Industrial Engineers Australia(IEA)

Incorporated as Institute of Industrial Engineers Australia(IIEA) in 1959
ACN 000 264 513 www.iie.com.au   admin@iie.com.au

Industrial Engineering is concerned with the analysis, design, improvement, installation and management of integrated systems of human resources, data, finances, materials, equipment, and energy as safely as possible with minimum impact on the environment, delivered within a holistic methodology.
INDUSTRIAL ENGINEERS MAKE IT HAPPEN BETTER

The three key objectives of the IIEA are:-
1. TO UNDERTAKE AN ACTIVE AND VARIED PROGRAM FOR MEMBERS
2. TO PROMOTE AND ENHANCE THE TRAINING OF INDUSTRIAL ENGINEERS
3. TO PROMOTE AND CAMPAIGN FOR INDUSTRIAL ENGINEERING OPPORTUNITIES WITHIN INDUSTRY

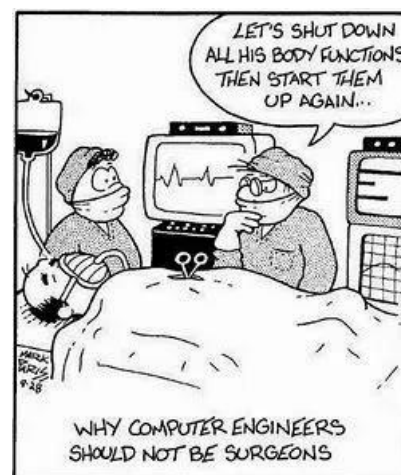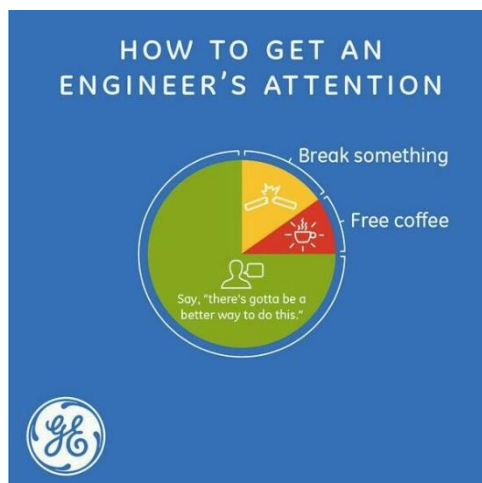## NEWSLETTER 11-December 2021

FROM THE EDITOR-David Karr(CP Eng, FIIEA)

Welcome to the second issue of the IIEA newsletter for the 2021/22 year. We are continuing to have varied and interesting Industrial Engineering(IE) Articles.

With the various challenges that are confronting the world at this time, it is essential that we as IEs, are at the forefront of these encounters. Be it as project leaders in finding/implementing the solutions, or undertaking and facilitating the research in an efficient and effective manner. This hopefully will lead to beneficial outcomes for humankind.

Wishing you and your family a Safe and Prosperous Festive Season.

FROM THE PRESIDENT-David Karr(CP Eng, FIIEA)

Welcome to the next issue of our quarterly newsletter.

We welcome our new members:-

- Liezel Boshoff
- Doug Riddle
- Joe So
- Joel Brady(student)

I hope these new members will benefit from the IEA and contribute actively to IE.

We recently held a Meet the President Webinar. Several members participated.

Topics such as Defining IE, Training of IE's, Promoting IE in industry, academia and government bodies, Promoting IE to potential students, IEA Events Program, newsletter, communicating with members were discussed.

The meeting was undertaken in an open forum manner. Some interesting ideas were brought up. These included:

- Registration with Engineers Australia(EA)
- IE being an accepted Area of Practice(AoP)
- Challenges promoting IE in the workplace

EA has been contacted regarding the acceptance of IE as an AoP of engineering in Australia.

Contact with Curtin University is proceeding regarding the training of IEs. A list 0f 98 core skills that IEs should need prior to graduating, have been identified. It is hoped that the "gap" skills will be incorporated into the 2023 curriculum.

It is hoped that the 2023 AGM will be held Face to Face(F2F) as well online as a Hybrid meeting. The date will be in October, and venue most probably Melbourne.

Over the next few weeks the IEA will be changing over its website name to

www.iea.org.au to reflect our new professional name.

Hoping to meet you all over the coming year.

I would like to wish all our members a joyous safe festive season.

David Karr(CP Eng, FIIEA)-Federal President

FROM THE DIVISIONS

WA Division-David Karr(CP Eng, FIIEA)-acting

The WA Division recently undertook its annual BBQ at David's Estate. We had 8 attendees.
The gathering was very sociable. Much delicious food was consumed. Many discussions on various issues were discussed.
Membership certificates were presented to Pawel Podsiadlo and Doug Riddle.
All left well nourished both mentally and physically.

Did you know............... 🫢

Windows 10

Return to past activities with Timeline
Click the Task view icon in the task bar at the bottom of your screen, to the right of the search window, to see all your recent activities.

Web

Ctrl+S
While working on a document or other file in almost every program, pressing Ctrl+S saves that file. Use this shortcut key frequently if you are working on anything important in case an error happens, you lose power, or any other issues that could cause you to any work since the last save.

Ctrl+Home
Will move the cursor to the beginning of the document, and Ctrl+End will move the cursor to the end of a document. These shortcuts work with most documents, as well as web pages.

CAN INDUSTRIAL ENGINEERS WORK IN THE SOFTWARE INDUSTRY? IS IT A CAREER CHANGE?

by Mohan Ganavarapu (MIIEA)

Can Industrial Engineers work in software industry? The answer is "Yes".
Since software systems are developing for businesses and industries, that requires wide range of industry knowledge and multi-disciplinary domain expertise including automotive, banking, fast moving consumer goods (FMCG), household goods, agriculture, manufacturing and wholesale and retail trade. The versatility of industrial engineers allows them to engage in activities that are useful to a variety of businesses. Industrial Engineers are higher-calibre individuals, they are trained in project management methodologies, project lifecycles to understand, analyse, develop, implement, deploy, testing and maintenance. Also design methods, tools and components that are rigorous, effective, safe, efficient and repeatable. Especially in IT business analysis, industrial engineers can help with a lot compare with other engineering or IT professionals by qualification. It is a known process for IEs to many tasks involved in the software development process like requirement analysis, stakeholder analysis, timeframes, specification analysis, data classification, and configuration rules for variant configuration as well as document changes using Engineering Change Management and many more.

As we know a number of industrial engineers who program in SAS, R and other programming languages when working in operations research and logistics trying to find the optimal routes or use of resources. They also IEs do programming of sensors and equipment for optimal efficiency is less commonly. Many IEs turned in to fulltime software engineers and programmers is not a career change and Information Technology is part industrial engineering like other branches and area of practices.

In terms of IT education and training for industrial engineers, many programs and university degrees (bachelor and master degree level) offering Information Technology and allied subjects as part of their curriculums across the world, the following programs designed with IT subjects

The University of Melbourne
Master of Industrial Engineering
• Manufacturing automation and IT
• Industry digital transformation and optimization

La Trobe University
Bachelor of Engineering Honours (Industrial)
• Introduction to Digital manufacturing (Industry 4.0: The Industrial Internet of Things)
• Embedded Computer Vision (Computer Vision: Algorithms and Applications)

So, Industrial Engineers can work in software development and implementation of IT projects, the following are few areas but not limited to
• Data Analytics or Data Science,
• Operations research in optimizing integrated systems,
• Supply chain management domain experts,
• Simulation modelling and designing E-commerce platforms, etc.

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GETTING INDUSTRIAL ENGINEERING(IE) ACCEPTED INTO MAINSTREAM BUSINESS AND INDUSTRY IN AUSTRALIA

By David Karr(CPEng, FIIEA)

I and especially many overseas trained IEs, have found many challenges when endeavouring to find meaningful employment in the tremendous field of Industrial Engineering.

Having trained and practised as an IE in South Africa and also Canada, to my dismay found that there was almost no recognition or acceptance of IE in Australia and especially in WA.

Our organisation has many overseas trained IEs espially from Asia and South America. Without exception generally, the challenges in finding employment as Industrial Engineers undoubtedly leads to dissapointment. The question is WHY??

Why is IE not accepted as mainstream engineering. Although for decades there were IE degree courseS at UNSW and Monash.

The IEA has applied to EA to be accepted as an Area of Practice(AoP) within the engineering profession.

IEs did have success in the traditional Time and Motion and Work Study areas. This due to technology and changes in work practices in business, reduced the need for the tradition IE skillsets as well as many other resons.

IE is now at the intersection of moving from being a generally unreconised engineering profession, to one of RECOGNITION.

The IEA has for the past 2 ½ years has actually concentrated on getting down to basics in order to promote IE.

There are now 2 universities providing IE degree courses(Curtin University in WA and University of Melbourne). Other universities such as University of Southern Queensland(Mel campus) and University of SA are being encouraged to introduce IE degree courses.

The IEA is also endeavouring to bring Curtin Uni's Master of Industrial Engineering run by the Science Faculty, under the Engineering Faculty. This will be medium term challenge.

Of course that is only part of the challenge. There are two other challenges. They being getting potential engineering students to recognise and enrol in IE courses. The other being getting business to recognise the potential benefits of hirings IEs.

For the past 2 years, the IEA has worked with Curtin Uni to promote IE to 1st year engineering students.

The bigger challenge is to engage with industry, business, government departments etc to underwhat the benefits of IE. And of course to create IE positions in their organisations.

In this endeavour, the IEA has approached some organisations in WA, but with not much to show for it.

One way to promote IE, is to be represented on university Industry Advisory Committees(IAC), of which the IEA is represented on at Curtin and UoM. The other is to directly approach industry. The IEA has done this by organising webinars or onsite visits where IE topics or processes are highlighted.

It is now up to ALL members of the IEA to promote IE within their employer organisations or within their sphere of interest.

It would be appreciated if members have any input into the endeavour, please contact me on davidkarr@interspacial.com.au

David Karr(CP Eng, FIIEA)-Federal President

CHRIS HEYDE AWARD WINNER 2020
- Alexander(Lex) Lyndsay Gale Clark(FIIEA)

Introduction by Bob Watson(FIIEA)

Citation: Chris Heyde Fellowship 2020 awarded to Lex Clarke

Lex Clark has served the Institute of Industrial Engineers for over twenty years as a Federal Director. He successfully undertook the senior roles of Federal Secretary, Vice President, Federal President Chairman of the Membership and Grading Committee and the Senior Envoy to Engineers Australia. Lex has in these roles given a lifetime of outstanding service to the Institute.

Lex commenced his career starting as a sheet metal apprentice with De Havilland Aircraft. During this apprenticeship he undertook part time tertiary studies leading to a Bachelor of Industrial Engineering followed by a Master of Engineering and Science. With these credentials Lex catapulted through the management levels at De Havilland Aircraft practicing Industrial Engineering to become Chief Designer Marine at Hawker Sidley Research.

In 1971 Lex focused his Industrial Engineering expertise into the defence forces becoming Director of Value and Industrial Engineering. Lex set up the Defence Work Study Wing at the Royal Australian Army Ordinance at Bandianna to train all Defence Work Study Practitioners. Lex became the Institute representative for the Department of Defence.

After leaving the Defence Force in 1995 Lex established a consultancy in Industrial Engineering, 'Clark Management and Engineering Pty Ltd'. Lex successfully practiced Industrial Engineering in this capacity until his retirement in 2000.

It is appropriate to say that Lex had a professional and collegiate relationship with Chris Heyde. Often meeting from time to time on learned panels and councils.

In the words of the quintessential Lex quoting from his self written career pathway. "I always thought that Chris's integrity was well demonstrated in the way he promoted and marketed MODAPTS. If you needed MODAPTS Chris would find a way to assist".

Lex often visited Chris at his Mascot office, In his references to Chris Heyde Lex sums up his respect using the Australian euphemism, "a great bloke".

Lex, you have earned the election by the Institute of Industrial Engineers to its highest honour the 'Chris Heyde Fellowship'.

Lex Clark also a Great Bloke.

Citation proudly authored by Bob Watson(FIIEA) 'Chris Heyde Fellow'.