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The Importance of the UK Government Involvement with Business and Academia through a Challenge-led Initiative

PoliUniBus Project

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Summary

Whereas UniBus focused on enabling and enhancing direct academia-industry collaboration, the PoliUniBus scope extends to include also the roles of *governments, civil society*, and the overarching context of the *natural environment*. The natural environment is an important inclusion in the model as a typical source of societal grand challenges such as climate change, or other Sustainable Development Goals. There is a view suggesting the formation of “participatory architectures” as a contribution for pragmatically tackling grand challenges as a novel form of *robust action*, i.e. strategic actions that produce a balance between retaining alternative open paths without over committing to specific outcomes, while simultaneously maximizing value created given present choices. A methodology for guiding policymakers through platform encouraging cross-sector participation seemingly fits the framework consider for the PolyUniBus. Grand challenges are often characterized as “wicked problems” whose resolution requires efforts at the system level, hence a *systems thinking* approach is necessary to understand the interconnections and trade-offs across the value dimensions. The quintuple helix model proposed in IO 2 report entails developing an understanding at multiple embedded system levels, so that the developed methodology guides decision-making in a way conducive to system.

The first task in IO 3 is to find out how the system of funding works in each partner country. How project are funded and how they are assessed. The latter would make contribution to IO 4. The next task is to review the existing mechanisms as to how business and academia make contributions to the government and hence funding bodies’ policies. The intention is see how ideas can be reviewed and supported at each apex of government-business-academia triangle and how PolyUniBus can make the system more effective and efficient.

This report concerns only how the system of funding works in the UK particularly now that the UK has left the EU. It is hoped each partner would do the same for their own country, which at this moment in time probably is not that different from the UK.

UK system of support



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There are good mechanisms in the UK to assess academic research (Research Assessment Exercise (RAE) and now replaced with Research Excellence Framework (REF) and as a good means to assess quality of teaching viz., Teaching Quality Assessment (TQA) which is now replaced with the Teaching Excellence Framework (TEF). With the advent of Brexit currently there are really no programmes to replace the EU funding mechanisms which were supplementing the Research Councils funding and other funding bodies such as UKRI. C4FF was involved in setting up the Application of Computing in Manufacturing Engineering (ACME) which later transformed into InnovateUK and now known as UKRI. C4FF was also involved with establishing Teaching Company Scheme (TCS) and Teaching Company Centres. The TCS was based on an earlier system used in NHS and was a formidable scheme which was the only mechanism in the UK that brought the Universities in contact with SMEs in an effective way and helped graduates involved to find worthwhile and meaningful jobs. C4FF was particularly keen on TCS and later with the Manpower Services Commission (MSC) work under the auspices of the then Employment Department. A good example of the system I put in place can be found at http://www.c4ff.co.uk/history/awards/Eurotecnet_project.pdf.

It is quite apparent that at the moment apart from our RC's and UKRI programme we do not have a comprehensive strategy to replace the EU funded programmes and its efficient and effective performance assessment system. The EU assessment system is fair and well established based on best practices developed from EU member states previous experiences. I have been involved with the UK Government Education, Research and innovation initiatives and a review of my organization's websites clearly shows that the EU funding model make sense as it was developed from all the previous Education Research and Innovation programmes; all education and innovation programmes are now grouped and placed under the Erasmus+ programme and that all Research and Development programmes grouped under the H2020 including the Factories of the Future programme (FoF) which C4FF initiated in 1979 referred to Intelligent Manufacturing Systems (IMS) initially which led to development the manufacture (www.manufuture.org) and later MariFuture (www.marifuture.org). With support from the then DTI C4FF organised a series of conferences under the banner of Manufacturing Technology (ManTec). See for examples given in the following links:

http://www.c4ff.co.uk/history/papers/Supporting_The_Government_in_Industry_Academia_Collaborations-Mantek_Conferences.pdf or http://www.c4ff.co.uk/history/papers/Rover_Partnership.pdf or http://www.c4ff.co.uk/history/papers/Establishment_of_Manufacturing_Centres_and_Sample_Conference.pdf)

C4FF was one of the UK 10 top technology projects (UK Tecnet) which was included in the first batch of EU EuroTcnet and later became one of the most sought after projects in the EU viz., Factories of the Future (FoF). The complementary impact of European Regional Fund (ERDF) as well as the European Social Fund (ESF) was crucial to the development of multi-faceted projects where a country could set up a strategy for the developing major programmes simply because it was possible to seek funding from different funding mechanisms, buildings from ERDF, social engineering from ESF, Research from the Framework programme now H2020, for education and innovation from the programmes now included in Erasmus+. Did you know that one of the most valuable programmes to SMEs has been different Key Actions 2 and 3 of the Erasmus+ programme? The Erasmus+ is not just



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for student exchange but a whole range of initiatives. While Erasmus+ includes student exchange programmes ([Mobility](#) (Key Action 1)) it also provides several opportunities for funding education, research and innovation initiatives ([Cooperation for Innovation and Exchange of Good Practices](#) (Key Action 2); [Support for Policy Reform](#) (Key Action 3) and there are also two separate areas of the programme for [Jean Monnet](#) activities and [Sport](#).

There are two major EU programmes which are of particular interest to the UK>

HORIZON 2020 (H2020)

Horizon 2020 is an EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020). The UK has secured €5.5 billion of funding to date (13.5% of the total).

Horizon 2020 couples research and innovation, focusing on excellent science, industrial leadership and tackling societal challenges. The UK and EU's intention is that the eligibility of UK researchers and businesses to participate in Horizon 2020 will remain unchanged for the remaining duration of the programme. This has been agreed as part of the Financial Settlement which was signed-off by both UK and European Commission negotiators in a draft Withdrawal Agreement and welcomed by the other 27 EU countries at the March European Council.

Horizon Europe

The UK will associate to Horizon Europe. Association will give UK scientists, researchers and businesses access to funding under the programme on equivalent terms as organisations in EU countries. The next step is for both sides to formally adopt the full text of the agreement taking into account the finalised EU Programme Regulations.

[Find out more about the agreement.](#)

Horizon 2020- UK organisations can continue to participate in Horizon 2020 programmes and receive EU grant funding for the lifetime of individual projects. This includes projects finishing after 1 January 2021. Successful UK bids will continue to receive grant funding from the Commission. This includes calls that end after 1 January 2021. A small number of UK projects involving EU-restricted information may be unable to continue in their current form. The Commission will inform the affected participants.

Clearly the fact that the UK organisations can participate in Horizon 2020 is great news. Let us hope the UK will continue supporting it or support what will come after it. This is because Horizon 2020 aims to ensure that Europe produces world-class science, and that it removes barriers to innovation and making it easier for public and private sectors to innovate together.

Erasmus+



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Key actions 2 and 3 have been discontinued in the UK and a new programme called Turing has been initiated in its place. Turing programme deals with part of the Erasmus+ students exchange programme and there are currently no provisions to support key actions 2 and 3 activities/proposals.

C4FF is in contact with UK government ministries and agencies and hopes that either the new programme Turing or a new programme will be in place to replace Erasmus+ key actions 2 and 3.

The UK is still able to take part in many programme EU and UK support such as EuroStar.

Furthermore, the government effort in establishing Industry Leadership Councils which have now been either discontinued or renamed were crucial in setting up strategies for a whole sector or industry for instance Maritime Industry Leadership Council (MILC) helped to match capacity/capability for the future development of the UK maritime sectors. The scheme was so successful that the EU replicated the model and set up several of these for several sectors/industries leadership alliances.

It is hope that the UK would put a greater effort in supporting the SMEs now that the UK has left the EU. The well-being of SMEs is crucial to the future of the UK industrial base; to date most efforts in supporting SMEs has been ad hoc and not very effective. SMEs do not have the resources to find out more about government funding and almost exclusively preoccupied in running the business and stay solvent.

C4FF believes the scheme known as EUREKA should be fully supported. Recently the Government announced that BEIS has secured a £30 million financial uplift for EUREKA funded projects for the period 2018 to 2020 which is viewed not to be enough to replace H2020 and Erasmus+.

C4FF view of industry and academia relationship is well known and can be reviewed at http://www.c4ff.co.uk/history/papers/The_Chair_views.pdf. The view is based on the fact that we need to bring the two worlds of business and academia together. It has to be realised that the interests which business has in wishing to establish or improve links with academia are different from those of the academia, and may not always be compatible. The educationalists can aspire to be altruistic; business people can only afford to be altruistic when they have made more than enough money for the maintenance and development of their businesses. This is not a moral judgment – it is a pragmatic one. Academia needs the industry to support it in the development of its programmes so that they can identify and respond to the needs of industry and commerce. It needs industry to seek funds to progressively develop its laboratories, and it needs industry to develop its staff members. Industry needs academia to improve the quality of its employees, present and future; it needs academia for technological progress useful to business, and to better manage its business; it needs academia for the formation of its future customers, and so of the demands for its products and services (Ziarati, 2016). The UniBus and now PolyUniBus is a powerful university-business platform to bring policy makers, industry and academia together. A summary of the latter project is given at <https://www.marifuture.org/Projects/Projects.aspx>. It is hoped that the UK Government will help us to use the UniBus platform and adapt the output from the PolyUniBus to



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encourage greater interactions between universities and business. The importance of UniBus is not the Platform's sophistication but its focus in promoting SMEs. SMEs do not have resources and are too busy making a living and keeping their heads above water. When we developed IMS, the Japanese adapted it wholesomely and when FoF was developed the EU set up a comprehensive system to adapt it Europe-wide and help C4FF set up several centres throughout the EU.

C4FF has been supporting the houses of parliament and with support from Lord Strachan developed the first Hybrid car in the UK some 30 years ago

http://www.c4ff.co.uk/history/papers/Emerging_transportation_system.pdf;

http://www.c4ff.co.uk/history/awards/National_Diploma-Hybrid_Vehicles.pdf;

http://www.c4ff.co.uk/history/awards/Design_and_Use_of_Hybrid_Vehicles_National_Prize.pdf).

C4FF believes, based on its experience, the UK system will remain formidable if we incorporate the current EU programmes such as ERDF, ESF, H2020 and Erasmus+ and their assessment system into it.

PolyUniBus is a project that could help C4FF to bring the policy makers, business and academic together where it matter most viz., the support for bright ideas and their realisation through several well established processes. Through C4FF student project work C4FF intends to review the arrangements for students and academic staff involvement in joint projects and ensure that PolyUniBus is fit for its purpose. The knowledge of UK and EU assessment project systems could also contribute to IO 4 development. C4FF has its own system of project and product assessment which could help in developing the assessment system envisaged for IO 4.