

Strategic Business Case

All Strategic Business Cases must be received no later than 5pm Friday 21st Sept.

Please submit by email to callsubmissions@sheffieldcityregion.org.uk

1 - PROJECT DETAILS

1.1 - PROJECT & APPLICANT'S INFORMATION

Project Name:	From teenager to employee – A Sheffield City Region, engineering and advanced manufacturing talent pipeline creator
Project Location/ Address, including Post Code and Local Authority Area:	UTC Sheffield – City Centre 111 Matilda Street Sheffield S1 4QF Local Authority areas covered include: Sheffield, Rotherham, Barnsley and Doncaster. UTC Sheffield has a South Yorkshire catchment area. In addition to the areas above the UTC also recruits from Bassetlaw, Bolsover & Derbyshire Dales and Chesterfield and NE Derbyshire.
Applicant Organisation, Size & Company Registration Number (if applicable):	Sheffield UTC Academy Trust 111 Matilda Street Sheffield S1 4QF Size: S Company Registration Number: 07652696
Contact Name and Role:	Alex Reynolds – Principal
Address:	UTC Sheffield – City Centre 111 Matilda Street Sheffield S1 4QF
Email:	areynolds@utcsheffield.org.uk
Telephone:	0114 260 3970
Other Delivery Partners and Roles:	<ul style="list-style-type: none"> • The Sheffield College – UTC lead sponsor, destination provider and collaborative qualification delivery partner • Sheffield Hallam University – UTC sponsor, destination provider, collaborative qualification delivery partner • University of Sheffield – UTC supporter, destination provider, collaborative qualification delivery partner • AMRC training centre – UTC supporter, destination provider, careers guidance – destinations into the AMRC and support identifying suitable employers for apprenticeship. Support transition to degree apprenticeship L4+ pathways

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	<ul style="list-style-type: none"> National College for High-Speed Rail – Doncaster – UTC supporter, destination provider, careers guidance - destinations into NCHSR and the rails sector. Assigning suitable employers for apprenticeship. Support transition L4+ pathways Festo – Lead employer partner, training provider, equipment supplier XYZ machine tools – Lead employer partner, training provider, equipment supplier Siemens – Lead employer partner, training provider, equipment supplier PES Performance – Chair of Governors, employer partner, careers guidance and advice – high tech industry skills requirement to allow progression to HE, apprenticeship and employment Other employer partners supporting the UTC and curriculum delivery: Rolls-Royce, Siemens, Arconic, Lavender International, CTL Seal, AES Seal, Newburgh Engineering, Fernite, Kewtech.
1.2 - FINANCIAL SUMMARY	
A - Total Scheme Cost (£)	£1,104,215
B - Total Private Investment (£):	<p>XYZ machine tools: Contribution: £40,927.50 CNC Machine: £36,000 Total: £76927.50</p> <p>Festo: PLC systems: £28,000 CP training (UK): £12,000 CP training (GER): £8,000 W.Skills support: £20,000 Industry 4.0 training: £12,000 Branding: £1,500 Digital Technology Packages: £10,400 Total: £91,900</p> <p>Total: £168,827.50</p>
C - Total Other Public Sector Investment (Non-SCR Funding) (£):	<p>UTC contribution: Capital towards equipment: £120,487 Capital towards infrastructure: £50,000 Additional student funding: £270,000 (2019/2020)</p> <p>Total: £440,487</p>
D - SCR Grant Funding Sought (£):	£494,900
E - SCR Loan Funding Sought (£):	NA

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F - Total SCR Funding Sought (£):	£494,900
G - SCR as % of Total Scheme Investment (G=F/A):	44.8%

2 - PROJECT SUMMARY

2.1 – Please provide a summary description of your project, appending any supporting graphics where relevant. This section should be suitable for publishing on your own and the SCR website.

The UTC will be the first phase, talent pipeline creator for the region in the growth areas of engineering & advanced manufacturing. Students now commence the skills development required for industry from age 13 at the UTC promoting increased progression into level 4+ provision from the age of 18. 100% of students completing studies at the UTC have moved onto high quality degrees, apprenticeships or employment. As a result of this project these numbers will increase.

The UTC in collaboration with its employers and universities, will develop skills that are fit for the future of industry across hundreds of students who will move into businesses with superior technical skill and capability compared with others of a similar age. In addition, the UTC will support the upskilling of adults in the current workforce through commercial courses in industrial automation and advanced technologies whilst also raising aspirations for learners from disadvantaged backgrounds.

Finally, the project will explore new ways of working with the universities and employer partners to deliver the new T level qualifications and provide access to complimentary and cutting edge equipment for learners/employees who are studying higher level programmes at our partner organisations.

2.2 - Please provide details of what activities SCR funds will be specifically used to pay for.

Throughout the initial phase of the UTCs evolution, the staff body and subsequently our employer network and higher education partners, have realised that if young people are exposed to industry level equipment and provided with mentoring, teaching and skills development from industry specialists, then they can become competitive in the skills market at a much younger age.

The funds from SCR will be utilised to expand this ability into other key areas of specialism including machining, additive manufacturing and automation in line with industry 4.0 and the 'digital' factory. It will promote progression to level 4+ and give opportunities for industry and our partners to access this technology. In addition, to the capital investment in equipment the SCR funds will support the infrastructure requirement within the UTC.

The SCR funds will be specifically used for the following areas;

- Industrial automation Cyber Physical (CP) Lab equipment
- Machining capability Manual and Multi-axis CNC machining capability
- Additive manufacturing equipment to support product development and production ready component design
- Infrastructure requirements –
 - Building modifications
 - Improved access for industrial equipment
 - Utilities
 - Upgraded power infrastructure

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- Compressed air capability

2.3 - We appreciate that this project is likely to be at an early stage of development. Please complete Appendices 1, 2, 3, 4, 5, 7 and 9 with the best information you have currently. If this project progresses further there will be opportunities to update this information.

If you think any of these Appendices are not relevant to your project, please explain why below.



Appendices.xlsx

All relevant appendices have been completed based on available information

3 - STRATEGIC DIMENSION

SHEFFIELD CITY REGION STRATEGIC VISION

Our vision is to create: *A City Region with a stronger and bigger private sector that can compete in national and global markets.*

To achieve this, we are acting in six areas:

- 1. Ensuring new businesses receive the support they need to flourish***
- 2. Facilitating and proactively supporting growth amongst existing firms***
- 3. Attracting investment from other parts of the UK and overseas, and improving our brand***
- 4. Increasing sales of SCR's goods and services to other parts of the UK and abroad***
- 5. Developing the SCR skills base, labour mobility and education performance***
- 6. Securing investment in infrastructure where it will do most to support growth***

3.1 - How will your project contribute to the achievement of the City Region's strategic objectives and to delivering the outcomes of the SCR Strategic Economic Plan?

For details of Sheffield City Region's Strategic Economic Plan (SEP)

<https://sheffieldcityregion.org.uk/economic-strategy/growthplan/>

The project will support SCR strategic vision in these areas;

2. *Facilitating and proactively supporting growth amongst existing firms*

Access to a more readily available, highly skilled work force will increase growth of businesses across the region. This will shift the ageing demographic in industry and add value faster once they commence employment. In addition, it will provide opportunities for the current workforce to access advanced level technologies through industry led training programmes.

5. *Developing the SCR skills base, labour mobility and education performance*

Access to industry level equipment from age thirteen in conjunction with employer collaboration on curriculum and delivery will allow the SCR employer base to influence and shape the focus of

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education in a way that has never been achieved before. This means that upon progression from the UTC to level 4 and above the alumni will be able to rapidly pursue the next level of skills.

3.2 – How does your project meet the objectives of this commission?

The project will expand the UTCs work with employers, universities and partners to design learning activities required by the engineering and advanced manufacturing industries. These activities will be based around the technologies and skills required to ensure these businesses are increasingly competitive in the 21st century global market place. The project will do this by:

- Commencing skills development on industry specification technology and equipment from age 13. This will increase progression onto level 3 programmes at the UTC and facilitate that all students leave the UTC at 18 level 3 qualified and with the skills to progress to level 4 and above, including degree apprenticeships
- Increase student numbers studying engineering and advanced manufacturing at the UTC which will provide a larger workforce for the region. In the short term the project will increase level 3 learners by 60 per year and continue to grow as the T level programme is implemented ultimately providing a minimum 140 to 160 level 3 trained learners per annum.
- The project will allow for the effective delivery of T levels in engineering when they launch in 2020. In addition, this ability will promote new ways of working with partner's organisations to share access to equipment, technology, teaching expertise and industry partners to ensure delivery of T levels is effective.
- The technology sourced as a result of the project will allow for the UTC to become a centre of excellence in industrial automation for the Sheffield City Region. Festo are committed as an employer partner to support this development and in addition to the students leaving at 18 at level 3, the project support degree learners from both universities and provide commercial training programmes for adults in industry to upskill the current workforce.
- The UTC aims to continue to compete at a national and international level through the WorldSkills competitions but is now struggling to compete due to the advancement of the competition and the associated industrial and technological change. The investment supported by this project will ensure the UTC remains competitive allowing us to generate the most highly skilled automation, mechatronic and control engineers for their age in the country.
- This project will also collaborate closely with Sheffield Hallam Universities Digital Innovation Hub project. The exploration of cloud technology, the Internet of Things (IoT) and advanced automation are key elements of each project. Together, the UTC and Sheffield Hallam University will help to support progression onto higher and degree. As part of the collaboration the UTC and SHU have agreed to partner on the development of capacity for work placements in preparation for T level implementation and the ongoing placement work for degree students.
- The collaboration detailed above and the additional resource will allow access for employers to train staff with the ability to support this across both centres. This will allow the centre to deliver bespoke training courses for industry, particularly in automation and control in collaboration with Festo. In addition, the UTC will support employers across the region who require access to technology to support projects.
- The UTC will take part in the 'South Yorkshire Futures' programme. It will provide greater opportunities for disadvantaged students and raise their aspirations by a career focused education that promotes progression to higher level study and skilled employment for all.

3.3 – What is the rationale for public sector, and in particular, SCR investment in this project?

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The engineering and advanced manufacturing sectors are a major priority for growth across the Sheffield City Region and nationally. As the strategic plan states '70,000 jobs,' '30,000' of which are highly skilled occupations, in the sectors that this project focuses on, are required to improve the competitiveness of the region. Engineering UK report 2018 states that 61% of businesses surveyed in the CBI/Pearson Education and Skills Survey expressed a lack of confidence that there will be enough people available in the future with the necessary skills to fill their high-skilled job vacancies." A prime example of this is in high speed rail where, "7,200 jobs are required by 2020."

The investment will not only support learners at the UTC but the economic benefit will be gained by the employer network by allowing access to the technology for adults from industry, and improve experiences for other learners in our partner organisations including the Universities and local colleges.

The UTC has an extensive network of employer partners who collaborate on the development of projects, work experience/work placements, curriculum guidance and securing employment and apprenticeships for our students. This project has been designed with input from these employers, particularly from our lead sponsor.

STRATEGIC DIMENSION ASSESSMENT (TO BE COMPLETED BY THE ASSESSOR)

Does the project have a clear strategic rationale and align to SCR Growth Plan objectives and the SEP?

Will the project, as proposed, meet the requirements of the LGF (create private sector employment and grow the economy) and deliver the objectives of this commission?

Are there any adverse consequences if the project goes ahead / does not go ahead?

Is there a sufficient case for this project to be admitted into the call

4 - COMMERCIAL DIMENSION

4.1 - Please detail any market testing which has been undertaken to evidence demand/need and provide evidence that demonstrates that the private sector will respond to this opportunity.

The UTC is in constant dialogue with the business community it supports, some of which are detailed in section 1.1 under 'Other Delivery Partners and Roles.' These businesses, including others are clear in their skills requirements that this project aims to meet; machining, additive manufacturing and automation. It is no coincidence that partners from Sheffield Hallam University, who will collaborate further following the development of their Digital Innovation Hub, also highlight the requirements for these skills at higher levels. The UTC aims to be a primary feeder into these programmes. Letters of support can be gained and submitted expressing this need should they be required.

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Engineering UK in their 2018 report state that between '2014 and 2024, 1,240,000 graduate and technician core engineering jobs will arise across all industries as a result of both replacement demand and expansion demand.' In addition, '79,000 "related" roles' annually are required meaning '203,000 people with Level 3+ engineering skills are required per year to meet expected demand.' When compared to the current numbers of engineering graduates or apprentices being created, there is an estimated 'annual shortfall' of at least '83,000, and up to 110,000.'

The development of opportunities at age 16 and above and an increase in provision at levels 3, 4 and above is critical to increase the number of engineers with the right skills but efforts need to also focus on learners careers choices earlier than this to increase the numbers of students pursuing studies in the sector. This project will support this by ensuring careers guidance and exposure to technologies and opportunities in the sector is greatly increased resulting in higher attainment and further numbers progressing to higher level programmes of study.

Furthermore, the Sheffield City Region currently has a demographic surge at pre-16 where there is a requirement for more school places. There is an increased opportunity for inspirational projects to appeal to this cohort of students and encourage more of them to pursue careers in the specialist sectors supported by this project, resulting in a larger workforce in future years. (See section 5.1 'Outputs'). Highly skilled students at pre-16 will result in a greater retention into post-16, in addition to an increase in external applicants. The collaboration with Sheffield Hallam's Digital Innovation Hub will ensure discrete but also complimentary equipment that will increase skills development across the region and ensure the SCR is at the cutting edge of national and international technological development.

COMMERCIAL DIMENSION ASSESSMENT (TO BE COMPLETED BY THE ASSESSOR)

Assessors comments:

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5 - ECONOMIC DIMENSION		
5.1 – Please complete the following table as a summary of outputs and outcomes to be created by the project.		
Table 5.1 Outputs and Outcomes		
Outputs/Outcomes	Business as usual	Preferred way forward
Outputs:	80 learners per annum trained at level 3+ (100% successful destination)	140 learners per annum from year 2 onwards (120 level 3 year 2 to 3). 160 learners per annum from year 4 onwards (140 level 3 – T level) - 100% successful destination.* *(The increase in KS5 numbers will be further supported by the project due to the new equipment supporting the rise in KS4 numbers at the UTC. The new equipment will allow pre-16 students to develop more competent skills increasing the numbers of students progressing onto Post-16. In 2017.18 the UTC had 190 students on role in KS4, a demographic surge across the region has seen this rise to 300 in 2018.19 which the UTC will retain further into post-16 with support from this project).
	28 (35%) learners progress onto University	40% learners progress onto University
	40 (50%) learners progress to apprenticeship	55% of learners progress onto apprenticeship
	Of the 40 apprentices 50% are level 4+	Of the L3 trained leavers 75% progress to level 4+ apprenticeships
	15 (100%) level 2 learners progress to L3 FT provision or apprenticeship	100% of level 2 learners progress to L3 FT provision or apprenticeship
Outcomes:	Numbers of learners pursuing study and subsequent careers in the sector stabilise	Numbers of learners pursuing study and subsequent careers in the sector increases
	Collaborative working and partnership with providers remains stable	Collaborative working and partnership with providers (FE college, industry & universities) provides shared access to high level technology
	Numbers of people from disadvantaged backgrounds moving on to higher level study programmes (4+) remains the same	Numbers of people from disadvantaged backgrounds moving on to study higher level programmes (4+) increases and skill level is in line with industry requirements
	Productivity of businesses increases slightly across the region but talent pool is still not large enough to meet demand	Productivity of businesses increases substantially across the region due to access to a wider talent pool of highly skilled individuals

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	Careers advice for young people across the region improves but is not focused enough on the specific skills industry require	Careers advice for young people across the region improves dramatically through the showcase of industry skill across a range of providers catalysed by the UTC and its partners
ECONOMIC DIMENSION ASSESSMENT (TO BE COMPLETED BY THE ASSESSOR)		
<i>Assessors comments:</i>		

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6 - FINANCIAL DIMENSION						
Spend / Funding Profile	18/19	19/20	20/21	21/22 onwards	Total	Funding Status
(A) Total Private Investment (£)		XYZ – In-kind - £40,927.50 XYZ – CNC - £36,000 Festo - £83,900 (£160,827.50)	Festo - £8,000	-	£168,827.50	
(B) Total Other Public Sector Investment (non-SCR funding) (£)		UTC Machinery purchase - £120,487.50 Supporting power & building access - £50,000 Increase in student numbers - £90,000 (260,487.50)	Increase in student numbers - £90,000	Student number increase approx - £90,000 (Awaiting announcement of T level funding rate)	£440,487.50	Additional revenue funding in 19/20, 20/21 and 21/22 secured through increased student numbers as a result of the project. Based on the current timelines T level delivery should commence from 2022 but no confirmation of the funding methodology for T levels has yet been confirmed.
(C) Total SCR Funding Sought (£)		Festo CP Lab 410, with ten application modules- £316,900 XYZ CNC CT65 turning centre - £52,000 XYZ CNC LR750 4 axis machining centre - £53,000 Additive manufacturing equipment - £48,000 Air supply and infrastructure - £25,000 (£494,900) £500,000-	-	-	(£494,900) £500,000	
(D) Total Project Investment (£) (A+B+C=D)	(£782,215) £787,315	(£1,096,215) £1,101,000	£8,000	-	(£1,104,215) £1,109,315	
(E) SCR as % of Total Project Investment ((C/D)*100 = E)	(63.3%) 63.5%	63.3% 63.5%	0%	0%	(44.8%) 45.1%	
Degree of certainty of cost estimates	NOTE: Costs do not include VAT – UTC can claim VAT back <ul style="list-style-type: none"> 60% (Project designed and initial cost estimated based on specific requirements / details of this project) 					
FINANCIAL DIMENSION ASSESSMENT (TO BE COMPLETED BY THE ASSESSOR)						
Assessors comments:						

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7 - MANAGEMENT DIMENSION

7.1 What resources do you require to deliver this project?

Outside of the equipment and additional infrastructure requirements set out in this bid, the UTC has all of the resource capability to deliver the project.

The UTC has the appropriate space, skilled staffing, employer support and partners, university links and governor/management backing to implement the project effectively. The UTC is not yet at full capacity and has the capacity to grow within the existing spaces including housing the equipment set out in this strategic business case. Some infrastructure development is required as outlined.

Student occupancy in the UTC is currently at around 80%. We anticipate student numbers to meet capacity within the next 2 years assuming no investment. Demand is being driven by numbers of pre-16 students increasing year on year as are the number of those progressing to Level 3. It is anticipated that the new technology and equipment funded through Skills Capital will increase our capacity to support students and further increase the proportion of students progressing to Level 3.

7.2 Do you have full internal approval for this project to commence works?

If no, when is this expected?

Full approval for this project has been granted. Prior to submitting the application, the outline was shared with the governing body and subsequently with the MAT board. They have fully approved the scope of the application and support its implementation.

This has been approved by our partners, governing body and the Sheffield UTC Academy Trust. Employer partners and stakeholders supporting the bid include;

- The Sheffield College
- Sheffield Hallam University
- University of Sheffield
- AMRC training centre
- National College for High-Speed Rail – Doncaster
- Siemens
- Festo
- PES Performance
- XYZ machine tools

MANAGEMENT DIMENSION ASSESSMENT (TO BE COMPLETED BY THE ASSESSOR)

Assessors comments:

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Document Sign Off

8 – DECLARATION AND SIGN OFF

On signing the Strategic Business Case (SBC) the applicant agrees to the following:

1. *The Sheffield City Region (SCR) Mayoral Combined Authority (MCA) is a public body and is therefore subject to information/transparency laws and the Local Government Transparency Code 2015. This SBC will be shared with the appropriate SCR Boards including the MCA and Local Enterprise Partnership (LEP). In line with legislation, papers to the MCA and LEP meetings are published in advance and made publicly available. These papers will detail the applicant and summarise the SBC in sufficient detail to allow the members to take an informed decision. At this point, under Local Government access to information provisions, the SBC may have to be made available for inspection to any member of the public who requests it.*

Once a scheme is admitted onto our programme, in line with SCR's Assurance and Accountability Framework and Freedom of Information Act (FOI) Publication Scheme, the SBC must be published on the applicant's and the SCR website.

For this purpose, you may wish to also send a redacted copy stating any exemption or exception applied under FOI or Environmental Information Regulations. We will consider any requested redaction. Any comments received after publication are required to be reflected in the OBC and FBC if the scheme progresses further. SCR will require evidence of this through the assurance process.

2. *LGF support is not allocated unless and until a Full Business Case has been approved and a Grant Funding Agreement has been executed by both parties. Acceptance of this SBC does not in any way signify that LGF support has been approved towards it.*
3. *To the best of your knowledge all the information provided in this SBC is true and correct. You acknowledge that the information provided will inform any future contract should a decision be made to support the scheme.*
4. *You will comply with due diligence requirements appropriate to this scheme. This will be conducted by the SCR Executive Team and further details will be provided if the scheme is approved.*

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Person responsible for the application (Chief Executive or relevant Executive Director in your organisation)	
Name:	Alex Reynolds
Role:	Principal
Date:	11/12/18
Counter signatory – Director of Finance	
Name:	Nick Crew
Role:	Executive Principal
Date:	11/12/18
For SCR Use Only	
Scheme Reference Number:	
Date Received/ Accepted:	
Version Number:	
Summary of Amendments: (if applicable)	