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Staff Challenges and Capacitation

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MTC

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Building workforce capability in advanced manufacturing

- There is a growing demand for advanced manufacturing skills
- Technology is evolving faster than workforce capability (think lasers, AM , AI)
- Some skills are retiring out of the workforce (skilled welders) which drives technology changes as well as training

Q: What is your biggest workforce challenge today?

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Industry Challenge

Challenge 1: Finding People	• Ageing Workforce • Retirement of experienced engineers • Limited talent pipeline in AM areas
Challenge 2: Developing new skills fast enough	• Technology evolves quicker than traditional training cycles • Need for multi-disciplinary skillsets
Challenge 3: Retaining Expertise	• Experienced engineers can be mobile • Training organisations compete with industry salaries

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The hidden challenge - training capacity

Specialist training availability	• Subject matter experts committed to projects • Difficulty releasing experts to teach
Trainer Retention	• Expert trainers are attractive to industry • Risk of losing capability after upskilling
Keeping content current	• Technologies evolve rapidly • Significant effort to continuously update content

MTC Example

A laser processing expert may simultaneously be delivering customer projects, supporting research, developing new technology AND expected to train others

It takes time and money to update training material. Recent project cost 1 FTE 6 months to update 1 AM course

Training capacity is often the bottleneck, not learner demand

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Innovative capacity solutions

Q: If demand doubled next year, how would you increase capacity without doubling the number of trainers?

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Innovative capacity solutions

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AI-Assisted Learning

- Digital coaches.
- Personal learning pathways.
- Automated assessment.

Shared Specialist Resources

- Cross-CoVE faculty model.

Simulation & XR

- Fewer physical resources required.
- Greater scalability.

Industry Experts as Associate Trainers

- Certified practitioner network.
- Flexible delivery model.

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Scaling through the CoVE Network

Shared specialist pool	Shared curriculum development	Train the trainer models	Digital learning	Industry Secondments
• Experts available across multiple centres • Reduced duplication	• One development effort • Many delivery locations	• Multiply capacity • Local delivery with central expertise	• Remote classes • Recorded content	• Engineers rotating between industry, research and tech providers

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How do we retain & upskill trainers and specialist engineers?

Q: How do trainers keep up to date on content and knowledge? How do we keep these engineers in field?

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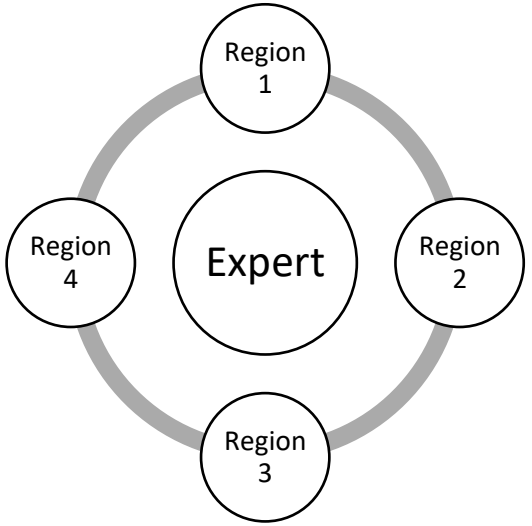
Career Pathways	Hybrid Roles	Communities of practice	Recognition
• Clear progression routes • Professional recognition	• 50% tech delivery • 50% training and capability building	• Access to leading edge projects • Cross network collaboration	• Industry visibility and thought leadership models



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Trainer upskilling - MTC Example

Good practice

For short courses MTC uses engineers as trainers which ensures they are up to date

By using engineers and not specialist trainers there is a risk to delivery format

This is mitigated by central training team reviewing slides

Challenges

Good practice

For apprentice training experience trainers are used. Have regular courses to ensure upskilled, and use guest speakers from engineering teams

Retention of specialist trainers is difficult

Can mean material is more out-dated than it could be

Requires effort to maintain knowledge

Challenges

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Summary

The future workforce challenge is not only developing skills, but developing the people who develop those skills.

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