

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 12-March/June 2022

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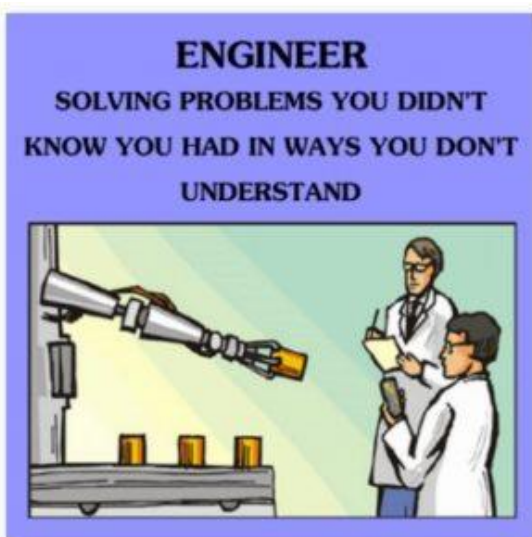
FROM THE EDITOR-David Karr(CP Eng, FIIEA)

Welcome to the third issue of the IEA newsletter for the 2021/22 year. We are back again for another interesting update of IE and the IEA.

We are continuing to have varied and interesting Industrial Engineering(IE) Articles.

In these very trying times, it is essential that we as Industrial Engineers, need to dig deeper so that we focus on utilising our skills to improve the situation for our employers, businesses, organisation, community and of course our families.

Any interesting IE articles, much appreciated by August 31st.



INDUSTRIAL



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

Welcome to the next issue of our quarterly newsletter.

We welcome our new members:-

- Katerin Michell Arias Ramirez
- Satya Syamal Devi Kommoju
- Mansi O'Keeffe
- Vivek Yadav



President with new member Katerin Arias

I wish these new members well and will contribute actively to IE and the IEA.

At the Meet the President Webinar held last year, various topics were discussed. To update members the following has occurred:-

- Defining IE-this is ongoing and will reflect IE as it evolves
- Training of IE's-Working with various universities including **Curtin University(CU)** and University of **Melbourne(UoM)**.
- Promoting IE in industry, academia and government bodies-a program working with CU to introduce IE to industry is planned.
- Promoting IE to potential students-Undertaken with CU
- IEA Events Program-Very interesting webinars on topics such as:
 - Hofmann Engineering- Cutting Edge Heavy Engineering In The Digital Age- Jarrod Hofmann
 - Victoria University-Artificial Intelligence For Designing Efficient Supply Chain Management Systems Prof Sardar Islamwere delivered. Our next webinar dealing with practical introduction to Game Theory will be delivered in July.
- Newsletter, communicating with members were discussed-usually 4 newsletters are delivered annually.
- Discussions with Engineers Australia(EA) with Cameron Mackenzie were undertaken dealing with:-
 - An introduction to IE(amazing IEA has been associated with EA since 1993 and senior members of EA have little or no idea of IE)
 - IE being an accepted Area of Practice(AoP). This is an important issue and hopefully will be addressed soon.
 - Challenges promoting IE within and in the workplace-this will require much more input
- Plans for the 2022 AGM are progressing. It is planned(covid not impacting) to be held Face to Face(F2F) as well online as a Hybrid meeting. The date will be Saturday 1st October. The venue will be Melbourne CBD. It is hoped that many of our Victoria members will attend F2F.
- The website domain name has been changed thanks to Matteo Vinci. The IEA web address is www.iea.org.au to reflect our new professional name.
- I am planning to arrive in Melbourne a few days before the AGM, to meet up with VIC members, the various Melbourne universities and industry in Melbourne.
- Also the issue of IEA documents needs to be addressed. Presently with Lex Clark in Bendigo.

David Karr(CP Eng, FIIEA)-Federal President

FROM THE DIVISIONS

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

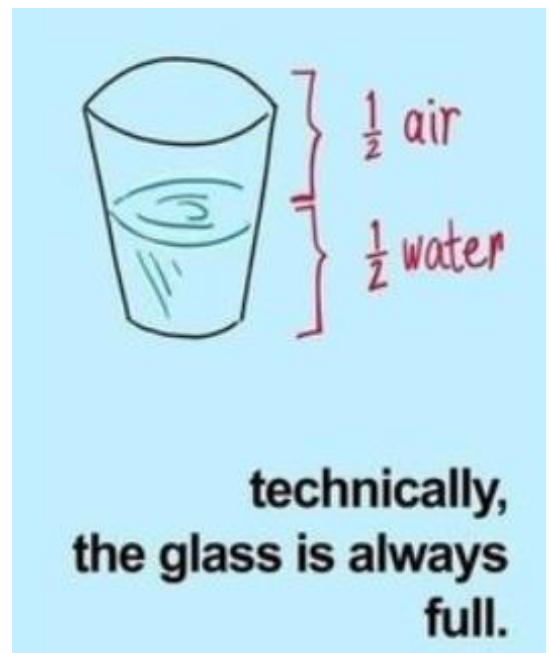
The WA Division recently undertook a webinar 30th March entitled Cutting Edge Heavy Engineering In The Digital Age-Jarrold Hofmann of Hofmann Engineering. Hofmann Engineering is a Heavy Engineering company headquartered in Perth but has operations in Australia and internationally.

The webinar was attended by over 20 members of IEA and EA.

The next event entitled Game Theory-A Practical Application will be delivered in July.

Victoria Division

An interesting and thought provoking presentation entitled Artificial Intelligence For Designing Efficient Supply Chain Management Systems presented by Prof Sardar Islam of Victoria University on 17th May. The presentation delved into the impact of AI in improving supply chain. This is very important especially today in light of the impact of covid. Interesting questions were received from the audience.



PROMOTING INDUSTRIAL ENGINEERING IN AUSTRALIA

David Karr(CP Eng, FIEEA)



The promotion of Industrial Engineering(IE) in Australia is the obligation of all members of the IEA.

At every opportunity, I mention and promote IE, be it at professional, business, academic, community or personal events as appropriate.

There are four major strategic pathways. These include:

Business/Industry

Academic(Universities, students)

Professional bodies(EA)

Government(politicians, bureaucrats, State Owned Enterprises)

Members of the IEA board were requested to list possible companies that could introduce IE departments formally or extending utilising IE principles within their organisation. This received some response.

Business/Industry

Some companies that could be approached could include

- Large Mining/oil gas companies(BHP, Rio Tinto, Woodside, Alcoa, Santos etc)
- Large/medium value adding organisations(Refineries, CSL, Steel manufacturers, bottling companies, wineries, chemical plants etc)
- Service Companies(Coles, Woolworths, Bunnings etc)
- Transport(ports, airports, rail etc, local transport)
- Construction(buildings, roads, large utilisties etc)
- Health Care(hospitals, private health care)
- Banking
- Hospitality(hotels, tourism etc)
- Etc etc

Undertook an event with Hofmann engineering where IE was introduced to the company. A followup is required.

Academic(Universities, students)

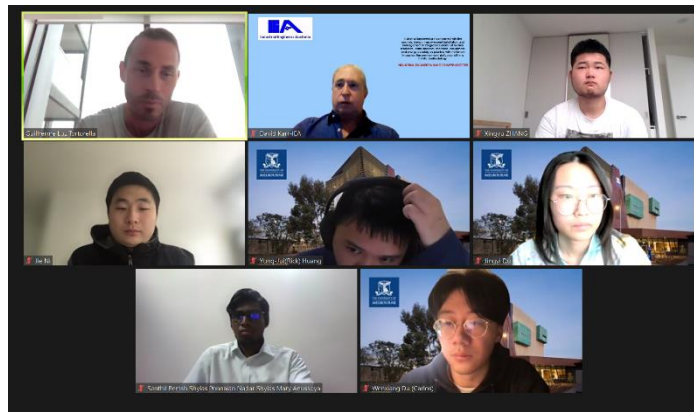
The IEA has been active with Curtin University(CU) in Perth and the University of Melbourne(UoM).

CU-ongoing student presentations. Recently a first year student project assessment where IE was promoted.

Working with CU to promote IE within industry as well as participating on engineering and IE curriculum review.



UoM-Delivered an introduction to IE to master of IE students. Also presented a training session on Game Theory.



Professional bodies(EA)

The IEA met up online with Jane MacMaster(JM) Chief engineer of EA. IE was as a very important component of engineering was present. Interestingly had little idea of how IE influences organisations. This seems to be endemic in Australia. IE is in the top 3 streams of engineering practised in North America.

It is hoped that there will be further contact with EA in the future.

Other professional bodies such as The Australian Society for Operations Research (ASOR) and other like minded bodies will also be contacted.

Government(politicians, bureaucrats, State Owned Enterprises))

There is a need to also promote IE within government and the bureaucracy. In WA there is a dire need for reform especially within the health dept which is excessively burdened with non core personnel.

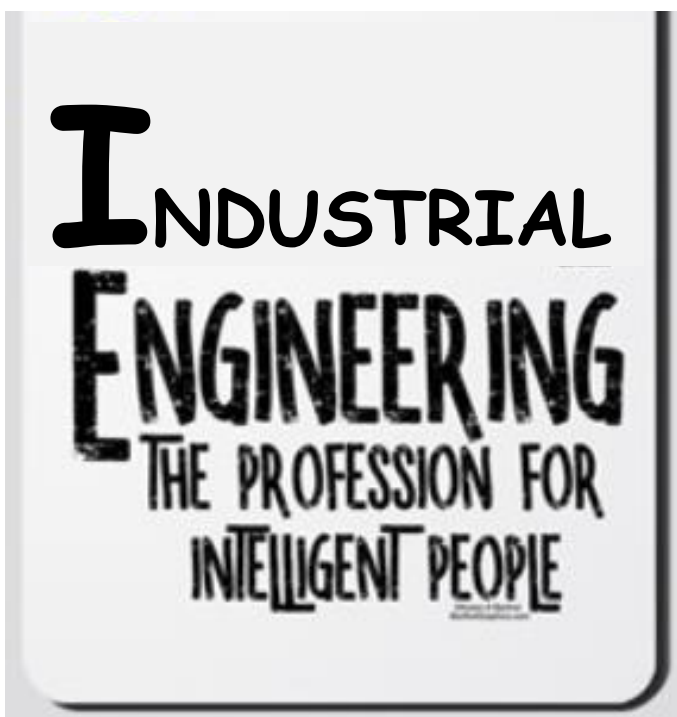
Formal meetings need to be setup.

I ask all members of IEA to take the opportunity to promote IE within their workplace and within their circle of professional and personal groups.

I leave this message with you take every suitable opportunity be it at work, meetings, etc to introduce IE such "as an IE looking at things holistically, I could do it this way...."

If you have any ideas or would like to be part of the team, please contact me at president@iea.org.au

David Karr(CP Eng, FIIEA)





EXPERIENCES OF AN INDUSTRIAL ENGINEER

-By **MANSI O'KEEFFE(MIIEA)**

Industrial Engineering and Management

Oklahoma State University, USA

December 2005

I started my Engineering journey as an Electrical Engineer. In my Junior year (year 2) I realised computers didn't bring me much joy. Neither did physics, the only O(h)m I cared about was when I was crossed legged sitting on my yoga mat. So started my quest for something that combined process, systems and humans.....and I found this amazing field of study that combined all those topics and more. Industrial Engineering and Management. I got to design experiments and build in operational excellence, understand what quality control meant, the negative impacts of bad ergonomics, the benefits of good process controls, statistics, engineering project management, linear and non - linear optimization, operational research to name a few. For me it was literally the best of all the engineering fields.

I can wholeheartedly say I've had the most tremendous 15+ years as an Industrial Engineer. I've worked in a lot of progressive organisations such as Lowe's Home Improvement, 3M India, Adidas, Toll Australia, Mars, Coles, Rubbermaid, Target, Unity water, SEQ Water and For Purpose organisation's such as Endeavour Foundation that supports people with an intellectual disability. All this across, USA, South East Asia and now Australia.

It's been an incredible journey to be able to learn and add value by increasing safety awareness, the bottom line, influencing the organisational cultures, embedding new ways of working and my absolute favorite – waste reduction. Whatever/however waste is defined - cost, time, touches, materials, systems etc. And more recently building in Circularity within processes to move from linear ways of thinking to more circular. With this background and my environmental passions, I've forayed into Sustainability and Decarbonisation by building these into current processes/BAU. Any improvements should/will entail reducing emissions by directly feeding into the ESG (Environment, Social, Governance) framework.

It's an exciting and challenging time for us all - COVID highlighted the absolute need for us to relook at our end to end processes and systems i.e. raw material sourcing, manufacture, use and dispose. Our supply chains are crumbling, And we are running out of planet's finite resources, yet population is increasing.

Meeting these new demands and proactively planning for a "healthy" planet keeping in mind human induced" natural" disasters, I believe Industrial Engineers have a unique opportunity to influence and help build robust supply chains and eliminating waste. And I get to do that every single day! Woot!!

Great to see this chapter, look forward to connecting with you all.

Mansi O'Keeffe(MIIEA)

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CHRIS HEYDE AWARD WINNER 2021

**- George JOHN SHERVINGTON FIIEA DipOT(RPH) PGDipAdmin(WAIT)
BAppScOT(WAIT) MAppScOT(USYD) AAOT**

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Introduction by Bob Watson(FIIEA)

Citation: Chris Heyde Fellowship 2021 awarded to George JOHN Shervington on 11th September, 2021

At the Institute's 1998 Federal Council AGM, John was given a commission to re-establish the New South Wales Division. At the time of his resignation from Federal Council in 2021, had John successfully completed the mission with outstanding diplomacy and leadership of the NSW division.

Chris Heyde was the inventor of MODAPTS (MODular Arrangement of Predetermined Time Standards. John in 1970, through the Western Australian Occupational Therapy Association, realised the potential of MODAPTS for his occupational therapy practice. He introduced it into his assessment and treatment at the Melville Rehabilitation Centre establishing time standards for tasks he set up for clients referred to him for to undertake process work.

Clients were assigned to jobs according to their individual abilities, their performance was compared to the above standards within particular activity groups and a percentage of standard within these groups were readily determined. This information was used for client feedback, other therapists and client's doctors. John also used Chris's Workability Assessment with MODAPTS for determining tasks on which to assign his clients. He documented his work and research in a thesis: 'Process work as Occupational Therapy'. Between 1977 and 1984 John lectured at the Western Australian Institute of Technology (WAIT) in Work Study and Occupational Health passing on principles and practice from his clinical experiences. He received two grants to continue researching this area of clinical practice, to bring a former Principal Occupational Therapist and Chris Heyde from New South Wales for a short fellowship at WAIT and to employ a occupational therapist to assist with developing 'Workability Mk11' specifically for occupational therapists. At this time John became a member of the Institute of Industrial Engineers.

Between 1985 and 1989 John was employed by the State Energy Commission of Western Australia to eradicate repetitive strain injury from all its workplaces and employees. During this time he used 'Workability Mk 11' as an assessment tool before assigning employees to more suitable work assignments and eventually back to their former positions. For a short period, he seconded Chris Heyde to WA for advice and collaborative research into the use of 'Workability Mk11', as well as training senior employees in 'MODAPTS'. John was made a Fellow of the IIE in 1988.

In 1989 John was in a position to move to Sydney where he trained local therapists who had purchased 'Workability Mk 111' kits. He finally documented his work and research through a 'Masters in Applied Science' with a thesis Workability Mk111 (1999).

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