The Economics of Registration Schemes

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Executive Summary

STEM technicians are skilled professionals that work across a wide variety of industries, using their technical skills in practical and innovative ways to solve real life problems. There is evidence of shortages within the STEM professions. The Royal Academy of Engineering (RAEng) forecast that the UK would need 70,000 extra STEM technicians in the period 2012-2020, and a further 50,000 STEM technicians would be needed to replace retiring technicians every year.

Despite their importance in the workplace, studies show that many STEM technicians feel that they are not valued highly and are not receiving the recognition warranted by the skilled work they conduct. STEM technicians are perceived as having relatively low status both within and outside their industries.

Registration schemes are a potential way in which to alleviate STEM technician shortages and to provide further recognition to those that have pursued STEM qualifications.

There are currently 3 STEM technician level registration schemes:

- EngTech
- RSciTech, and
- ICTTech.

These are schemes that require an assessment of competencies in order to join. And, they are administered by the Engineering Council and the Science Council who license professional bodies to conduct the assessments of the competencies.

By providing a consistent standard across a wide variety of industries within the STEM industries, registration schemes may be able to provide employers with a clear signal of competence. Today, employers say that they are faced with many types of qualifications and apprenticeships and are confused by the complexity in the current standards.

This study considers whether part of the benefits of registration schemes is that they can lead to an improvement of uptake in STEM related skills and a more efficient matching of skilled STEM technicians to STEM jobs.

The Economics of Registration Schemes

- Registration schemes can act as a signal from employees to employers demonstrating that they have achieved specific skills thresholds; this can result in more efficient matching between STEM technicians and job roles.
  - Registration schemes can incentivise those that are capable of doing so to invest time in training in order to achieve the skills required.

- The registration schemes can increase the productivity of the workforce by attracting talented people into the industry and also by up-skilling the existing workforce.

- The high standards and the way in which the registration schemes provide a consistent measure of competency across a disparate array of industries would help increase the status of STEM professions.

- In order to be successful, the schemes must be able to distinguish amongst potential employees to identify those that have skills and abilities that will enable them to perform more challenging tasks. They must have entry requirements that are robust and test skills that are difficult to obtain. If the entry requirements were set at a level that were easily attained, then the schemes would not be able to differentiate the most talented employees.

- It follows that registration schemes can lead to upskilling and a better matching between STEM technician jobs and employees. A critical factor in the success of a scheme is that its membership will need to be restricted at some point. This is because it is important that employers can be confident that members of the scheme are distinguishable as being of a high standard and having the full set of competencies.

- On the other hand there are drivers that indicate that membership growth can be efficient. The fixed costs of operating registration schemes are likely to be large relative to costs that vary with the number of registrants. Under these conditions, as the schemes grow in size, the fixed costs can be spread across a wider base and therefore result in lower average costs.

- Hence it follows that registration schemes need to carry out a critical balancing act. On the one hand, they need to be reasonably restrictive in their membership in order for the schemes to be credible and therefore beneficial to employers and employees. On the other hand the schemes need to be of significant size in order to be able to generate the cost advantages that are derived from the economies of scale

- The benefits of the schemes are likely to rise as the number of participants increases and the schemes get wide spread recognition. However the costs are likely to decrease as the schemes grow. Given this, it is likely that if they are to become successful, a critical 'tipping point' would have to be reached in order to gain widespread appeal.

1 Introduction

Science, technology, engineering and mathematics (STEM) technicians are skilled professionals who work across a wide variety of industries. They use technical skills in practical and innovative ways to solve real life problems in the work place. They are prevalent across the whole economy and are a vital engine for economic growth.

Despite their importance in the workplace, studies have shown that many STEM technicians feel that they are not valued highly and are not receiving the recognition warranted by the skilled work they conduct. In other words, STEM technicians are perceived as having relatively low status both within and outside their industries.

One of the reasons put forward for this is due to the broadness of the term, 'STEM technician'. This term encompasses a multitude of professions and job titles that span the breadth of the UK economy across different pay grades. Having such a disparate set of job roles brought within one grouping runs the risk of it becoming a 'catch all' for roles that conflate differing skill levels. This could have the effect of introducing ambiguity and generality to the term and therefore reduce the recognition and status attributed to it.

Furthermore, a number of studies have found a shortage in STEM technicians that is likely to persist in the medium to long term. The lack of recognition and status has played at least some part in deterring capable prospective entrants from joining the STEM technician workforce.

Registration schemes provide a way for technicians to demonstrate to their colleagues and employers that they have met a set of standards. In the STEM context, the registers are held by the Engineering Council and the Science Council. These two councils have licensed professional institutions to assess whether candidates have met the requirements to join. There are 3 registration schemes that are aimed at the technician level:

- Engineering Technician (EngTech)- Engineering Council
- ICT Technician (ICTTech)- Engineering Council
- Registered Science Technician (RSciTech)- Science Council

For the purposes of this report, we will be primarily concerned with EngTech and RSciTech.

Registration schemes identify those that have registered as having achieved a certain skills threshold and have demonstrated a commitment to Continuous Professional Development (CPD).

Despite the numerous benefits that registration schemes offer, the current take up has been relatively low at the technician level. The aim of this report is to analyse the economics behind registration schemes in order to investigate the potential reasons for this lacklustre take up and to explore policy measures that may address this.

1.1 Outline of the Report

The rest of the report will proceed as follows. First we will describe the UK context in which STEM technicians operate (Chapter 2).We will then investigate the economics that drive registration schemes and how the analysis can be applied within the STEM context (Chapter 3). We then analyse the barriers that are restricting the growth of these schemes (Chapter 4). We conclude in chapter 5.

2 Background

This section describes registration schemes in the UK context. We first explore the nature of the shortage of STEM technicians in the UK and then investigate the features of the registration schemes that are relevant to STEM technicians.

2.1 Shortage of STEM technicians

2.1.1 Defining STEM technicians

STEM technicians operate in a broad range of industries across a variety of occupations that span various skill grades. The breadth of job roles that this term covers offers challenges in creating a concise definition of STEM technicians. Nonetheless there are common competencies across those that operate as technicians that cover both technical and interpersonal skills. In general STEM technicians are those that use techniques derived from science, technology, engineering, and mathematics in order to solve practical problems in the workplace.

Mason (2012)[1], using data based on Labour Force Survey data and estimated that there are currently just over 1.5million SET technicians in the UK. Though a significant majority of those that were employed as SET technicians worked within the production economy, the array of industries that these covered was substantial. The following table (**Table 1. SET technicians in employment, UK 2010 (weighted population estimates)** reproduces Mason's estimates of SET technicians split by occupation.

[1] Mason, G "Science, Engineering and Technology Technicians in the UK Economy", 2012

Table 1. SET technicians in employment, UK 2010 (weighted population estimates)

SOC 2000 code	Occupation	Estimated Total Employment	% of total
	Associate Professional		
3111	Laboratory technicians	58000	3.7
3112	Electrical and electronic technicians	25000	1.6
3113	Engineering technicians	68500	4.4
3114	Building and Civil engineering technicians	27000	1.7
3115	Quality assurance technicians	16500	1.1
3119	Science and engineering technicians	36000	2.3
3121	Architectural technologists and town planning technicians	16500	1.1
3122	Draughtspersons	38500	2.4
3123	Building Inspectors	4500	0.3
3131	IT operations technicians	120000	7.6
3132	IT user support technicians	70500	4.4
	Skilled Trades		
5211	Smiths and forge workers	5000	3.2
5212	Moulders, core makers, die casters	2500	0.2
5213	Sheet metal workers	27000	1.7
5214	Metal plate workers, shipwrights, riveters	8000	0.5
5215	Welding trades	69000	4.4
5216	Pipe Fitters	14500	1.0
5221	Metal machining setters and setter-operators	54500	3.5
5222	Tool makers, tool fitters and markers-out	15000	1.0
5223	Metal working production and maintenance fitters	197500	12.5
5224	Precision instrument makers and repairers	24000	1.5
5241	Electricians, electrical fitters	260000	16.5
5242	Telecommunications engineers	49000	3.1
5243	Lines repairers and cable jointers	95000	0.6
5245	Computer engineers, installation and maintenance	42500	2.7
5249	Electrical and electronic engineers	83000	5.3
5314	Plumbers, heating and ventilating engineers	189500	12.0
	Total	**15131500**	

Source: Mason (2012)

The above table shows the wide array of industries that fall under the banner of 'technician'. The multitude of job roles that fall under the single definition shows that it can be challenging to develop a set of characteristics that are common across all these job roles and industries.

2.1.2 The UK context

As the UK has a much smaller manufacturing base relative to Europe[2], it is natural that the UK has fewer STEM technicians relative to other countries where manufacturing plays a more prominent role in the economy. Nonetheless, it is interesting to compare the level of STEM technician employment within the UK to that of continental Europe.

According to a study that compared the characteristics of STEM technicians relative to the rest of Europe conducted by the Institute of Employment Studies in 2010[3], the UK consistently had a lower than EU average of technicians across a range of technician groups. For example, in the UK approximately 1.1% of the workforce was considered physical and engineering technicians, whereas the EU average was approximately 2.4%, and in Germany (where there is a strong manufacturing base) it was approximately 3%. Similarly, the UK ranked below the EU average for the number of computer associate technicians, optical and electronic equipment operators, safety and quality inspectors, life science technicians, and health associate professions. There have been numerous studies that allude to shortages of STEM technicians in the UK. For example, a report by BIS (2009)[4] stated,

> "Evidence from employers shows that there are specific recruitment difficulties in some STEM-related sectors in so far as employers report insufficient UK candidates in particular areas of the biosciences, engineering and IT of the quality they are seeking."

Forecasting the demand and supply of STEM technicians pose difficulties due to the lack of uniformity in how they are defined and it is challenging to categorise the available data appropriately. However there is broad consensus amongst researchers that there does indeed exist a shortage of STEM technicians.

A RAEng report (2012)[5] noted that though there were different sectors within the STEM professions that were likely to experience declines and expansions by 2020,

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[2] According to the World Bank, in 2010, the UK economy consisted of less than 1% agriculture, 11% manufacturing, 11% other industries and 78% services.(World Development Indicators 2012, World Bank)

[3] Jagger, N, Sigala M, Sumption, F, "SET based technicians: Lessons from the UK and European Labour Force Surveys", 2010, *Institute of Employment Studies*

[4] BIS, "The demand for Science, Technology, Engineering, and Mathematics (STEM) skills", January 2009

[5] Harrison, M, "Jobs and Growth: the importance of engineering skills to the UK economy", September2012, Royal Academy of Engineering econometrics and engineering skills project.

when taking into account the need to replace retiring technicians all sectors were likely to need significantly more technicians in the future.

They forecast that the UK would need 70,000 extra STEM technicians in the period 2012-2020, and a further 50,000 STEM technicians would be needed to replace retiring technicians every year.

The report concludes that,

> "Surveys of the supply of STEM qualified people through the UK education and training systems when compared with models of demand suggest that demand for STEM skills will exceed supply into the foreseeable future."

Like much of the rest of Europe, the STEM technician workforce in the UK is aging rapidly. The Institute for Employment Studies[6] analysis of European Labour Force Surveys found that approximately a quarter of technicians were aged 50-65 in the UK. The average age of the STEM workforce in the UK was approximately 40 across most of the technician groups[7].

The UK Commission of Employment and Skills (UKCES) report (2011)[8] provides a review of the implications of changes in the economics and social factors in the economy for the UK labour market. Using projections from this report, Spilsbury and Garrett[9] note that demand for skilled trade technicians (those that tend to be qualified to NVQ Level 2 and 3) will be about 893,000 by 2017.

The difference in the forecasts with the RAEng report is likely to be due to the fact that the Working Futures projections were taken before the recession (and have therefore overestimated demand) and because of the differences in the categorisations that have been used (Spilsbury and Garret include NVQ level 2 and 3 in their definition, whereas the RAEng report does not include level 2 in their forecasts). Despite the current low manufacturing base in the UK, there are new industries that are developing that are likely to require increasing number of STEM technicians. Spilsbury and Garrett use analysis from the National Skills Audit for England (2010), and note that there are four ways in which demand for technicians is likely to be driven upwards as new industries develop:

- Increasing use of advanced production processes combined with a decline in traditional manufacturing will result in more skilled technicians required in these industries.

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[6] See footnote 3

[7] These groups were: physical and engineering science technicians, computer associate professionals, optical and electrical equipment operators, ship and aircraft controllers and technicians, safety and quality inspectors, life science technicians, and health associate professionals (except nursing)

[8] UKCES, "Working Futures 2007-2017: Technical Report", December 2008

[9] Spilsbury, M, and Garrett, R, "The future demand for technicians and underlying STEM skills", Technical Education for the 21st Century, December 2010.

- Global value chains will place a greater emphasis on product development and innovation, which will require higher skill levels.
- The increasing need to deliver high quality services in a cost effective manner.
- Growth in new sectors which require a higher proportion of technicians. These include sectors such as the low carbon economy, advanced manufacturing, engineering construction, financial services, pharmaceutical and life sciences, and the digital economy.

2.2 Registration Schemes

Registration schemes can potentially help increase the status and recognition of STEM technician and attract more people into the industries. They could also improve skills matching as employers are better able to match jobs at the appropriate skills level through the schemes. There are three main registration schemes for engineering and science technicians. Within engineering, there are Engineering Technicians (EngTech), Incorporated Technicians (IEng), and Chartered Engineers (CEng). For science technicians there are Registered Science Technician (RSciTech), Registered Scientists (RSci) and Chartered Scientists (CSci). RSci Tech and RSci are relatively new having only been introduced in 2012.

For the purposes of this report we will be focussing on the technician level registration schemes (EngTech, ICTTech, and RSciTech).

These registration schemes are operated by the Engineering Council (for EngTech) and the Science Council (for RSciTech). The respective councils license individual professional institutions to assess whether candidates have met the competencies criteria and demonstrated a commitment to CPD. If the applicant is successful in their assessment, they will be placed on register after paying a fee.

Applicants must be a member of a professional institution in order to join the registration scheme. Therefore applicants must pay a fee to join the registration scheme on top of the fee to join the professional institution. There are currently 36 institutions that have been licensed by the Engineering Council (with 34 licensed to assess EngTech registrants) and 8 institutions that have been licensed by the Science Council. The following table (**Table 2**) gives a list of examples of institutions that have been licensed by each council.

Table 2. Professional Institutions licensed by the Engineering Council and Science Council

Scheme	Professional Institution	Field of operation
Eng Tech	Chartered Institution of Building Services Engineers	Building Services Engineering
Eng Tech	Chartered Institution of Highways and Transportation	Transport
Eng Tech	Chartered Institution of Plumbing and Heating Engineering	Plumbing and Heating
Eng Tech	Energy Institute	Energy
Eng Tech, RSci Tech	Institution of Chemical Engineers	Chemical Engineering
Eng Tech	Royal Institution of Naval Architects	Ship Building
Eng Tech	Nuclear Institute	Nuclear Energy
RSci Tech	Association for Science Education	Education
RSci Tech	Institute of Biomedical Science	Biomedical Science
RSci Tech	Institute of Food Science and Technology	Food Science
RSci Tech	Royal Society of Chemistry	Chemistry
Eng Tech, RSci Tech	Institute of Physics and Engineering in Medicine	Medicine
RSci Tech	Society of Biology	Biology

2.2.1 How to join the schemes

In order to register for EngTech, ICTTech, or RSciTech, candidates must demonstrate that they are:

- able to apply the knowledge that they have learned in a practical manner within the workplace
- able to exercise personal responsibility in implementing tasks
- able to demonstrate that they are able to use effective communication skills
- able to show that they have made a commitment to an appropriate of code of professional conduct
- able to demonstrate a commitment to continuing professional development (CPD)

Table 3. Criteria to join EngTechgives a detailed set of competences that are required to join the EngTech registration scheme. From looking at the requisite skills, it is useful to note that there is significant emphasis placed on cognitive and interpersonal skills.

Table 3. Criteria to join EngTech

Engineering Technicians must be competent to:	This includes the ability to:
Use engineering knowledge and understanding to apply technical and practical skills	review and select appropriate techniques, procedures and methods to undertake tasks
	review and select appropriate techniques, procedures and methods to undertake tasks
Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services	identify problems and apply diagnostic methods to identify causes and achieve satisfactory solutions
	identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety and environmental impact.
Accept and exercise personal responsibility.	work reliably and effectively without close supervision, to the appropriate codes of practice
	accept responsibility for work of self and others
	accept, allocate and supervise technical and other tasks.
Use effective communication and interpersonal skills.	use oral, written and electronic methods for the communication in English1 of technical and other information
	work effectively with colleagues, clients, suppliers and the public.
Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.	comply with the Code of Conduct of their Licensed Institution or Professional Affiliate
	manage and apply safe systems of work
	undertake engineering work in a way that contributes to sustainable development
	carry out continuing professional development, including opportunities for this offered by their Institution, to ensure competence in areas and at the level of future intended practice.

Interpersonal skills cover a broad range of skills including communication, team working, time management, and leadership skill. These are skills that, although vital for a productive workforce, tend to be overlooked by more academic qualifications. Interpersonal skills are hard to assess in an academic setting where there is a focus on learning knowledge rather than gaining experience. However, this may be less the case

for apprenticeships and other vocational qualifications where such courses will be more vocational and less abstract.

STEM employers value interpersonal skills and they see them as important for employees to conduct their jobs efficiently. A 2011 survey of science technicians conducted for the Science Council[10] shows that employers do value these skills. From a telephone survey of 100 science technician recruiters, they found that 88% rated "behaviours and personal attributes" as important when recruiting technicians, this is comparable to other factors such as "technical skills" and "type of educational qualification" which were deemed important for 81% and 82% of respondents respectively.

Given the importance of interpersonal skills and the difficulty in measuring these, registration schemes could play an important role in identifying those that are registered as excelling in these skills. Interpersonal skills are important for the workplace and are also transferrable across the different disciplines. This makes registration schemes particularly useful for registrants to **signal** that they are competent in these areas.

Typically candidates are able to demonstrate that they have met the thresholds to join by either successfully completing an apprenticeship or other qualification accredited by the institution or through individual assessments by the professional institution.

Successful completion of an approved Apprenticeship can be used to demonstrate that the skills criteria have been met and can lead directly to registration. Other qualifications such as Level 3 BTEC Certificates or Diplomas can also be used to provide evidence of competences.

Alternatively, registration can be achieved without any of the formal qualifications listed above. Individuals will have the opportunity to demonstrate competences through individual assessments administered by the applicants' professional institution.

2.2.2 Fees

The fees to join registration schemes are split into the cost of joining the scheme itself and membership fees for the professional institutions that conduct the assessments. The registration schemes are currently £16.30 for EngTech and ICTTech, and £15 for RSciTech. The costs of joining a professional institution vary according to the institution but they are typically much larger than the costs of the registration schemes. The total costs to join the schemes, including the costs to join the professional organisation are typically about £100. Membership is annual and must be renewed on a yearly basis.

[10] Diamond, A, Bowes, L, Hughes, T, Conner, H, "Science Technicians in the workforce: supporting their development needs", 2011

2.2.3 How can registration schemes help?

Registration schemes have been put forward as a potential way to address the skills shortage facing the UK. For example, Vince Cable, Secretary of State for Business, Innovation, and Skills stated in May 2012 as he handed the first award for the new RSci Tech[11],

> "If we are to deliver the skills needed to return the economy to sustainable growth we must tackle the shortage of technicians in this country.
>
> The UK Commission for Employment for Skills tell us that by 2020, the UK will need to have trained 450,000 technicians to meet demand.
>
> That's why I fully support the work of the Technician Council to increase professional registration and it has given me great pleasure to present the first certificates to this talented group of Registered Science Technicians"

Registration schemes can alleviate the skills shortages discussed above through two channels:

- By improving the skills matching of employees to jobs within the economy
- By increasing the recognition and status of technicians and thereby attract more people to the industry.

Improving skills matching

Those that have successfully qualified to be on the register are able to set themselves apart from those that are not as they have evidenced that they have met certain skills threshold and demonstrated a commitment to continuing CPD. If these schemes are successful in recruiting the most capable, then they can act as meaningful signals to employers. If these skills translate to higher productivity, then employers will be willing to pay a higher salary to those that are on the scheme.

If the registration schemes are credible so that those that are on the scheme are able to increase productivity, then employers will be able to better differentiate employees and match those that are most able to the most challenging roles, and others to the less challenging ones. If employers are willing to accept registration schemes as a credible signal, then this will give employees incentives to invest in training in order to successfully make it on to the register. The result of this should be a general up-skilling of STEM technicians, as skills matching are improved and technicians invest more in training.

[11] http://www.sciencecouncil.org/content/first-science-technicians-join-register

Increasing recognition and status

Whilst status and recognition are both difficult measures to quantify, there is considerable evidence to suggest that technicians feel that they are undervalued and that their contributions are not fully recognised.

The following box (**Box 1**:Views from science technicians) demonstrates some anecdotal views from current science technicians that feel that they are being underappreciated and not being recognised adequately.

Box 1:Views from science technicians

In 2011, before the introduction of RSciTech and Rsci, the Science Council commissioned CFE to investigate the characteristics and attitudes of science technicians[12]. The report gathered results through online surveys, focus groups and face to face interviews. Science technicians were asked to give their opinions regarding the status that they enjoy. The following are a few select quotes from this study:

"If you ask our research colleagues they might see us as failed scientists, rather than something we've chosen to do." *Science technician in working in the environment sector*

"There is a perception that [a technician is] the person who works in the school chemistry labs getting out the Bunsen burners, so it's a school mentality, not perceived as being highly skilled… I avoid using the word technician; I say engineer or computer programmer" *Science technician working in higher education*

"Technician is a catch all for low employment; it's a fancy job description" *Science technician working in the food technology sector*

"They call anyone a technician these days. They change job roles and put technician either in front or behind and they think it sounds better. The job used to be draughtsperson now its technical designer. It's the way things are going" *Science technician in the advanced manufacturing sector*

The set of responses suggest that there is dissatisfaction with the broadness and vagueness of the term 'technician' and that currently there are many technicians that feel that the perception of their role is not as high as it should be.

More generally, in September 2011, Bosch conducted a survey of 1347 people aged 18-45 in order to assess attitudes towards the engineering profession and found the profession as a whole tended to be undervalued. They note that,[13]

> "less than half surveyed view[ed] engineering as key to the UK economy…. … many people, particularly younger adults, see engineering as a non-critical 'back of house' function in business"

[12] See footnote 10

[13] World of Bosch, issue 39, page 4

By spreading awareness of a high standard that is common across many industries under a tighter definition of 'Registered Technician', those that are registered could enjoy higher recognition and status. A 'Registered Technician' would describe those that have successfully passed skills thresholds in terms of technical skills and interpersonal skills. Focussing the definition at a high standard could confer a higher status to those that have successfully registered on to the scheme.

In addition, employers currently observe a large number of qualifications and find it difficult to differentiate between them. Currently there are 181 apprenticeships in the UK, with over 100 more in development, and 1000s of qualifications that are eligible for inclusion in apprenticeships[14]. The Richard Review of apprenticeships (2012) [15] notes the current system of apprenticeships is very complex, which can prove confusing for employers.

> "In many sectors we have an extraordinary number of qualifications, which under the guise of flexibility can be stitched together in an infinite number of combinations leading to any possible outcomes but no clear accomplishment".

Registration schemes can help reduce this confusion by creating a consistent threshold amongst these qualifications. This could have the result of preventing the term, 'technician' from becoming a catch all term for many job roles.

However, as **Table 2** shows, even under the tighter definition of registered technicians, there are still a wide variety of industries that can be included under this grouping. The multitude of disciplines poses challenges for setting out standards that are specific enough for each of the industries, but also general enough that it makes sense to group them under the same scheme.

[14] Doug Richard, "The Richard Review of Apprenticeships", November 2012

[15] See footnote 14

3 The Economics of Registration Schemes

In this section we will investigate the economics of registration schemes and how this can be applied to the STEM schemes. In particular we will be focussing on:

- The mechanisms of registration schemes
- The benefits of registration schemes
- The costs of registration schemes
- How registration schemes are likely to grow

3.1 Registration schemes and adverse selection

Registration schemes can act as a **signal** from employees to employers demonstrating that they have achieved a high skills threshold. These skills can be technical, cognitive (such as interpersonal skills), or both, but for the scheme to be economically valuable they must be linked to the productivity of the worker. If there is a requirement to re-register on a frequent basis, then the signal is useful for demonstrating the registrants' skills are up to date[16].

When employers are looking to fill roles, they seek the people that are the most suited for the job. They would like to fill the most challenging roles with most capable people. In order to discern how capable candidates are, employers can look at academic/vocational qualifications, past work experiences, references from previous employers and the candidates' performance at job interviews.

However even after looking at these other signals they may not be able to differentiate candidates as well as they would like. In other words, there is an asymmetry of information, the candidate knows their own true skills but the employer does not. Where this is the case there could be a problem of adverse selection.

Adverse selection[17] describes a situation where one side of a transaction has more information about attributes and characteristics of an important characteristic than the other. Under these circumstances, the seller/buyer of a product must set the price prudently in order to cover the risk that they are adversely selected against. An example will serve to illustrate further (**Box 2:** Adverse Selection in the Health Market within the context of the health insurance market.

[16] For this to be the case, it is important that registrant is required to be re-assessed each time they re-register.

[17] See Akerlof (1970) for the seminal paper that analysed the effects of adverse selection in the used car market.

Box 2: Adverse Selection in the Health Market

When insurers decide to offer health insurance, they are conscious of the fact that they are not aware of how healthy the people they are insuring are, whereas those that are being insured know how healthy their lifestyles are.

Without any form of signalling or screening, given a set premium, those that are of poor health and therefore more likely to need a pay-out are more likely to join the insurance scheme. Whereas those that are of good health are less likely to want to join the schemes as they know that they are unlikely to need a pay-out.

This is the phenomenon of adverse selection; those that are attracted to the scheme are precisely those that are more costly for the insurers.

As the insurers are aware of this problem, they would have to set a higher premium in order to cover the risk that those that are applying for the insurance are of poorer than average health due to adverse selection. However raising the price creates adverse incentives and exacerbates the problem as the higher price would deter those that are of good health from joining the scheme even more and attract higher risk people that know they are more likely to receive a pay-out.

In the worst case, the insurer may not be able to offer a market for health insurance as they are unable to set a price that would attract a mix of those that are of poor health and those that are of good health.

Potential mechanisms that have been used to overcome this have been wide and varied, the following are a 2 examples:

- Screening mechanisms such as looking at lifestyle choices, age, or past medical histories.
- Making insurance mandatory so that there are no adverse selection problems as everyone is required to join a scheme.

In the context of the jobs market, if employers find it difficult to tell how capable potential employees are and find it difficult to distinguish amongst them, they will offer wages that reflect the average quality of the workforce. At these wage levels (which reflect the average productivity of those that are considering the job), those that are less productive would be willing to take the job, however those that are more productive would not.

In light of this, employers would revise their expectations of the average workers' productivity downwards knowing that the most capable are less likely to consider the role given the lower salaries. This would make them lower their expectations of the average productivity of the prospective workforce further as they know that the most capable would not apply at these wage levels.

Essentially, by offering a lower wage, they are able to cover the risk that the candidates they employ will not be able to perform the job to an adequate standard. However, this has the adverse result of deterring the most capable from applying for the job roles.

Qualifications, previous work experience, references, and job interviews are methods that have been used in order to overcome this problem. These mechanisms work as signals from the employee to the employer by conveying their productivity.

Registration schemes can also act as a signal to employers as those that are on the scheme have demonstrated that they have been assessed independently and have proven that they have met specific skills and competency thresholds. Without registration schemes, capable employees may be deterred from entering the industry as the wages offered (which reflect the productivity of the average workforce rather than their productivity) would be too low[18].

In this situation, very capable employees would find it beneficial to signal to the employer that they are highly capable and productive and therefore warrant a higher pay. For employers to have confidence in this signal, they must believe that it is not an easy signal for those that are less capable to emulate. Therefore the competencies must be set at a sufficiently high level and be assessed independently.

If we take the extreme case where everybody can register regardless of competence, then the signal is not helpful as people on the scheme could have varying levels of competence.

If we now take the opposite extreme and imagine that there is a signal that only very few people can achieve, then the signal becomes very useful for employers to differentiate between those that are very capable. For example if there is a qualification that is given to only the top quartile of any given cohort, then anyone that has this qualification would be able to signal that they are able to be effective in the workforce.

There is a cost attached to obtaining the signal, not in monetary terms but personal costs in terms of the effort required to attain the requisite skills. Those that are more capable are able to acquire the skills required to achieve registration with less effort than those that are less capable. If this is the case, the skills threshold could be set at a level so that those that are capable are incentivised to make the effort to become registered and those that are not are not incentivised to do so.

Those that are less able would find the effort and time associated with obtaining the qualification too high compared to the wage uplift that is expected after the qualification and would not take the qualification. When this is the case, only those that are very capable would take the qualification and those that are not would not.

If the **signal** operates in the desired manner and those that are registered are of higher calibre than those that are not and employers are confident in this, then they would find it beneficial to offer a higher wage to those that are registered.

Box 3: Hypothetical example of incentives provides an example exploring the incentives of people considering taking up the registration scheme.

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[18] The analysis on signalling here is based on the seminal paper by Spence. Spence, M, "Job Market Signalling", *Quarterly Journal of Economics,* vol 87, no 3, pp355-374

Box 3: Hypothetical example of incentives

Suppose there are 2 individuals, **A** and **B** who are both considering investing time and effort in training to join the registration scheme.

Currently they are on salaries of £25,000 per annum, assuming that the **signal** from the registration scheme is credible, employers are willing to offer a salary of £30,000 to those that have successfully joined the register. The joining costs of the schemes are ignored in this example in order to keep the analysis simple.

Assume that **A** is more capable than **B** and therefore requires less effort to pass the criteria required to make it on to the register. Assume that it takes **A** 100 hours of training to reach the necessary standard and it takes **B** 500 hours of training to reach the required standard.

It is difficult to attach an accurate monetary value to time, however a good proxy would be to use their current salary. As they are both on £25000 and assuming that they work 2000 hours a year (to keep the calculations simple), their hourly salary would be £12.50 each.

So it would cost **A** £1250 (representing the monetised amount of effort) and **B** £6000 to complete the qualification. Under these circumstances **A** would find it beneficial to obtain the qualification as she would receive a pay rise of £5000 after a cost of £1250, whereas **B** would not as they would have to put £6000 worth of effort in order to achieve a pay rise of £5000.

The following table summarises these results:

Name	Hours required to pass qualification	Monetised cost of obtaining qualification (£)	Expected wage uplift (£)	Benefits – Costs	Beneficial to take qualification?
A	100	1250	5000	+3750	YES
B	500	6000	5000	-1000	NO

As long as **A** finds it easier than **B** to learn the skills and competences required to join the registration scheme, it is possible to devise a competence level in which only **A** would be incentivised to take the qualification.

For the STEM registration schemes, professional institutions decide which of the qualifications have met the standards set by the Engineering Council and Science Council and therefore which of the apprenticeship schemes are eligible for direct entry into the registration schemes. There is a risk that delegating the task of deciding which of the qualifications have met the standards could result in inconsistent standards across the institutions. However if the standards are adhered to properly by the institutions, the registration schemes could provide a benchmark that employers are able to trust. This could provide clarity for employers that are currently confused by the multitude of qualifications that candidates are able to choose from.

3.2 The benefits of registration schemes

The benefits to the registration schemes can be split into those that are accrued to the employers and those that are accrued to the employees. These are discussed in turn.

3.2.1 Benefits to employers

The benefits of registration schemes to employers come from their ability to allocate job roles to people that are able to conduct the tasks more efficiently. If the signals from the registration schemes are credible and accurate, they will be able to match the most capable to the most challenging roles and vice versa. This will result in increased productivity.

With the registration scheme, employers would be able to offer those that are more capable higher wages and those that are less capable lower wages. This will attract more capable people to the industry that may have been otherwise deterred from entering due to the otherwise low salaries offered.

As discussed in the section **Increasing recognition and status**, there is a large number of qualifications and apprenticeships that STEM employers face when they are recruiting new technicians. There is evidence that this confuses employers who are unable to identify the true skills and abilities that the qualifications represent. By providing a common standard across qualifications in the science and engineering professions that employers are able to trust, employers will benefit from the clarity that this would bring.

Quality within the industry can be increased through 2 mechanisms:

- More capable people would be incentivised to join the industry owing to the increased status and reputation, and higher pay levels.
- Those that are currently in the industry would be incentivised to invest the time and effort in training in order to join the scheme.

Higher productivity would mean that employers would be able to earn higher profits. If employers credibly believe that they would see increased profits to as a result of the registration schemes, they may be willing to fund the schemes (registration costs and the membership to the professional institutions). This could encourage take up as the costs of membership and registration could be high for those that are at the early stages of their careers. However it is important to note that there will be a need for co-ordination amongst industry participants for this to be successful as employers would be weary of investing too much in funding training if there is a risk that they could be poached by other employers.

3.2.2 Benefits to employees

The benefits from registration schemes come from the ability to signal their competence to employers and colleagues, and the benefits from membership to

professional bodies comes from the ability to network and share information with colleagues within the same profession.

As registration schemes become widespread, there are likely to be gainers and losers from the schemes. Those that gain are those that have a higher productivity than that warranted by the wage level absent the signal; they would have been unwilling to enter into the industry (and may have sought employment elsewhere, where they were able to signal their high capability), even though they would have like to have done so if the wages were higher.

Those that lose out are those that were being paid a higher wage than their productivity due to the problem of adverse selection. With registration schemes, they would be paid a wage that reflects their capabilities rather than the salaries offered previously.

Whereas there are gainers and losers from the signalling effects of registration scheme, all employees are able to benefit from the membership of professional institutions. Through interactions (such as networking events) with other professionals in a similar industry, registrants are able to keep abreast of developments within the industry and share best practices with each other in order to improve extant methods and procedures. Better information dissemination within the profession is likely to lead to opportunities to share knowledge and for registrants to keep up to date with latest industry developments.

3.3 The costs of registration schemes

The costs of running the registration schemes consist of variable and fixed costs. The former are costs that are incurred as the number of registrants increase, and the latter are costs that are incurred regardless of the number of registrants. Fixed costs include[19]:

- Office costs such as rent and employee salaries of those that maintain the registration schemes
- Costs incurred through maintaining the database
- Marketing and advertising costs,
- Developing the standards required for the registration schemes

Variable costs include:

- Cost incurred through assessing candidates' competencies

[19] Strictly speaking some of these could be classed as semi fixed costs, as they will increase as the number of registrants passes a certain threshold. For example, the same employees may be able to maintain a database of 100,000 registrants, but may require more staff if the number of registrants grows to 1 million.

- Administrative costs associated with processing candidates
- Costs incurred through any support required for registrants

The fixed costs of registration schemes are likely to be high relative to variable costs. This is because once the standards have been developed and the infrastructure to maintain the schemes has been set up, the costs of adding further registrants are likely to be low. When the level of fixed costs is high relative to the marginal costs[20], there will be significant economies of scale. If the level of fixed costs is high, then average costs will decrease as the number of registrants grows. This is because the fixed costs can be spread across a wider customer base, and the average cost decreases as the scale of the scheme increases.

Those that administer the schemes must be able to at least break even otherwise the schemes are not sustainable in the long term. So they must charge a price that would mean that they are able to cover both their fixed costs and their variable costs. As variable costs are costs that are incurred as more registrants join the scheme, this provides a floor for the amount that those that administer the schemes are able to charge. For example if it costs £10 pounds per person to assess whether someone has met competences required, then at least £10 must be charged in order to break even.

This is not the case for fixed costs, as the number of registrants grow the fixed cost can be spread across a wider registrant base and therefore the fixed element of the costs can be reduced as the number of registrants increases. When the fixed costs are high relative to variable costs, the pricing will be driven by the variable elements of the costs. **Box 4**: Economies of Scale goes through a hypothetical example that illustrates this point.

[20] The marginal cost is the additional cost incurred when a new registrant is added on to the register.

Box 4: Economies of Scale

In this example, we will consider a hypothetical registration scheme. There are fixed costs and variable costs that are associated with running the scheme. For simplicity, we assume that the only fixed cost is the cost to set the scheme up and the only variable costs it the cost to assess potential candidates.

Assume that it costs £10,000 to set the scheme up and it costs £5 per person to assess whether the registrant has successfully demonstrated the competencies required.

When there are only 100 people on the scheme, the total costs to run the schemes will consist of:

- £10,000 fixed costs
- £5*100=£500 variable costs

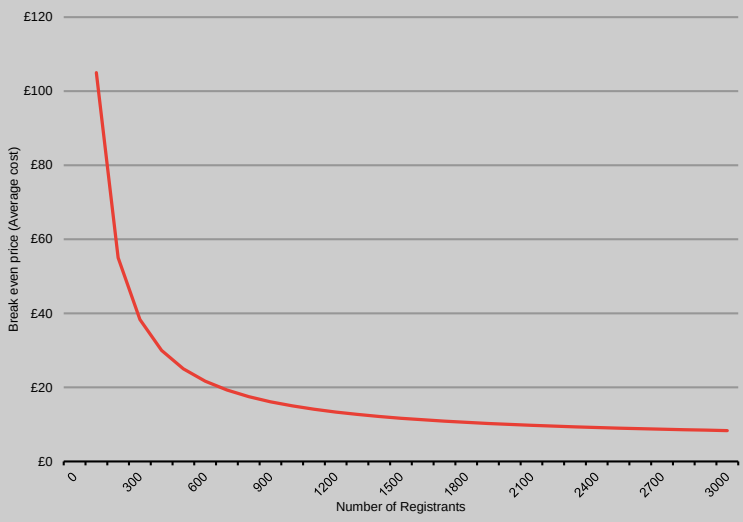
Making the total cost of the scheme £10,500. In order to break even each person on the scheme would have to be charged £105 each for the scheme to be sustainable.

Suppose now that there are 1000 people on the scheme, as the fixed cost is spread across a wider base of people, each person can be charged just £15 each for the scheme to break even.

When there are 10,000 people, a price of £6 per person is enough for the scheme to be sustainable.

The following chart (**Figure 1**) shows how the average cost (the price that needs to be charged in order to break even) decreases as the number of people on the scheme increase.

Figure 1. Economies of scale illustrated



As the number of registrants increase, the price that is set can be the same as the variable costs required to run the schemes. For example if there are 1million people on the scheme, then a price of £5.01 would be enough to break even.

3.4 Growth of Registration schemes

Whilst predicting the growth path of registration schemes is fraught with difficulties, the benefits and costs analysed above can help analyse the potential growth trajectories.

Due to the economies of scale, the cost per registrants decreases as schemes grow. However the benefits to the employees will increase as the size increase. Both the benefits from signalling and greater information dissemination will increase as the number of registrants grows.

The signal works better if more people recognise it and find it credible. For example if only one firm recognises the scheme as a quality differentiator then the registration is non-transferable within the industry. Whilst this does not mean that it is useless, the prospective registrant would value the benefits of the scheme lower than it if it was universally accepted as an industry standard and therefore transferable within the industry.

If the schemes start gaining credibility as a quality differentiator and are able to increase the profits for firms, more and more firms will start to recognise them as a quality standard. This will have the result of increasing the benefits of the schemes to prospective registrants.

As increasing numbers of firms start accepting the registration schemes as a standard, those do not recognise them will start to become uncompetitive relative to other firms in the industry. Provided that the registration schemes are able to differentiate quality, those that recognise the scheme will be better able to match skills and therefore raise their productivity and profits. When this happens, more firms will be incentivised to recognise the standard and therefore increase the benefits to the prospective registrants.

It is important to note that this virtuous cycle of benefits increasing productivity and increasing benefits is only possible if registration schemes are able to act as a credible signal and raise the productivity of the workforce and the wages of those on the scheme.

The other benefits of registration schemes are related to the level of information exchange that is facilitated between registrants. As the network grows, the benefits derived from this channel are likely to increase as there are more people in the network and therefore more information to share.

In summary, although the costs of operating the schemes decrease as the number of registrants increase, the benefits derived from these schemes are likely to increase as the schemes grown in size.

The analysis on benefits and costs indicates that there are significant potential benefits to society from promoting registration schemes where there are significant adverse selection problems in the job market. However the schemes need to carry out an

important balancing act. On the one hand, they need to be reasonably restrictive in their membership in order for the schemes to be credible and therefore beneficial to employers and employees. On the other hand the schemes need to be of significant size in order to be able to generate the cost advantages that are derived from the economies of scale.

When individuals decide to join the scheme they will compare the benefits against the costs and make a decision based on this. As the benefits become larger and the costs smaller, it is likely that more people would find it beneficial to join the scheme. This implies that growth at the early stages of the scheme is likely to be sluggish; however as the economies of scale start to become relevant, growth will accelerate as more people that find it beneficial to join. Added to this, if the schemes become costly to ignore for current employers as described above, there is likely to be a tipping point where the network becomes prevalent across the whole industry and becomes an industry standard.

4 Barriers to Growth

Despite the economic advantages that registration schemes offer, membership for technicians schemes are relatively low. For example, research by the Engineering Council suggests that membership has averaged approximately 14,000 from 2009-2012[21]. This represents a very small proportion of those that could potentially join the scheme. In this section we explore what the potential barriers that are hindering the growth of these schemes to achieve their maximum potential.

4.1 Not widely known

An important precondition for these schemes to become successful is that they are recognised by employers, and this means that they have wide appeal and awareness. This is particularly important for these schemes as they span such a disparate group of industries.

In order to assess the characteristics of those that are able to join registration schemes but choose not to, DJS (2010)[22] surveyed engineering technicians that were qualified to NVQ Level 3 or above and who were not currently registered onto a registration scheme through online surveys and interviews.

From this they found that awareness of EngTech and ICTTech was low, especially relative to the CEng scheme. The research found that only 47% and 21% of those that were responsible for recruitment were aware of EngTech and ICTTech respectively. Amongst non-registered engineers, only 49% were aware of EngTech, and there was no awareness of ICTTech[23]. Whilst this sample is biased as only those that were not registered were questioned (and hence were less likely to have heard of the schemes in the first place), these statistics are indicative of the fact that there is no widespread awareness of these schemes. These numbers contrast to CEng, where 80% of company representative and 86% if individuals said that they were aware of the chartered scheme.

4.2 Benefits too low

There is mixed evidence with regard to how well the current schemes are able to set registrants apart. If registration is not met with increased career prospects and higher salaries, employees will not want to join the scheme.

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[21] Dinnage, K, "Engineering Technicians: the case for a change in culture and attitudes", Engineering Council.

[22] Hinde, J, "2010 Survey of non-registered Engineers", DJS Research

[23] There were 26 that were working in IT/Computing/Software that were questioned, and none of these had heard of ICTTech.

The survey commissioned by the Engineering Council to assess attitudes of currently registered engineers found that the current EngTech registrants were not seeing the benefits to the schemes that are expected[24].

When asked why they had decided to join EngTech, the top three answers that were given by the 423 respondents were:

- "I felt that it would be helpful in my career development" - *73%*
- "I felt it would give me greater professional status" - *58%*
- "I wanted my professional skills and experience recognised" - *57%*

The responses indicate that prospective candidates are looking for increased career opportunities and recognition. However it appears many have not seen these come to fruition.

Respondents were asked about the impact that the registration schemes have had on their careers. Only 20% felt that it had increased their career opportunities, and 14% felt it meant that they were valued more by their employers and colleague, whilst 49% felt that it had no impact at all. When chartered engineers were asked the same question, 35% felt it increased their job opportunities and only 37% felt that it had not impacted their careers at all.

Despite the perception that registration schemes may not have brought the benefits that were hoped for, there is evidence that those that are registered with EngTech are indeed receiving a higher salaries compared to those that are not.

The same survey above asked respondents to report their current salaries, using these results Harrison[25] compared them to the wages reported in the Labour Force Survey from the first quarter of 2011 to find that those that were registered were receiving higher pay. Harrison estimated that the median pay for technicians was approximately £21,300 per annum, and the median reported salary for those that were registered was £35,000 per annum. This represents a significant uplift for those that are registered. These results should be treated with caution, given the inconsistencies in the definition of technicians between the ERS survey and LFS data, the bias due to the fact that those that responded to the sample are not random, and the relatively small sample size of the survey respondents.

In summary, the evidence of the benefits of these schemes in terms of salary uplifts are mixed and further research would be required to get a clearer picture.

[24] ERS Report for the Engineering Council, June 2010.

[25] See footnote 5

4.3 Behavioural biases

The costs for joining the registration schemes themselves are not high and are unlikely to act as a barrier for growth. The Science Council research that investigated the attitudes of technicians felt that fees for joining the schemes were not too high. They note,[26]

"Both individuals and employers are likely to view the proposed £15 registration fee as reasonable (a majority of technicians stated that they would be willing to contribute £11-20 or more)"

However when coupled with the membership fees, the total costs (membership fee for the professional body and the registration scheme) come to approximately £100 per year. This cost may seem too high for some, especially for those that are closer to the beginning of their careers.

Employers may be willing to fund both the membership fee and registration fee but they must be confident that other employers will not be able to free ride on the training they fund by poaching those that have successfully registered.

If we look at the costs and benefits of registration schemes, it is clear that the benefits from signalling are currently intangible, and uncertain and received in the future, whereas the costs are immediate. There is evidence from behavioural economics that when people make decisions they are not able to value benefits and costs that occur far into the future accurately[27]. The result of this is that immediate costs and benefits tend to skew the decision process of individuals rather than future costs and benefits appropriately discounted. Examples of this include quitting smoking and enlisting in pension plans. The benefits of quitting smoking are intangible and in the future, whereas the (psychological) costs are in the present; the benefits of saving in a pension are intangible and in the future, whereas the cost of saving is immediate.

Applying this to the registration schemes, it is possible that individuals may be deterred by the immediate costs of joining, when they are faced with an uncertain benefit in the future.

A potential way to overcome this is if employers fund the potential registrants to become registered (including the cost of membership). This would result in a benefit for all involved but must be co-ordinated so that the incentives for employers that do not fund their potential registrants to poach others that have registered is minimised.

[26] See footnote 10

[27] It should be noted here that the finding is that people value the present more than the future a lot more than is suggested by economic theory. That people value the future less than the present is, in itself uncontroversial. For example most people would prefer to have £1 now than £1 in a years' time.

5 Conclusions

The preceding chapters have analysed the economic principles that are relevant to registration schemes. This analysis suggests that registration schemes could indeed play a role in enhancing the status of STEM technicians. Registration schemes could provide a common standard across industries that currently have a myriad of qualifications and job titles and help bring clarity to the grouping of 'technician'.

When registration schemes become sufficiently well recognised and accepted as a standard of quality and proficiency, they could increase the ability of employers to match skills to appropriate job role. This could result in efficiency gains and therefore increased profits.

Employers therefore have an incentive to promote registration schemes and endorse them if they are able to improve job matching. However, they may be unwilling to fund the schemes for their employees if there is a risk that other employers will attempt to poach the registrant after successful registration. The more employers that agree to fund the schemes, the less likely the new registrants will be poached. Therefore there is a need to encourage co-ordinated, widespread take up by employers in order to alleviate this concern.

Employees on the registration schemes would benefit from the increased salaries and they may be encouraged to invest time in training in order to raise their skills. This will have the effect of up-skilling the current workforce.

As the schemes spread and increasing number of firms adopt the standard, it will start to become costly for those firms that do not recognise the schemes as they will be less efficient relative to competitors. As increasing numbers of firms start to recognise the standard, the benefits of the scheme to individuals will also increase.

The average cost of running these schemes are expected to decrease over time due to the cost structure of registration schemes. Relative to fixed costs, the incremental costs of adding new registrants is likely to be low. As the number of registrants increase, the high fixed costs can be spread across a broader base and result in lower average costs.

These two factors – the increase in benefits and decrease in costs as the schemes grow in size – imply that the growth path of these schemes is likely to be exponential; there is likely to be a tipping point where the schemes become the industry standard and pervasive.

The Association of Accounting Technicians demonstrates an example of a registration scheme, aimed at the technician level that was successful in achieving high growth and eventually global coverage. Their membership grew from approximately 25,000 full members in 1980, to over 125,000 members in 2012.

The success of AAT demonstrates that it is indeed possible to have a successful registration scheme for technicians that are recognised as an industry standard. However, it is important to bear in mind that the AAT serves only accountants and as such developing standards that are relevant is easier than when the scheme covers a disparate group of disciplines.

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Association of Accounting Technicians (AAT)[28]

The AAT was set up in 1980 from a merger between the Institute of Accounting Staff (IAS) and the Association of Technicians in Finance and Accounting (ATFA). The number of full members grew from approximately 25,000 in 1980 to 125,000 in 2012 with global coverage.

The AAT aimed to address the part of the accounting profession that worked alongside chartered accountants, who at time lacked formal recognition in terms of qualifications or professional membership. Accounting technicians work in accounting and finance with chartered accountants and take on jobs that range from account clerks, to credit control officers to financial managers.

The AAT is sponsored by 4 of the 5 major accounting bodies in the UK:

- The Chartered Institute of Public Finance and Accountancy (CIPA)
- The Institute of Chartered Accountants in England and Wales (ICAEW)
- The Chartered Institute of Management Accountants (CIMA)
- The Institute of Chartered Accountants of Scotland (ICAS)

These institutions provide non-financial support to the AAT and offer fast-track entry or exemptions to AAT registered technicians.

There are three ways to become registered with the AAT[29]

- Student membership
- Affiliate membership
- Full membership

These offer different benefits according to the level of membership.

Benefits from joining AAT

Membership	Benefits
Student Membership	- Online tools to aid learning such as practice papers and E-learning modules - 2-monthly magazine and monthly newsletters that contains latest news and advice - Networking opportunities through branch activities that offer support, contacts, and seminars
Affiliate Membership	- Online tools to log work experience - Online CV builder - Online support for career development - Access to AAT job site

[28] Much of the information here is based on interview held with AAT.

[29] For further details see their website at www.aat.org.uk

	- Networking opportunities through AAT events
Full Membership	- Right to use the letters, 'MAAT' after name to demonstrate competence and experience - CPD support - Networking opportunities through AAT events - Reduced rates for classes and seminars

Source: www.aat.org.uk

In order to become a full member the candidate must first pass the qualifications to become an affiliate member. Once the relevant work experience has been carried out after qualification, they are able to apply for full membership.

In order to become an affiliate member, the candidate must pass the highest level of qualifications (level 4). So the letters 'MAAT' after an accountant's name demonstrates that they have gained the relevant technical skills (gained through studies) and the interpersonal and cognitive skills (gained through work experience)[30]

One of the attractions of the AAT is that they offer clear progression routes into chartered accountancy and higher education, with approximately a third of members going on to chartered studies.

The AAT is also in continuous engagement with employers to ensure that the qualifications are relevant and meet their needs. Having been recognised as credible standard of proficiency, employers often ask for AAT as pre-requisites in job advertisements. The AAT also engage in regular dialogue with training providers to ensure that the qualifications remain credible and desired by prospective students. Given the widespread recognition and status that the AAT confers, they have a retention rate of approximately 90%.

Despite the economic benefits of registration schemes, they have not been successful to-date at the technician level. This could be due to the benefits of the scheme being insufficiently high to entice new registrants, or due the costs to the potential registrants being too high when coupled with the costs of membership to professional bodies. Notwithstanding these barriers, economic principles suggest that there are valuable economic benefits to be derived from these schemes.

[30] In reality it is not as clear cut as this as the student stage will involve some work experience and the affiliate stage will involve further learning

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FRONTIER ECONOMICS EUROPE
BRUSSELS | COLOGNE | LONDON | MADRID

Frontier Economics Ltd 71 High Holborn London WC1V 6DA
Tel. +44 (0)20 7031 7000 Fax. +44 (0)20 7031 7001 www.frontier-economics.

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