are not gainfully employed or who cannot find work? Yes, we do have to face the economic reality that formal employment is scarce. Another reality is that Industry does often not understand the value of graduates that enter the market.

We are facing a mismatch between supply and demand, especially amongst people with BTech and NDip qualifications. Do the graduates that enter the market have the type of qualification that Industry needs? Do we align our curricula with what the market requires? We are not sure, but will invest in a comprehensive and objective study that will focus on answering these questions. We will consult extensively with both Industry and Academia and the findings of this study will be posted, for members inputs, on the website.

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This graph comes out of the Scarce Skills Report. It is important that we understand why we need to align supply and demand. Zone 1 could be seen as the safe zone. This is where for example an Operational

Manager or Supply Chain Practitioner with an Industrial Engineering qualification is appointed. Their roles and skills are perfectly aligned.

In zone 2 we are looking at the following Industries for example:

- Contracting and Engineering Consulting Industry
- Health, Social Services Sector
- Finance Sector
- Public Sector

These are all relatively new industries for Industrial Engineers to work in, and are should be making an effort to bring into the existing curricula some of the contextual knowledge that is necessary to support people in those Industries. This is where our profession is growing and this is where we need to become increasingly relevant.

I refer to zone 3 as the “Space Invaders”. I was involved in a major project when I realized that the most fundamental bottleneck in a major construction programme was a so called Site Planner who had been appointed to the role on the basis of his Primavera skills. Sadly he knew absolutely nothing of planning principles and integrated delivery planning, with subsequent poor results in terms of throughput of the particular unit being fabricated, and ultimately the entire programme.

Are we happy that other professions play in a field that could be filled by Industrial Engineering Practitioners, who are so much better equipped to add value to these roles? If we can address these issues we can secure a sustainable, prosperous future for Industrial Engineering.

We should be focusing increasingly more on these issues in future. Focussing on the relevance of our profession is important because we are not effective as a profession in advertising and promoting what we can do; not at offering bridging courses to equipped people with our skills sets in order to add value in the non-traditional employment grounds of Industrial Engineers.

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The next slides were presented at my inaugural presentation in 2013 and I would like to give feedback on them. The following three concepts are still relevant as strategic focus areas for the next year:

- Relevance to our profession and members
- Growth in terms of membership and revenue
- Effective functioning in terms of the Council and interaction with members

Feedback from Council Members are incorporated. I will unfortunately not be able to cover everything in detail, as we have done a lot.

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- Industrial Engineering profession

The Scars Skills initiative was launched. The focus this year was on identifying the scars skills and will now shift to how we will collectively as an Engineering profession actually address this scarcity and grow the pipeline.

- Career Choice Guidance

We introduced career choice guidance on our membership portal during this past year and we will continue to develop our support to members on this in the next year.

- Professional Registration and Registration Support

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A significant registration support drive was launched during the past year. In partnership with Dr Allyson Lawless from Candidate Academy we started with Road to Registration courses. One course for Candidates was held and two are planned for later this year. A Mentor course, focussing on assisting mentors to be more effective in supporting the development of engineering candidates will be added next year.

- Impact of IE

Forget about glossy marketing brochures, we need to start focussing on case studies to market Industrial Engineering. Very soon I will launch a campaign on the impact of Industrial Engineering.

- “UJ Pilot”

A pilot with the University of Johannesburg is in the pipeline. This entails helping to support new people that graduate with BTech Eng. qualifications. We will make sure that the candidacy programmes are aligned to the qualifications, and that the cadre of graduates, when introduced to the market, have more than a fair chance to succeed. The ultimate goal is to introduce this also to all other Industrial Engineering Schools as well as the other Engineering disciplines.

- SETA Partnerships

Forestry and Fibre Processing Technology Seta made the statement that they will fund Candidate training if we supply the Candidates. The logistics behind this is a different story in terms of making sure that we introduce Candidates to the Seta, and ensure that they are supported through the development pipeline. SAIIE do not have the capacity to do this. We will partner with the Foundation of Professional Development to administer this process. The details will hopefully be available by the end of the year.

- “Curricula Study”

I already mentioned that we need to look at supply and demand and to really make the effort to understand how the technical courses should be structured to meet industry requirements. We will soon launch a study to consult with industry at large, in partnership with, and for consideration by the Schools of Industrial Engineering.

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Seven broad clusters are identified in term of promoting the interest of our members. These clusters will be handled by working committees, strategic advisory committees and the colloquium. They are:

- Membership
 - With focus in the growth of membership in Corporate Partner Membership and Student Membership
- Marketing & Communication
 - We have not given nearly enough attention to Marketing. For me Marketing goes hand in hand with sponsorships and impact. Marketing is multi-dimensional.
- Communication in terms of:
 - Newsletter: We received positive feedback on the Newsletter which is well put together and we thank Marie Ashpole, who does this on a voluntary basis for us. I am encouraging Marie to go much wider in terms of more interesting things for the interesting people we serve.

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- Website: Mohsin Seedat has taken over the Marketing & Communication's Portfolio and he is putting in place with the Department of Communications of the University of Johannesburg, who has agreed to assist us with communication on our website.

- Career & Professional Development Support

Career pages are available on the website. A lot is happening, which is not only related to finding work. Professional Development Support is positioned in terms of:

- CPD Events
- Transactional support in terms of On-line management of CPD points
- Opportunities for CPD in terms of SIG events and so forth
- Graduate and Candidacy support
- Student development. A lot is currently happening in the background.
- Career guidance for school goers in terms of Industrial Engineering

- Events
- Special Interests & Regional Groups
- Journal
- Governance

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Most of the 2014 objectives can be ticked off. I already covered the larger Portfolio's. We are in the process of introducing Working Committees and appointing people to Council that can work with us to take care of the day to day activities and to ensure that things are getting done, according to plan.

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- Registration, Mentorship, CPD and PAC:

The objective for 2015 is online training in partnership with the Foundation of Professional Development. If you know of anybody who is the type of person who can develop a course in a particular field related to our discipline, please talk to us. These online courses will be CPD accredited.

- Discipline Specific Training Guidelines:

We started facing in Discipline Specific Guidelines for Engineers during 2014. During 2015 the focus will move to Discipline Specific Guidelines for Technicians and Technologists.

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SAIIE26 conference was a significant success. If we look at the past conferences, this is probably the conference that made the most money. Feedback was tested on 9 different categories and the respondents all indicated an 80% or more satisfaction rate in each category. We are however competing with Industry Focused Conferences, and are seeing a decline in attendance. This is not a SAIIE phenomenon, but is happening across so many other conferences. I have not got my head around how we could inject a different level of energy into growing the numbers. The profit model is working, but I am not yet sure if we should introduce more conferences, more effort, more profit and so forth. It seems like we need to look at

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partnerships with other VA's, Asset Management, SAPICS, System Engineering, etc. We have done this before with success, but this can only be as successful as the effort we put in. I will give feedback in due course on what we ultimately decided to do.

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Corné Schutte is doing an outstanding job with the Journal. All objectives were achieved and the Journal is going from strength to strength. Increasingly more South African articles are received. This does not mean that the International contributions are declining, because they are also growing all the way.

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- Career Choice Marketing:

The pipeline of Industrial Engineering Practitioners starts by convincing someone to study Industrial Engineering, but again, we need case needs to showcase the diversity of our profession, to convince people to study Industrial Engineering. In 2015 increasing focus will be on students and young professionals because that is where the real pipeline of our members starts.

- Advertising Revenue:

We have Barbara Spence who is helping us with attracting sponsorships. We have a target of R150 000 for next year. This is a bold step, but we have learned a great deal in the past year about sponsorships and marketing.

We have confidently delivered on the majority of objectives that we have set for 2014. I am also confident that we will get to the growth targets that we have set for 2015. Our membership has grown in the past year with about 30%.

Lastly, it is a significant effort and dedication to serve on Council. It is a significant dedication to be a Volunteer in whatever form it takes, and to opt in, instead of sitting on the side line. I am deeply grateful to all that have made a contribution to our profession and to our Institute. I thank you.