CONNECTED COMPETENCE

Value Stream Mapping Analysis

Final report

December 2022

HARLOW CONSULTING

DEVELOP CONSULTING

Executive Summary

Connected Competence is a framework of skills and knowledge tests and assessments which standardises the assurance of technical competence of the contracting workforce across the offshore sector. Based on National Occupational Standards (NOS) the framework has been designed, developed and approved collaboratively between the major service companies. Connected Competence is supported and enabled by the Engineering Construction Training Board (ECITB).

Value Stream Mapping – Key Messages

Value Stream Mapping research, undertaken independently by Harlow Consulting and Develop Consulting in 2022 has found:

1. Connected Competence underpins the deployment of a safer, more resilient workforce to help meet the current and future workforce needs, providing competence assurance of the common skills that are needed across the energy sector.
2. A shared base standard of on-going technical competence is now recognised within craft and technician trades across employers. Fundamentally, this means an individual's competence moves with them from employer to employer.
3. Impacts are already being experienced, notably in the form of reduced costs associated with mobilisation, waste reduction and faster mobilisations. Further anticipated impacts including productivity gains and increased efficiency, are expected to be realised within the next 6 months and sustained over the longer-term.
4. If the Connected Competence model is adopted more widely, it will create a shared pool of workers, assured against the same common standards, recognisable through their digital certifications, reducing duplicated costs, waste, and lost time incidents, while increasing site productivity.
5. Long-term sustainability underpinned by the wider adoption of Connected Competence is dependent on industry-wide collaboration to realise the full benefits. An Industry Charter would play a critical role in helping to achieve this.

ECITB Response to the Research

> "I am grateful to Harlow Consulting for this cost benefit analysis. The case for a collaborative and standardised approach to competence assurance is compelling. The industry invests heavily in the skills and knowledge of its workforce, and it must be able to verify the attainment and retention of those skills and knowledge in a standardised way to reduce the need for duplication of testing and assessments to speed up mobilisation and reduce costs. Connected Competence provides such a framework and this cost benefit analysis report demonstrates that full implementation of this scheme will provide significant benefit to contractors, operators and individuals."
>
> Andy Brown
> Director of Operations, ECITB

Introduction

Supported and enabled by the Engineering Construction Industry Training Board (ECITB)[1], Connected Competence is a framework spanning the engineering construction industry, based on National Occupational Standards (NOS) which provides a base level of on-going technical competence, designed, and approved collaboratively between the major service companies.

> "Our vision is to promote a base technical standard of competence for the workforce employed by the member companies. The workforce will achieve and sustain a level of competence that is not only transferable but will also help to attract new entrants to our sector."

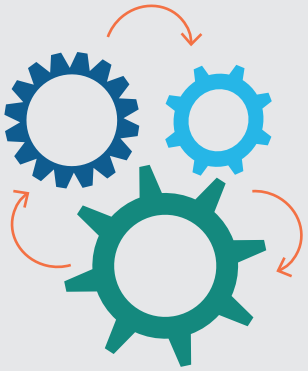
An industry-led initiative, Connected Competence has been developed in close collaboration with eight organisations across the engineering construction sectors:

Harlow Consulting and Develop Consulting were commissioned by ECITB to undertake an independent value stream mapping of Connected Competence (CC), with the following research objectives:

- Establish the Industry's 'as-was' before the Connected Competence base standard
- Compare the 'as-was' with the 'current state' Connected Competence via testing centres and / or hybrid approach with site-based assessment
- Develop a Cost / Benefit Analysis highlighting the difference between the future CC model and current 'as-is'
- Undertake an impact analysis for key stakeholders:
  - » Contractors
  - » Clients
  - » Training providers
  - » Workers
  - » ECITB and wider stakeholders

Methodology

The approach undertaken to deliver this research is summarised below:



Scoping and discovery

- Project inception
- Desk-based research
- Design of fieldwork tools
- Workshop with ECITB
- Depth interviews with members of the ECITB and Connected Competence delivery team

Fieldwork

- Survey of the contractor organisations
- Depth interviews with selected contractor organisations, clients, training providers, workers and other industry stakeholders
- In-person workshops with six contractors

Analysis & reporting

- Quantitative and qualitative data analysis
- Synthesis of evidence
- Draft and final reports

The findings in this report are based on the evidence drawn from the survey and depth interviews across industry

Research team

This research has been undertaken by an integrated project team, combining relevant skills and expertise developed over many years, across multiple industry sectors.

harlowconsulting.co.uk

Harlow Consulting specialises in qualitative & quantitative research and evaluation across many industry sectors, specialising in construction, healthcare, and education. The team bring many years' wide-ranging experience in skills and education research, including developing competency frameworks, National Occupational Standards (NOS), apprenticeship frameworks, skills strategies, and Labour Market Intelligence (LMI).

develop-consulting.co.uk

Develop Consulting has more than 15 years' experience delivering similar projects in the UK and internationally. Develop Consulting's proven team of senior consultants is highly experienced in implementing change in manufacturing. The consulting team have worked with some of the biggest and most complex manufacturing organisations around the world, to improve operational performance, efficiency, and capability across many different sectors.

1 The Engineering Construction Industry Training Board (ECITB) invests c. £28m per annum in support of the industry to ensure the engineering construction workforce possesses relevant and sufficient skills, knowledge, and qualifications.

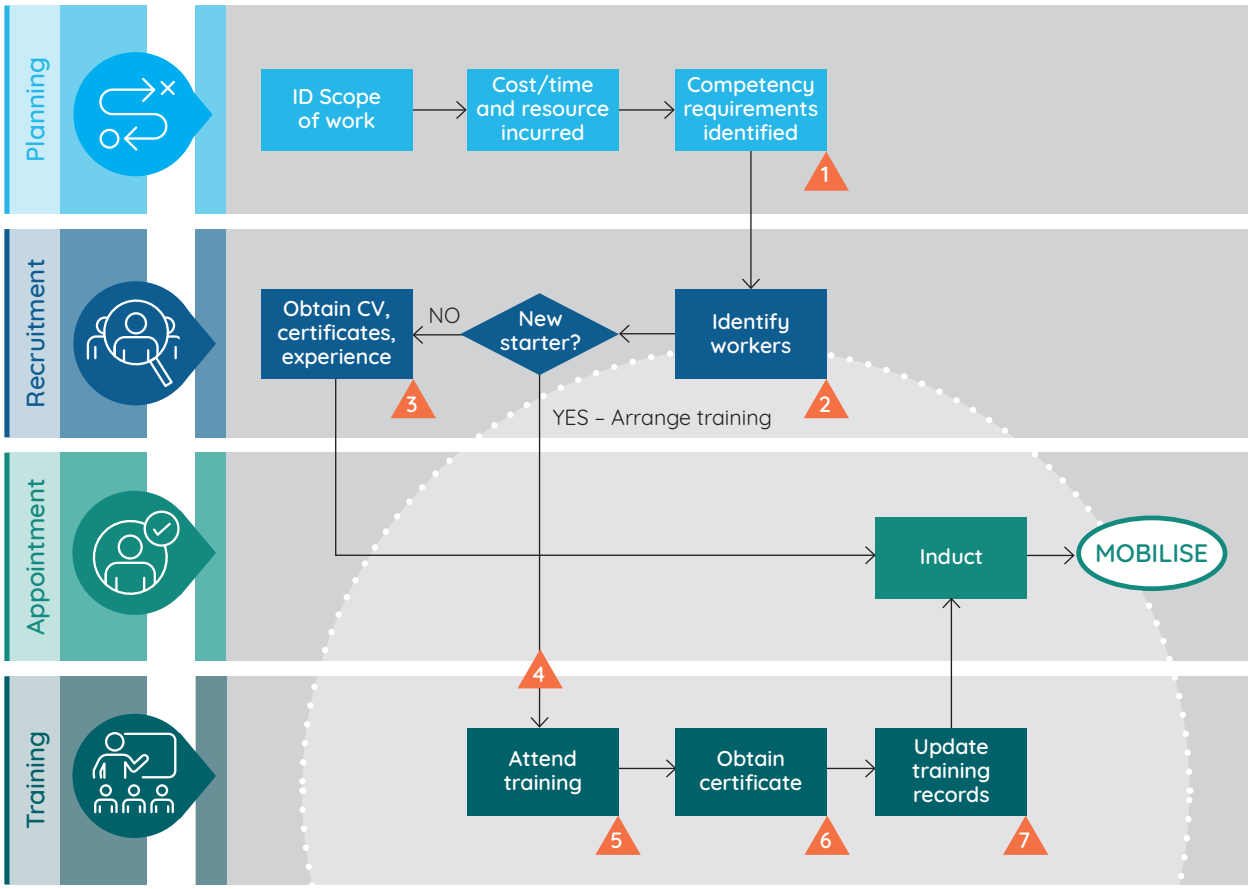
The previous state –
pre-Connected Competence

Before Connected Competence was introduced – i.e., what we are describing as the 'as was' state – the oil & gas industry was subject to the risk of lower quality outputs, low productivity, inconsistent and repetitive training, and high TUPE costs. There was not a commonly recognised method across organisations for assuring on-going technical competence, benchmarked against national industry standards. The full extent of costs to provide skilled workers was largely hidden, or visible through lower standards of safety, quality and productivity.

The 'as was' process clearly shows **significant waste and duplication:**

- Duplication of training to satisfy each organisation's internal competency requirements incurring significant costs. In one example, a service organisation retrained 286 workers during an up-man for a turnaround project rather than source existing certificates, this retraining added c.£250k of direct cost
- Impacts of underperformance arising from lack of competence are typically wide-ranging, with delays incurred and risk of reputational damage being particular issues. One example of an improvement notice issued (linked to competency problems) incurred estimated costs of £120k over a 6-7 month period
- Lack of standardisation of competency requirements which led to over specification of skills and a confused landscape
- No external visibility of competence; certification or acknowledgement of completion of internal training held by the employer, not the worker and such information relating to training records and history was not shared
- Without a readily accessible means of demonstrating competence, workers could be mobilised after interviews with a technical authority to establish competency, incurring additional time and cost, and delaying mobilisation
- In some cases, the 'planning' element of the process to mobilisation could be compressed, meaning that while workers were mobilised quickly, either they were mobilised without checks on the strength of their CV, or not all of the checks to assure competence were fully implemented – creating risks to safety and performance

As was Diagram of process – wastes identified



These issues have an impact on process performance

1. Lack of standardisation and over specification from clients, creating additional costs
2. No external visibility
3. Access to previous employer certificates
4. Duplication of training
5. Lack of standardisation
6. Certificates held by employer
7. No external visibility

The current state –
Connected Competence in the process of implementation

It is important to note that **Connected Competence (CC) is still in the process of being implemented fully. For this reason, not all the anticipated benefits have been fully realised as yet.**

Initially, the programme only allowed for tests to be undertaken at onshore testing centres. **Site-based assessment (SBA)** was subsequently introduced enabling workers to assure competence through naturally occurring work scopes at site.

Achievements to date, including a Code of Practice, have been underpinned by significant collaborative efforts of competing contractors to support an industry-wide model, recognising the need to progress away from the 'as was' state towards a common standard.

Testing centre availability and capacity can be challenged by the need for industry to rapidly mobilise required workers, sometimes with less than 24 hours' notice. Until client organisations enforce CC on their sites, existing workforce culture may avoid proactive competence assurance and higher levels of deviations are being seen as a result in order to meet the project requirements.

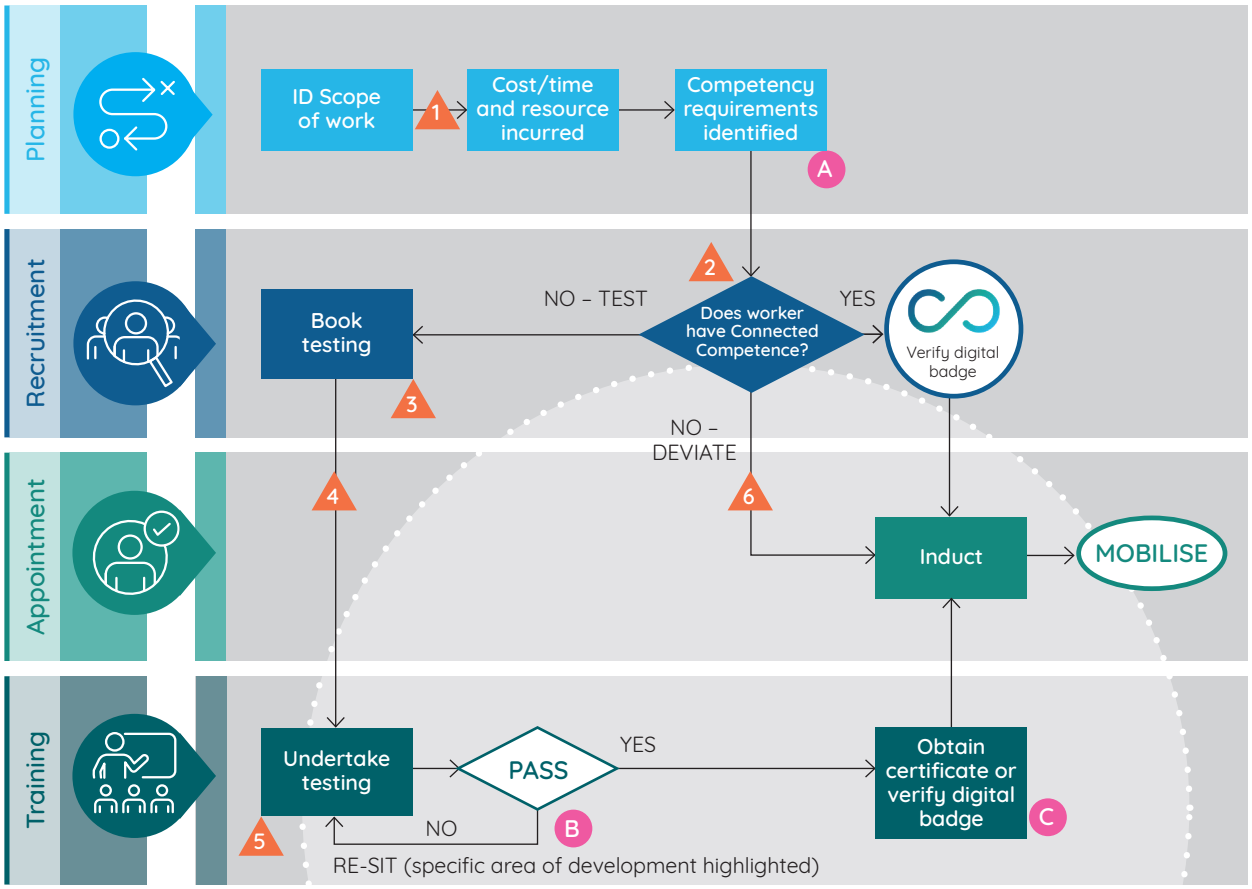
Costs are associated with implementing an industry-wide scheme but this is partly because industry did not always acknowledge costs of checking the currency of technical competence.

As with the introduction of most new programmes, there have been challenges associated with the implementation of Connected Competence. Evidence from contractors has been shared with ECITB in a separate annex.

Site Based Assessment (SBA) is subsequently being introduced which will enable workers to further assist the rate of deployment and reduce testing costs for employers. A number of employers view widespread implementation of SBA as a critical enabler to further adopt CC and remove costs.

The lack of an industry mandate means workers, particularly transient workers, can sometimes evade testing requirements undertaking employment with non-CC contractors. **This illustrates the critical role that needs to be played via the introduction of an industry mandate.**

As is Diagram of process – wastes identified



These issues have an impact on process performance

1. Short lead times and/or lack of planning
2. Not mandated
3. Transient workers can avoid testing
4. Testing costs and associated expenses
5. Testing not always accessed as quickly as would like
6. High levels of deviation

Key information points

- A For relevant site-based trades
- B Pass rates average 85%
- C Digital badge – competence verification easily accessed online

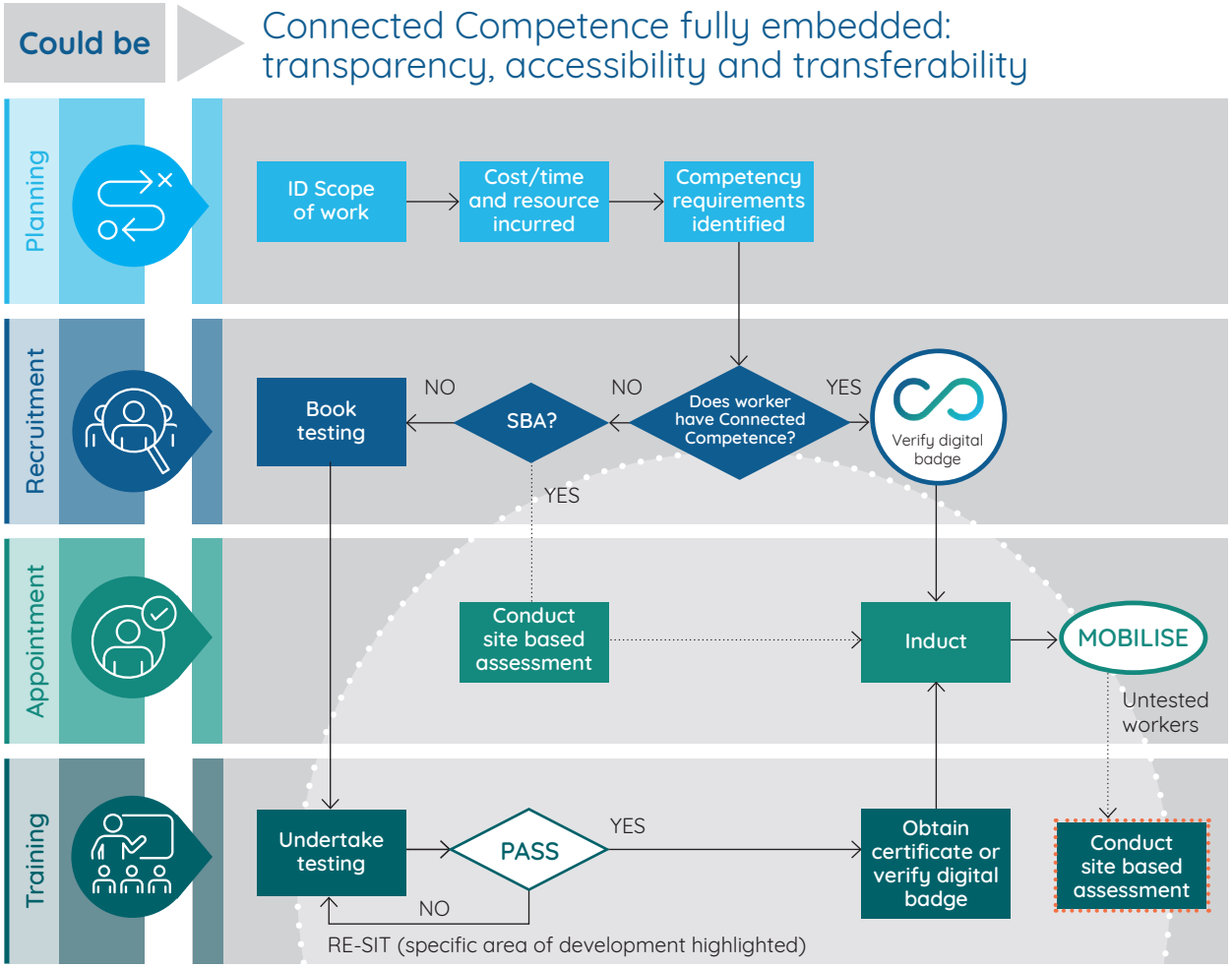
The future state –
Connected Competence when fully embedded and widely adopted

Connected Competence needs to achieve a certain volume of scale in order to fully embed the programme in the oil & gas sector and ensure its successful adoption by all stakeholders. The industry is working towards that tipping point via a mix of SBA for some, test centres for others, building up the digital badge count and familiarity with the programme over time. As it is being implemented, Connected Competence has the potential to realise the benefits described in the following pages of this report.

There are a number of key enablers to ensure programme aims are fully realised and the future state is achieved:

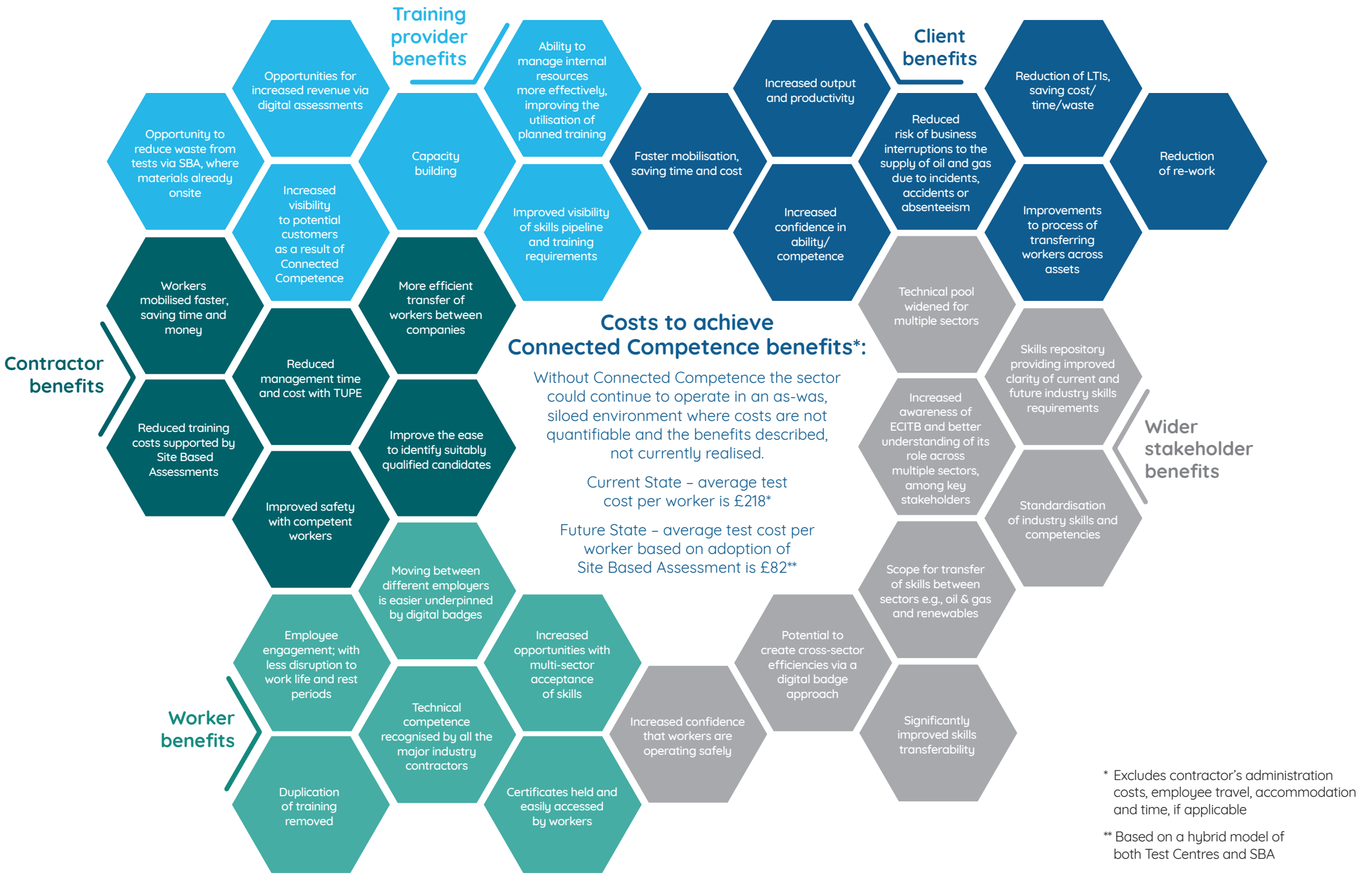
- **Site Based Assessment (SBA)**
  Support the continued rollout of SBA enabling its wider adoption. SBA is a key enabler to achieving faster mobilisation via Connected Competence, as the base standard is captured through naturally occurring work scopes.

  Untested workers already mobilised can subsequently undertake SBA, over time building the pool of workers who are demonstrating the required standard.
- **A mandate for Connected Competence**
  Ensure an endorsement from industry is in place to adopt Connected Competence across clients, employers and workers as the preferred industry base standard for technical competence assurance.
- **On-going commitment & clear communications**
  On-going commitment to the programme by Industry Associations, Government, contractor senior leadership and stakeholders, underpinned by a clear communications strategy to promote the perceived benefits.
- **Digital badges**
  Providing employees with skills recognition. Sharing and maintaining digital badge records to mobilise workers faster, thus reducing costs and improving skills transferability.



Cost benefit analysis – Connected Competence

This illustrates the potential benefits of Connected Competence if fully embedded.



* Excludes contractor's administration costs, employee travel, accommodation and time, if applicable

** Based on a hybrid model of both Test Centres and SBA

Impacts

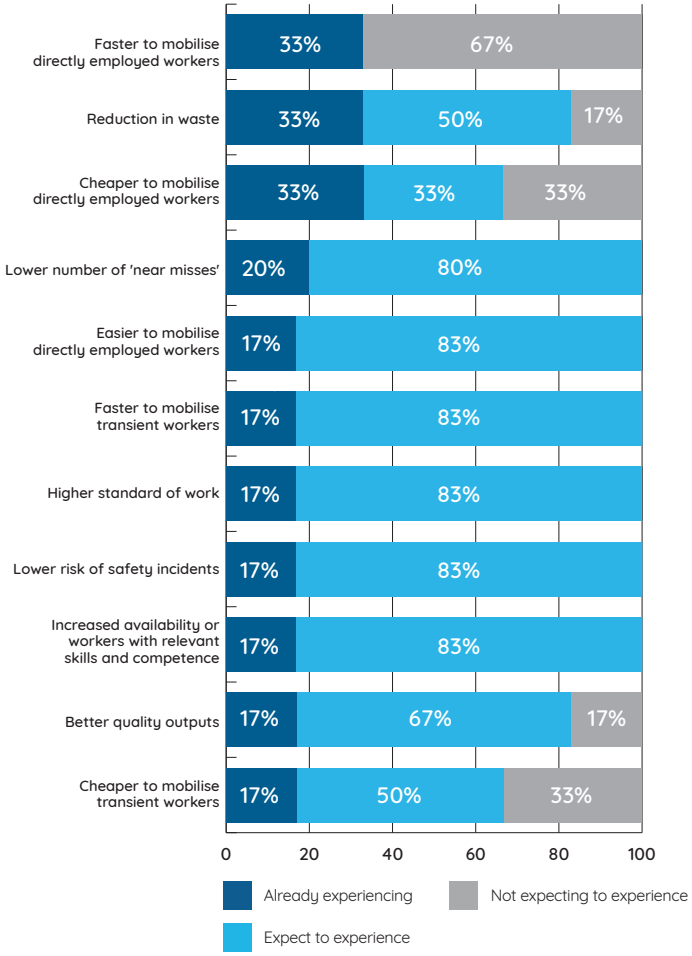
Graphs summarise survey data analysed (sample of seven contractor organisations involved with Connected Competence).

A significant advantage Connected Competence helps to create is the ease of transferring workers' skills with significant costs savings in management time, training costs and expenses. Data provided from a sample of contractors relating to three TUPE events indicates **complete coverage of Connected Competence would have helped to avoid in excess of £800k in TUPE costs.**

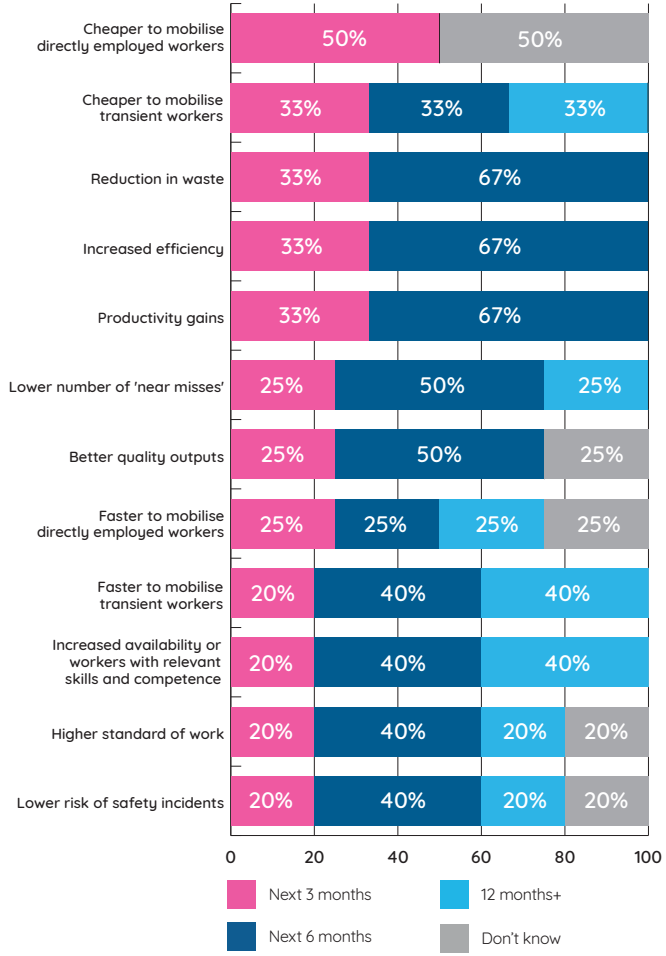
There is an expectation of reduction of waste, increased efficiency and productivity gains within the next six months. A third (33%) of contractors state they expect such benefits to be realised in industry in the next three months.

The overriding view among contractors surveyed is that **impacts will be sustained in the long term i.e., for three years and beyond.** Two thirds (67%) of contractors expect reduction in waste, increased efficiency and productivity gains as a result of Connected Competence to be sustained in the long term.

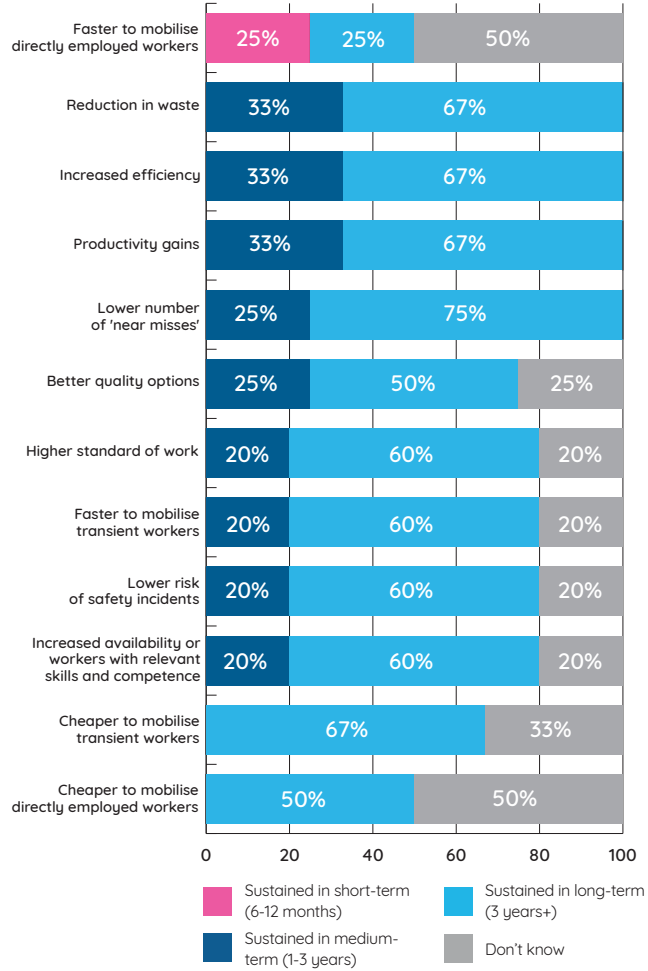
Impacts as a result of Connected Competence



Approximately when do you expect impacts of Connected Competence to be realised?



Expectation that impacts of Connected Competence will be sustained over time



Note: Survey data indicates benefits will be sustained in the short, medium and longer-term, with tests refreshed every 3-4 years i.e., benefits expected to continue to be sustained.

Standardisation

Competence assurance

There is strong support for the overall concept of Connected Competence in standardising and assuring on-going technical skills. It clearly fulfils a need and is seen to offer significant benefits. Recognising common skills transferability could significantly mitigate the challenges of increased competition for skills in the future between sectors in the engineering construction industry and the wider economy.

Cost effective

A hybrid model, incorporating Site Based Assessment (SBA) with technical training via test centres, has the potential to save significant costs in the on-going implementation of Connected Competence.

Implementation

A collaborative approach between typically competitive contractors has been integral to standardise, align and assure a safe, skilled and productive workforce. There have been challenges in fully implementing an industry-wide framework which has, in part, constrained contractors from fully implementing Connected Competence and therefore from fully realising the benefits. However with implementation, underpinned by an industry mandate, contractors anticipate benefits can and will be implemented in the future.

Effective delivery

Connected Competence has the potential to save money, time, and waste; this is contingent on deploying the future state.

Stakeholder benefits

Increased engagement and contributions from both Government and Industry Associations is likely to underpin long-term sustainability of Connected Competence and the programme's expected benefits.