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Academic Expertise for Business: Final Programme Evaluation

Summary

1. Introduction

- 1.1 CM International (CMI) and The Innovation Partnership (TIP) were appointed by the Welsh Government (WG) to undertake the final evaluation of the Academic Expertise for Business (A4B) programme. This report provides details of the evaluation findings, and considers project activity in the period December 2008 to December 2014.

The evaluation has been carried out prior to the project's closure (in line with the required evaluation timetable) and does not consider any monitoring or spend data after the end of December 2014. As a consequence the reported outputs, spend and impacts should be considered as provisional.

- 1.2 The objective of the final evaluation is to assess the achievements of the programme, its management and delivery, impacts, value for money; and provide recommendations for future delivery.
- 1.3 The methodology employed includes analysis of project monitoring records, interviews with Higher Education (HE) and Further Education (FE) institutions, surveys of staff /academics and businesses. A workshop with the A4B management and delivery team was also undertaken, alongside case studies of nine projects.
- 1.4 The A4B programme was delivered on a pan-Wales basis, with the aim of strengthening and maximising the capabilities of higher (and where appropriate, further) education institutions to support businesses through knowledge transfer, and the commercialisation of research and encouraging the development of innovative technologies. The programme comprised two separate European projects - Knowledge Exploitation Capacity Development (KECD) and the Knowledge Transfer and Collaborative Industrial Research (KTCIR), and was intended to:
- Improve on current capabilities and build on new innovative methods of operation piloted previously.
 - Provide a simplified, single, strategic and integrated approach to knowledge transfer funding support and academia.

- iii. Provide a coherent development platform to enhance the provision of both financial and technical support to academia as the programme moves forward.
 - iv. Continue to build on the collaborative approach to funding Knowledge Transfer by Higher Education Funding Council for Wales (HEFCW) and the WG Department for Economy, Science and Transport (ES&T).
 - v. Support the cross-cutting themes of the European Regional Development Fund (ERDF) Operational programme by developing new knowledge and technologies and systems which will impact on environmental sustainability, and working with the HE and FE institutions to support equality and diversity strategy development.
- 1.5 It responds to identified needs to strengthen Research and Development (R&D), innovation, and knowledge transfer, in Wales. The programme's integrated support was targeted at particular 'strand' activities in the first half of its delivery, including IP commercialisation projects (e.g. feasibility projects), Knowledge Exchange Networks, Knowledge Transfer Centre (KTC), Collaborative Industrial Research Projects (CIRPS). In the second half of the programme the explicit strands were removed, and the programme moved towards a more open and flexible model of delivery, in which an open call was made for projects meeting the overall objectives of A4B.
- 1.6 The programme was intended to address the cross-cutting themes of environmental sustainability and equality and diversity, through the production of 'hearts and minds' documentation, training for the delivery team and periodic review of the approach adopted. The agreed project budget for the full period was £32.6 million (KECD - £11.6 million and KTCIR - £20.9 million). This budget was re-profiled in 2014, and represented a decommitment of some £18 million in the original budget. This followed a lower than anticipated programme demand.
- 1.7 The programme was managed by a central team within the Welsh Government's Innovation Department. This included support for the development of projects (development managers), appraisal of projects (appraisal and assessment panel), and validation and monitoring (monitoring of financial data, outputs and the project's progress).
- 1.8 The programme funded a total of 255 projects to December 2014. This included 161 KECD and 94 KTCIR. A further 100 projects were funded outside the Convergence area. All of Wales' HEI and nine FEIs received funding from the programme, with HEIs accounting for the largest proportion of projects (86%). The KTCIR was the largest project by expenditure value with activities such as KTC and CIRP accounting for £15 million and £10.2 million of the budget respectively. Grants ranged from £5 thousand to £2 million.
- 1.9 Total project expenditure to December 2014 was £30.5 million (KECD £10.3 million, KTCIR 20.1 million).

2. Key findings

Final outputs to December 2014

- 2.1 Against its main performance indicators to the end of December 2014 the programme achieved mixed performance, with strongest outputs found in its innovation-related outputs: collaborative R&D activities, products, processes and services registered and launched, and investment induced. Both projects, however, are below many of their agreed targets. This is particularly evident in the KECD project, where core economic impact outputs, such as jobs created, are substantially below target. Perhaps the most successful performance against target is in relation to investment induced as a result of A4B. This has achieved more than

£20 million in funding, and points to A4B supporting further R&D activity, and reducing the risk for subsequent investors and funders. Output indicators for the cross-cutting themes are all below the target, with no evidence that the business plan activities were implemented.

Beneficiary experiences and achievements

- 2.2 The results of the fieldwork suggest that the project beneficiaries were generally satisfied with the programme, viewing it as an important source of funding for knowledge transfer and exploitation, building on the legacy of previous supports in Wales. Such activity is becoming more important to HE stakeholders, with the Research Excellence Framework (REF), and highlights the ongoing importance of this type of funding.
- 2.3 The surveys revealed a strong level of prior collaborative R&D activity on the part of both academic and businesses. In this respect many A4B projects helped to build on pre-existing staff capacity. Achievements identified include development of new products, processes and services, jobs, sales and new collaborations. They also reveal benefits for both academic and industry partners. Academics and other staff, for example, point to improved skills, linkages to, and understanding of industry needs.
- 2.4 Many of the new products, processes and services developed with the aid of A4B remain under development, with partners anticipating that the collaborative R&D process will help to produce future commercialisation in the coming years.

Impacts achieved

- 2.5 The results of the evaluation research indicate the role of A4B in producing both actual and potential economic, innovation and environmental impacts. This includes supporting projects that address a range of key challenges in areas such as health and renewable energy. The full scale of the programme's impacts are, as noted above, partly dependent on the ability of the institutions to sustain the collaborative R&D and commercialisation capacity (including the business partnerships, centres and so on), and for the results of the project activity supported by external funding to be successfully commercialised. These areas represent long-term processes, and highlight the likelihood that many outcomes will occur after the formal end of the programme. At the end of the programme, however, the following economic impacts can be identified:
 - £30.5 million net additional GVA
 - 586 net additional FTE jobs
- 2.6 A4B has also supported environmental sustainability through its support for new products, processes and services in key areas such as reduction of greenhouse gas emissions and renewable energy.

Value for money

- 2.7 Project expenditure, at the end of programme point (December 2014), was £30.5 million. The approved funding for the programme - £32.6 million – had some £18 million of funding decommitted to account for the lower than expected demand. Active steps have been taken throughout the life of the programme to ensure economy in its delivery.
- 2.8 The programme's delivery efficiency was strongly influenced by external policy and economic context changes. This required it to evolve its delivery approach over the programme period, and respond to the needs of instructions and emerging lessons. This flexibility has enabled the Welsh Government's management team to learn lessons (e.g. the best approach to managing calls) and improve delivery efficiency over the course of the A4B programme.

- 2.9 Key challenges faced by the programme, and noted by programme staff and participants, concern the administration and monitoring elements of the programme. These aspects of the programme are generally recognised as being shaped by both the size of the programme, its complexity and the requirements for European funding.
- 2.10 The A4B delivery process has continued to evolve and adapt to changing circumstances. The evaluation research and, in particular the discussions with both A4B staff and partners of the programme, identified areas where the overall efficiency of the delivery process should be considered. These included balancing the need for flexibility in calls for proposals and the efficient allocation of A4B development manager resources, the composition of assessment panel, the format of project contacts and structures of review meetings, smoothing out the claims handling process, and taking steps to agree indicator and eligibility definitions early on in future programmes.
- 2.11 Against the original objectives of the programme the results of the evaluation suggest that the programme has contributed, with evidence found in relation to:
- Capabilities in support of the knowledge transfer and commercialisation process.
 - Investing in collaborative R&D.
 - Embedding innovation awareness and attitudes.
 - Developing new products, processes and services.
 - Producing wider multifaceted impacts (economic, social and environmental).
 - Building and strengthening collaborative linkages.
 - Producing HE and FE benefits.
 - Producing environmental sustainability through the introduction of new products, processes and services.
- 2.12 A key feature of these benefits, however, is that much of the activity supported by the programme requires further funding and development work to achieve full commercialisation. This is consistent with the long term nature of the R&D process, and highlights the potential for future benefits to emerge, after the end of the programme.
- 2.13 Achievements against the cross cutting themes is an area of programme weaknesses, with limited activity in support of the business plans for these themes. Recent efforts have, however, been undertaken to address this output's weakness, with discussions taking place with specialist providers of cross-cutting themes support.

Strategic added value and sustainability

- 2.14 The evaluation suggests that the A4B programme has made important contributions to Strategic Added Value (SAV) in Wales, helping to catalyse knowledge transfer and exploitation activity in Wales, helping to support the activities and wider agenda of key organisations such as HEFCW and Finance Wales (in addition to giving expression to the Welsh Government's own strategies for Science and Innovation). Its activities also highlight strong synergy with both Welsh Government support such as Innovation Vouchers, as well as the wider support available at the UK and European levels (e.g. Innovate UK collaborative R&D funds, Research Council knowledge transfer funds and EU Research and Technological Development Framework funds).
- 2.15 The sustainability of the A4B programme is currently subject to an application for ERDF funding (Priority 1) for the 2014-2020 programme. The view of the stakeholders interviewed / surveyed as part of this evaluation, however, suggest there is a clear and ongoing demand for A4B-type funding in Wales' HE and FE institutions, and businesses. In this respect the support provided by the programme was felt to be central to provide knowledge transfer and

exploitation activity in Wales. Sustainability of the projects funded by the programme is less certain, and will also depend on the success of projects in attracting future funding.

- 2.16 Many stakeholders recognise that the Welsh Government intend to target future support on a smaller number of centres and projects. This is in line with the targeting approach identified in Innovation Wales (smart specialisation).

3. Recommendations

- 3.1 The findings highlight a number of lessons and recommendations relating to future support for knowledge transfer and knowledge exploitation in Wales:

Recommendation 1: Welsh Government should continue to fund knowledge exploitation and knowledge transfer activity with a strong focus on collaborative R&D.

- 3.2 The research findings indicate that without A4B-type funding, much knowledge exploitation and knowledge transfer activity would not take place. This is due to the lack of other forms of funding, and the inherent 'risky' nature of the R&D process. The evidence suggests that collaborative R&D projects and knowledge transfer centre activity are areas which have the potential to produce greatest impacts. Here the potential for innovative models of funding such as the Fraunhofer-type model (1/3rd industry, 1/3rd government and 1/3 competitive funding) may provide a mechanism to target future funding on key areas of expertise, existing capabilities, and societal challenges should also be considered.

Recommendation 2: Welsh Government should balance the needs of larger and smaller HE/FE institutions in Wales when designing future funding programmes for knowledge transfer and exploitation.

- 3.3 Here, the findings indicate differing capacity and delivery needs of smaller and larger institutions, and HE and FE institutions in Wales. Institutions, on balance, value the less restrictive approach to project funding, in which project applications can be developed to meet both the overall objectives of the programme, and can be shaped to maximise outcomes. It will be important that a balance is sought, however, between an open and restrictive approach, and ensuring that more defined funding formats (e.g. strands or sub-projects) are used to address challenges faced in engaging smaller institutions (FE and HE). This should consider the potential for FE institutions to support SMEs with current technologies. Likewise, consideration should also be given to supporting large firms, SMEs and start-up businesses to develop future technologies.

Recommendation 3: Welsh Government should continue to develop strong working relationships with Wales' HE and FE institutions, underpinned by robust communication mechanisms.

- 3.4 Here, communications between Welsh Government and the institutions have, on occasions, been challenging with reports of multiple contacts and contact points in both HE and Welsh Government, leading to 'mixed messages'. These instances are, in part, linked to the centralised structure of the programme, and the multiple level of Welsh Government contacts required to deliver a project. In future Welsh Government should examine the potential for a designated case officer role (either a development or validation team member) to allow for project managers and academic partners to be clearly directed on key issues and queries. It should also consider the introduction of periodic institution-level A4B project case review meetings involving the commercial/industrial liaison officers, plus project managers

appointed by the institutions and the relevant A4B development / A4B case officers for the institution.

Recommendation 4: Stronger synergies between the support programmes of the Welsh Government's Innovation team should be established.

3.5 While the A4B programme has arguably produced a strong level of strategic added value, with its integrated approach and alignment with other strategic priorities (Innovation, Science and so on) and support (e.g. HEFCW), there is significant potential for it to encourage delivery synergies between its core innovation programmes for business R&D and knowledge transfer. This should ensure that there is potential for providing 'follow-on' funding routes and maximising the potential for commercialisation outputs to be achieved from business innovation and collaborative innovation projects.

Recommendation 5: Project appraisal should introduce a greater degree of independence

3.6 The appraisal of projects through an assessment panel helps to bring together a range of expertise and perspectives to advise on funding decisions. While HEFCW represented the main 'independent' panel member in the life of the programme, it would be beneficial to add to this independent membership, particularly where there is likely to be significant financial support or investment packages to be approved.

Recommendation 6: Future projects should ensure a greater focus on smoothing out the flow of new project applications.

3.7 Here the appraisal process employed by A4B faced substantial challenges to manage and respond to the flow of projects. Efforts have been made throughout A4B to improve the efficiency of this process (e.g. greater 'early warning' from development managers). It will be important that any future programmes examine ways to further improve this process through clearer communication with project applicants on when projects are due for discussion by the panel, or the use of an electronic appraisal process for smaller projects.

3.8 Minimising the peaks (or bottlenecks) in applications should also help to stretch resources in the development team. In this respect consideration should also be given to setting specific numbers of development manager hours or days for individual projects.

Recommendation 7: Communication should be underpinned by modern monitoring technologies and systems

3.9 The IPM system employed to collect monitoring data lacks the functionality associated with more modern systems, including limited flexibility and difficulties in flexible data extraction. Both HE and FE institutions view the IPM system as being 'out of date'. Addressing this will help to improve the overall delivery efficiency of future programmes (and contribute to recommendation 3).

Recommendation 8: Future programme monitoring should be structured to ensure efficient claims processing and collection of data.

3.10 Monitoring is a particular challenge for a large, integrated, programme such as A4B. In the course of the programme the A4B team experienced substantial challenges in managing the claims process effectively, with substantial peaks and troughs associated with fixed claims dates. In this respect consideration should be given to setting claims dates in relation to actual project start dates.

- 3.11 Improving the monitoring interface with key project partners is a further area where efficiency could be improved, and will help to better understand project activity and achievement. This is likely to benefit from establishing a direct monitoring interface with project partnerships in future. Other efficiency areas include the early clarification of indicators and eligibility. This will help to ensure clarity with project partners, and the avoidance of redundant data collection.

Recommendation 9: Future innovation programmes should address the cross-cutting themes primarily through their support for innovative projects in the area of environmental sustainability and equality and diversity products, processes and services.

- 3.12 The findings from the evaluation indicate that the programme has faced difficulties in addressing the cross cutting themes objectives and targets for raising awareness via the institutions and signposting businesses to support. They do, however, illustrate how the primary activity of the programme – development of new products, processes and services – has contributed to key areas such as renewable energy and reduction of emissions, and social processes. In this respect the focus of some projects on addressing societal grand challenges indicates a way in which future programmes can be structured to support the cross-cutting themes.

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Views expressed in this report are those of the researchers and not necessarily those of the Welsh Government

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