



Evaluation of TCS

Metrics: Evaluating Research and Science Based
Programmes

Cambridge-MIT Institute 18 June 2004

Robin Brighton
SQW Limited

TCS

- Business defined project undertaken by “Associate”
 - Normally based in the business
 - Jointly supervised by “knowledge based partner” & business
 - 2 year (+/-) projects
- Initially large company scheme, but by 2001 90% SMEs
- Rationale
 - Firms have difficulties exploiting technology outside established capabilities
 - Insufficient use made of knowledge base
 - Graduate skills & employer reluctance to employ graduates
 - Business knowledge base communications
- Steady evolution in programme – now Knowledge Transfer Partnership (KTP) and extended to FE



The evaluation (2001-2002)

- Input into (but independent of) Quinquennial review
- Wide scope – economic impacts, benefits, processes, management and costs
- Tightly specified methodology – 3 core surveys:
 - Knowledge based partners (50, but many more programmes)
 - Associates (102)
 - Companies (219)



Companies and programmes

Company' s relationship to technology (in comparison to UK competitors)

TCS programme	<i>Active developers</i>	<i>Quick adopters</i>	<i>Par with competition</i>	<i>Behind competition</i>	<i>All Companies</i>
<i>Technology new to the company</i>	33%	35%	42%	67%	38%
<i>Significant advance in technology</i>	47%	39%	44%	33%	45%
<i>Technology at company norm</i>	19%	26%	15%	0%	17%
<i>Technology less advanced than the norm</i>	1%	0%	0%	0%	0%
<i>All Companies</i>	48%	13%	31%	8%	



Establishing new relationships

Prior collaboration with an HEI

Employment				
0-9	10-49	50-249	250+	All
63%	49%	56%	86%	56%

Employees	RAE rating of the KBP	
	1, 2 or 3	4, 5 or 5*
0-9	53%	47%
Small (10-49)	67%	33%
Medium (50-249)	62%	38%
Large (250+)	45%	55%
All	62%	38%

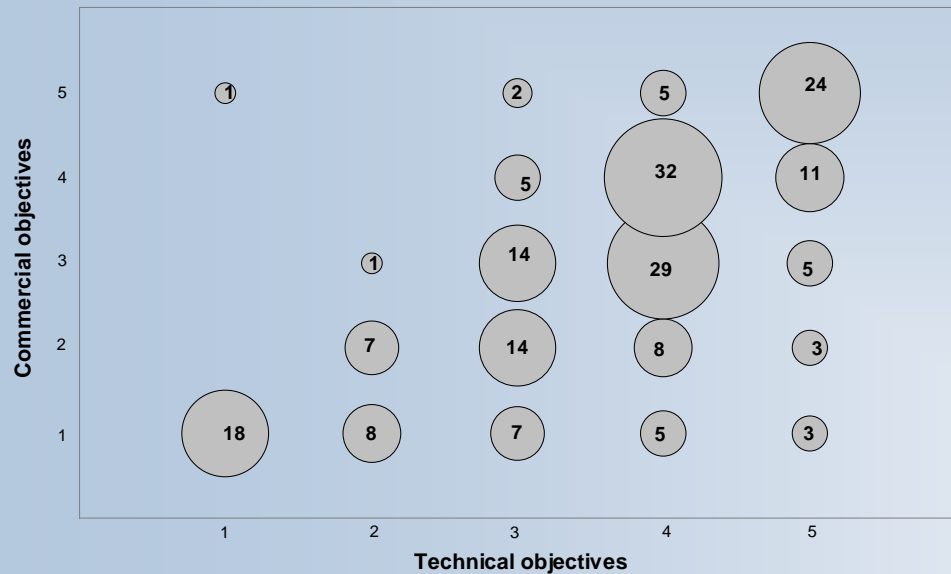
RAE grade Previously collaborated with the KBP

1 and 2	26%
3	42%
4	44%
5 and 5*	41%

- 56% previous HE collaboration
 - 30% with same HEI
 - Of these, 20% with new department
- Largest & smallest
 - More likely to have collaborated previously
 - more likely to collaborate with research intensive
- Least research intensive tend to be new collaborations



Technical and commercial objectives



→ Significant numbers did not meet technical or commercial objectives

- Smaller do better
- Prior collaboration improves technical success
- RAE grade no relation to commercial success, inverse relationship to T/O and employment

Business performance & other impacts

Impacts (actual and expected)

Increased overall sales	59%
Increase in overall value	57%
Increased profitability	57%
Increased sales in existing domestic markets	56%
Increase in value of assets	46%
Started exporting or increased export sales	44%
Opened up new domestic markets	42%
Increase in the number of employees	41%
Reduced operating costs	35%
Increase in income from Intellectual Property	28%

Other benefits (actual and expected)

Technological knowledge / skills	99%
Quality	73%
Investment in R&D and innovation	77%
Any increased networking	78%
Delivery times	19%
IP	22%



Associates

- 54% took permanent employment with company
- Almost 25% offered post but rejected offer
 - Salary
 - Wanted wider experience
 - Most gained another post within one month
- Experience valued
 - Relating technology to business
 - Project management, presentation and reporting
 - Business awareness
- Evidence that above average salaries post-TCS – especially for youngest Associates



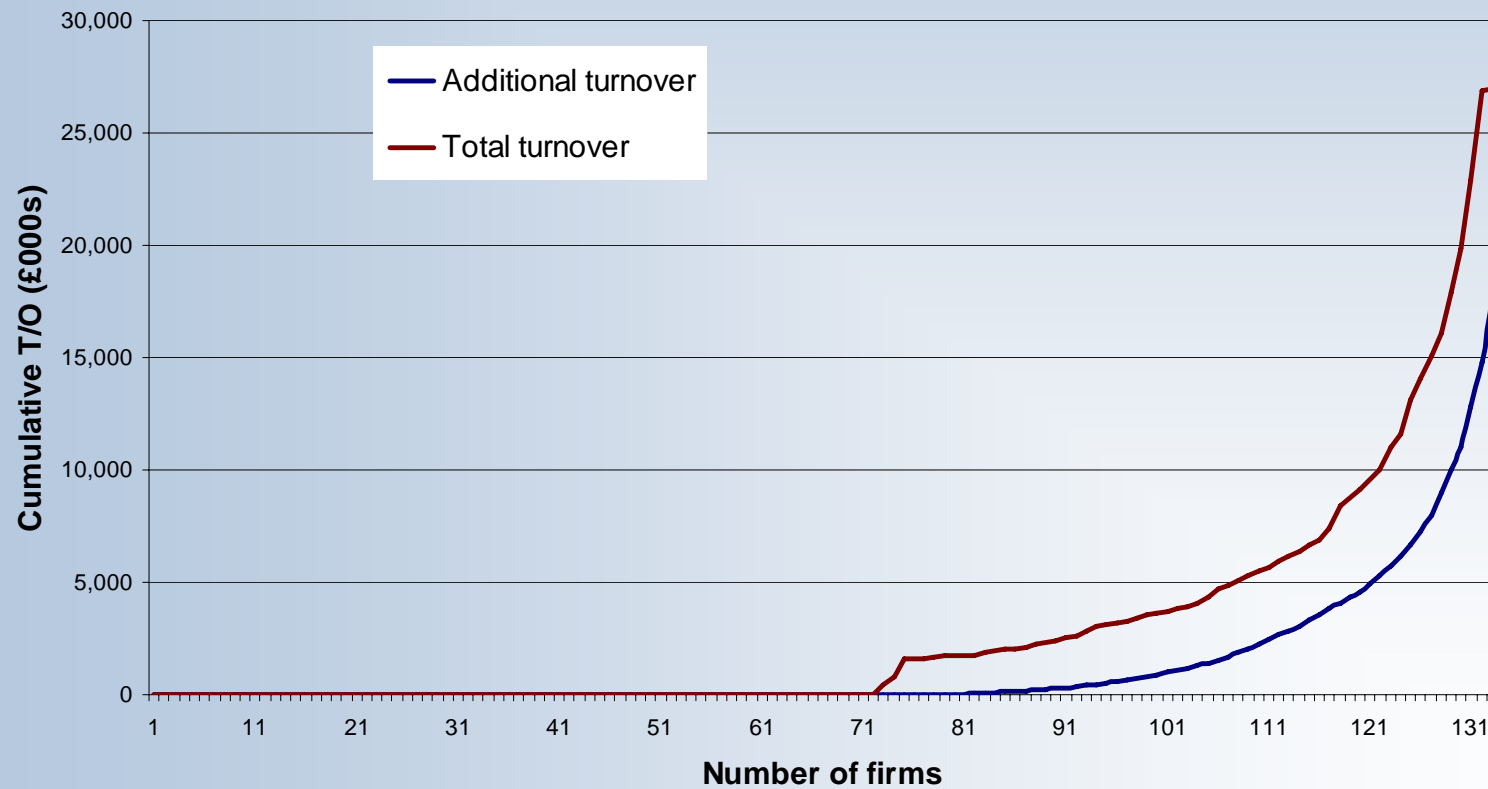
Economic impacts

- After allowing for additionality and displacement
 - Grant per job: £182,000 - £189,000
 - Ratio of grant to increased turnover: 1:0.83 – 1:0.87
- Compares poorly with some other programmes, but:
 - Programmes recently completed
 - Many aimed at process improvements
 - Continued added value by Associates not captured
 - Wider (and longer term) benefits not valued



Evaluation issues: Concentration of benefits

Turnover attributable to TCS



Evaluation Issues: Comparisons with other programmes

- Implies that similar topics are explored, but:
 - Which topics?
 - Can divert from programme specific issues
- Are methodologies equivalent, and replicable?
- Difficulties in valuing some types of benefits will impart systematic bias



Evaluation issues: The counterfactual

- Participants are self-selecting
- Control group is usually problematic
 - How to control?
 - Non-beneficiaries participation in evaluation
- DTI's efforts to assemble population data could be extremely valuable

