Submission by


to the

**Ministry of Business, Innovation and Employment**

on the

**Advanced Manufacturing Draft Industry Transformation Plan**

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# NZTECH SUBMISSION ON THE ADVANCED MANUFACTURING DRAFT INDUSTRY TRANSFORMATION PLAN

## Background

1. NZTech is a member funded, not-for-profit, non-governmental organisation. Its twenty tech associations have more than 1600 members, including New Zealand tech exporters, local and multinational IT firms, startups, universities, government agencies, financial service providers and large corporate users of technology which collectively employ more than 100,000 workers or over 10 per cent of New Zealand's the national workforce.

2. Its purpose is to help create a more equitable, sustainable and prosperous New Zealand underpinned by good technology. It does so by helping its members work together to connect the tech ecosystem, promote the importance of technology for New Zealand and New Zealand technology for the world, and help advance the growth of the tech ecosystem and the New Zealand economy.

3. NZTech and its members play an important role in the digitalization of manufacturing processes through activities such as software and application development, the Internet of Things systems capturing manufacturing processes data, cloud access platforms and network management systems.

4. NZTech and its members also play an important role in the emerging technologies of an advanced manufacturing sector such as biotechnological manufacturing and 3D printing.

## Introduction

5. NZTech thanks the Ministry of Business, Innovation and Employment (MBIE) for the opportunity to make a submission on the Advanced Manufacturing Draft Industry Transformation Plan (ITP) and provide feedback on the proposed industry development initiatives.

6. NZTech commends MBIE for the development of the Advanced Manufacturing ITP. It also recognises, endorses, and supports its establishment and considers its priorities are well-thought through overall and valuable.

## General Comments

7. NZTech is concerned with elements of ITP's approach and believes that the ITP must more effectively reinforce the role of digital and other emerging technologies that drive the ongoing transformation of the NZ advanced manufacturing sector. It notes that the ITP is:

    a. Heavily focused on advancing older classes of industries and does not address developments in emerging industries such as biotechnology and genomics, which offer the opportunity to stand alongside existing industries to augment their profitability, as well as stand-alone as economic drivers for future advanced manufacturing in New Zealand;

b. Focused on incremental improvements in investment initiatives across the older industries but does not address investment opportunities represented by emerging and new technology industries;

c. Proposing the establishment of new association groups within the research, science, and innovation (RSI) space that are separate from industry entities already working in the RSI space. NZTech prefers that MBIE collaboratively work with existing groups such as Business New Zealand, Manufacturing New Zealand and NZTech in a single ecosystem rather than creating a raft of new and fragmented singular entities and activities.

d. Requiring the expansion of a high-skilled and high-wage workforce. That means industry and education providers must work together to ensure the supply of those workers. Industrial expansion promises many opportunities arising from expansion of demand for digital skills. To make that work requires integration of those collaborative measures with the existing work of the Digital ITP, NZTech, IT Professionals and the Toi Mai WDC;

e. Aiming to achieve sustainable net-zero emissions advanced manufacturing processes. That requires substantial investments in data, digital and quite possibly bio-technologies. MBIE must acknowledge that the aspirations of a net-zero sustainable advanced manufacturing sector needs recognition of the importance of digital technology and biotechnology developments; and

f. Only recognises global connectivity as adding value for NZ companies from a manufacturing perspective. It does not do so from tech sector perspective, thus ignoring opportunities for tech sector collaboration and the flow-through benefits for sustainable advanced manufacturing outputs.

8. NZTech notes that MBIE did not invite NZTech to the in-person or on-line workshops, and as a result the ITP is only generally reflective of older-generation manufacturing entities and does not reflect the needs of emerging manufacturers such as biotech manufacturing, 3D printing, or more advanced digital practical applications appearing from the confluence of artificial intelligence, blockchain and the Internet of Things.

## ITP Priorities Comments

### Priority 1 – Improving the Understanding and Perceptions of Advanced Manufacturing

9. NZTech supports this initiative as it is critical to achieving industry investment, uptake, and ensuring ongoing Government support. However, as noted above, the advanced manufacturing depicted in the ITP favours older forms of manufacturing. By doing so it limits the recognition and support required by new and emerging technologies.

## Priority 2 - Increasing investment in Advanced Technologies and Processes to Lift Productivity and Wages

10. The ITP increased investment model mainly focuses its attention on incremental investment improvements across New Zealand's traditional manufacturing base. While the ITP does reference Industry 4.0 the primary emphasis is on investment to upgrade New Zealand's existing industrial base rather than increasing investment in companies working with emerging manufacturing technologies. That is where NZTech believes the greatest benefits for New Zealand's development lie.

11. NZTech wants to see greater investment emphasis on initiatives such as the new Trailblazer Grant and the provision of education making companies aware of the benefits of platform-type projects. Examples of such initiatives include bio-remedial manufacturing and shared manufacturing data platforms.

## Priority 3 – Making Innovation, R&D and Science Work for Advanced Manufacturing

12. NZTech supports the ITP's recognition of the importance of research and development to enhance the impact of advanced manufacturing developments on the New Zealand economy.

13. However, NZTech cautions against MBIE establishing new industry-led ecosystem organisations such as the proposed Aotearoa New Zealand Centre for Advanced Manufacturing Excellence and instead work with existing leading industry groups such as Business NZ/ManufacturingNZ and NZTech in a single connected ecosystem. Doing so obviates the fragmenting effects of too many entities performing the same function and frees up public monies for more targeted support of industry-led innovation and research and development initiatives.

## Priority 4 – Attracting and Developing a Diverse High-Skilled High-Wage Workforce

14. NZTech endorses the essential aims and methodologies of the Reform of Vocational Education (RoVE). NZTech wants the reform outcomes to deliver strong collaboration between the education system and advanced manufacturing industries. However, NZTech also wants the initiative to explicitly acknowledge and include the important connections developing between the digital skills development work occurring via the Digital ITP and the work of NZTech, IT Professionals and Toi Mai WDC. Those entities are already collaborating on digital workforce planning, upskilling, earn-to-learn career pathways and attracting greater diversity into the digital workforce.

## Priority 5 - Creating a Leading Sustainable Circular Net-Zero Emissions Sector

15. NZTech supports the development of measures laid out in the ITP to achieve net-zero waste and emissions from the advanced manufacturing sector.

16. It notes that achieving a sustainable net-zero cycle in the sector requires considerable investments in supporting technologies such as data, digital, and other enabling technologies such as biotech disposal or conversion of manufacturing waste and emissions. Key drivers for the adoption of those technologies are the corporate benefits of sustainability for individual companies and the sector,

and rising emission costs resulting from mechanisms such as the Emissions Trading Scheme and rising fuel prices.

### Priority 6 – Enhanced Global Connectivity and Opportunities

17. NZTech supports the ITP's intention to enhance New Zealand's advanced manufacturing sector's global connections. However, the ITP is only framing those connections from a manufacturing-led perspective.

18. NZTech is of the view that developing those connections requires the application of a technology development-led framework. Manufacturing achievements flow from technology development, and it is those that the ITP would gain most from.

19. Making the necessary connections within the global tech ecosystem means establishing, developing and maintaining collaborations between innovators and tech developers working in areas such as sustainability, advanced manufacturing, and AIoT.

## ITP Opportunities and Challenges

20. The ITP signals the Government's intention to the opportunity to support New Zealand's advanced manufacturing sector

*Recommendation*

21. NZTech recommends that each of the six ITP priorities look beyond their focus on traditional manufacturing and more explicitly acknowledge that the future of traditional manufacturing modes are critically dependent on developments in digital ITP, especially in areas such as skills and workforce development.

## Recommendations

22. NZTech recommends MBIE amend the ITP and the Action Plan by:

    a. Acknowledging and supporting emerging and new technology and the manufacturing opportunities it generates such as biotech and genomics;

    b. Ensuring the ITP place greater emphasis on investment in emerging and new technologies;

    c. Not establishing new industry-led ecosystem organisations but rather relying on existing industry entities to assist with the delivery of the ITP's objectives;

    d. Ensuring that the development of digital skills for the Advanced Manufacturing sector's are integrated and aligned with the work already underway on developing digital skills through the Digital ITP;

    e. Reinforcing the application of digital and technology transformations across the sector to achieve net-zero sustainability;

f. Including a technology development-led framework as well as a manufacturing-led framework.

g. Ensuring that the ITP acknowledge that advanced manufacturing is critically dependent on digital IT development and ensure the implementation of the plan recognises that reality.

## Conclusion

23. In summary, NZTech considers that the ITP priorities are well thought through and valuable but limited by their focus on New Zealand's traditional industries and the emphasis on manufacturing rather than technology development.

24. NZTech thanks the Ministry for the opportunity to comment on the ITP and the Action Plan and looks forward to the opportunity to further engage MBIE to discuss this submission further and provide any additional inputs to needed to assist the ITP and the Action Plan achieve their objectives.

25. NZTech would be happy to further discuss this submission and supply further assistance to expand the ITP to better support the ITP development. If you have any further queries do not hesitate to contact me.

Yours sincerely

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