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## FROM THE CHAIR . . .

ENGINEERING E2E is keen to lend its support to the newly established ITP Roadmap 2020 project. TEC will take the lead on engaging collaboratively with the ITPs and broader community to discuss the challenges facing the sector and explore and test a range of options for change.

A strong ITP network is necessary to achieve the Government's goals for accessible and affordable vocational education and training throughout New Zealand. It is also required to support regional economic development and help firms access the talent and knowledge they need to thrive.

Through our work we have seen collaborative relationships formed to develop innovative practices in engineering education at ITPs. The work the Institution of Fire Engineers and the Manukau Institute of Technology are doing to upskill 3,500 employees, and Weltec and Otago's degree apprenticeship are two stand-out examples of this.

We have seen innovative practice in engineering departments around the country and we are very pleased to be able to showcase just some of these on our website. The **latest case study** from our Secondary-Tertiary Pathways Projects shares learnings from initiatives currently running in six ITPs.

Engineering is not the only sector requiring more talent within their Level 6 and 7 qualifications, and we hope that the solutions developed through Engineering e2e will have wider application.

Sir Neville Jordan  
Chair, Engineering e2e Steering Group

## Degree apprenticeships phase 2 underway

A pilot degree apprenticeship programme is up and running, and there are many more in the pipeline.

The degree apprenticeship is a work-based degree that is intended to integrate academic learning with on-the-job practical training. The degree is being co-designed by employers and Institutes of technology and polytechnics (ITPs), with employers leading the process with the support and guidance of curriculum developers from the ITP sector.

The pilot has a focus on infrastructure asset management and is being implemented by Weltec and Otago Polytechnic in partnership with the Institute of Public Works Engineering Australasia NZ Division.

Engineering e2e is throwing a great deal of support behind this pilot as we can see huge potential benefit to all involved. Professor Julia Clarke, Manchester Metropolitan University outlined these benefits when she visited New Zealand in February.

ITPs have the opportunity to engage closely with employers to establish a new pathway to attract different types of learners. Once degree apprenticeships are established we hope to see widening participation and social mobility and its impact on local economies and skills shortages. This pilot offers ITPs a platform to innovate, the potential of a diversified income stream and the chance to raise their profile.

Benefits for learners and those already in the workplace are significant. Learners will gain an engineering degree without building up significant debt and at the same will get relevant industry work experience. Apprentices can expect good pay and excellent employability prospects at the end of the apprenticeship. Existing employees boost their progression prospects by developing new skills and gaining qualifications.

A key benefit for employers is the opportunity to attract and develop talent. They can improve motivation and retention by developing current employees. They have the opportunity to influence degree content and delivery to ensure its relevance for the profession. There are also public relations and corporate social responsibility opportunities through publicly supporting to access work.

Phase 3 of our degree apprenticeship initiative will involve the design of the pilot evaluation and roll-out.



## What we've learnt: Developing secondary-tertiary programmes

OUR SECONDARY-TERTIARY PARTNERSHIP PROJECTS (STPPs) have been running for well over a year. In our latest case study we talk with project managers about the challenges of developing programmes for school students and the consequent changes they've made.

The six STPP teams – Otago Polytechnic, Ara, WITT, Wintec, Unitec and NorthTec – are tasked with delivering programmes to prepare and pathway students to enrol in and successfully complete tertiary engineering study.

The teams face similar challenges. These include: building relationships with local schools; attracting sufficient numbers of students; sustaining student interest over long-term courses; and reaching female, Māori and Pasifika students.

Project managers have learned that engaging teachers is vital for the initiatives to be successful. The WITT team met with teachers and careers advisors at the end of 2017 to decide programme content. "A critical thing was to

review the plan together," says Kyle Hall, "looking at what worked well and what didn't."

Teachers involved in Unitec's Year 12 Engineering course gained a better understanding of engineering careers and how what they teach is applied in engineering. Robyn Gandell says the industry visits gave teachers a much better idea of the opportunities in engineering. "Teachers were involved in co-teaching but wanted more opportunities to work with Unitec lecturers and industry."

NorthTec organised industry visits specifically for teachers. "The field trips went really well," says Mirko, "everyone got excited about seeing the skills they teach being used in industry."

Adding NCEA credits to courses, really understanding the needs of local schools and student selection are also covered in this case study.

See: [engineeringe2e.org.nz/casestudy/education/show/83](http://engineeringe2e.org.nz/casestudy/education/show/83)

## Growing the pipeline of work-ready engineers

THE 'MAKING TERTIARY STUDIES IN ENGINEERING MORE RELEVANT' project aims to establish sustainable collaboration between industry and institutions providing NZDE and BEngTech programmes to ensure best practice for graduate engineers.

It also aims to develop a set of criteria to help improve the quality of learning and teaching and consequently outcomes for industry in engineering programmes.

This project builds on earlier work for Engineering e2e:

- **Making Tertiary Studies In Engineering More Relevant** (November 2016)
- **Talking With Employers** (June 2015)
- **Improving Pathways to Engineering Education** (December 2014)

A recent report from Ara Institute of Canterbury examined what tutors view as effective practice in the ITP sector, to understand what factors support such practice.

Ara found many examples of effective teaching and learning practice taking place at ITPs in New Zealand. Industry plays an important role in some of these practices and there are opportunities for collaboration to enhance teaching and learning in ITPs.

The report collates examples of effective practice to be shared with the ITP sector. ITPs can then use this information in their discussions with their industry advisory groups.

In the next stage of this project, findings will be shared with engineering educators.