Proof of Concept Funds – Rationale and role

**Headlines**

- PoC funding is usually intended to close 'the valley of death' gap.
- There is no 'one size fits all' approach to PoC programmes.
- PoC programmes need to be customised with clear objectives.
- PoC funding can generate social as well as economic impact.

**Policy context**

Proof of Concept (PoC) can be defined as 'the stage during the development of a product when it is established that the product will function as intended', yet the demonstration can vary significantly. PoC funding objectives are often closely associated with bridging the 'gap' between traditional funding for research in public research organisations (PROs) and private enterprise finance for product and service development. Such funding is needed to ensure that a broad range of technology transfer (TT) activities are financed, and to increase the capacity of researchers and intermediaries to identify a robust route to markets and to build a strong commercialisation strategy.

Often PoC has a more specialised meaning, linked to the development of a technology or know how across the Technology Readiness Level (TRL) Index, initially set up by NASA to evaluate early stage technologies according to their readiness level and vastly utilised as a 'barometer' of PoC development. In sectors characterised by soft Intellectual Property (IP) rights such as copyrights-based ideas and products (digital, software, arts) the PoC is often brought down to the concept of creation of a Minimum Viable Product. Despite varying terminology, a clear commonality among the sectors is that PoC involves an activity requiring resources, and that such resources have historically been scarce, given the high development risk.

**Key conclusions**

The landscape for PoC funding have changed during the past few years, with more money available at regional level and related to smart specialisation strategies. Multiple new transnational funding schemes and networks with an element of PoC, such as technology transfer funds, accelerator funds and innovation funds have been set up. However, many have been pilot run or established as short-term facilities. Hence, the total funding within PoC activities is difficult to estimate, due to lack of measurements and statistics as well as due to the wide range and dispersion of funding sources.

In terms of capital structure, the majority of PoC funds are built on the basis of grants with no (or limited) expectation of payback. In some cases, grant contributions can be converted into loans or equity. Often PoC funds require matched funding for a grant or investment to be disbursed, as this can show commitment from the beneficiary.

The links between public sources of PoC funding and the next stage private seed/VC funding are important, and can be strengthened by certain activities such as networking events and access to online data on funded projects. Closer links would help greater flexibility in allowing successful

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Quick guide

PoC funding aims to bridge the gap between traditional funding for research in PROs and private enterprise finance for product and service development, to ensure financing of a broad range of TT activities, robust routes to markets and commercialisation.

Recent developments show multiple new transnational funding schemes, however, many schemes have only been pilot run or short-term. The typical funding size averages between 30K and 50K€ and sources of funding vary greatly.

There is no 'one size fits all' approach to PoC structures and processes. Thus, PoC programmes need customisation and a clear objective in order to generate societal and economic impact. The JRC is involved in PoC projects aiming to bridge the 'valley of death' funding gap in early stage projects in South-East Europe.

grant applicants to use provisional public funding approval to help leverage and secure private funding and follow-on investments. Typical funding size for PoC averages between 30,000€ and 50,000€ per project, with less than 10% of the projects requiring over 100,000€.

There is no 'one size fits all' approach to PoC programmes, their structure and processes, often such schemes depend on the nature of the sponsor, the economic structure of the jurisdiction and the availability of similar or complementary products in a given geography. Thus, PoC programmes need to be customised with a very clear objective, which funding gap these are going to close and how, which makes them risky and often time-limited ventures. PoC funding can generate societal as well as economic impact.

Main Findings

There is a lack of Europe-wide statistics available for the number of PoC funds across the continent. A 2009 UK study demonstrated there were around 50 national, regional and institutional PoC dedicated funds in the country, yet the total amount of funding is difficult to estimate. There are various sources of PoC funding, including business angels' investments, charity contributions, national and EU-wide translational research schemes etc.

Management and implementation of PoC programmes largely depend on the funding sources. Larger companies commonly use internal funds for PoC activities falling within their core business but if the activity is more innovative/higher risk, they tend to appreciate external PoC support. Smaller companies with less available resources, often rely on securing external funding as the only way forward. A number of PoC schemes are implemented by or in collaboration with universities, who usually manage PoC schemes internally yet funding is typically external. Implementation structures for various PoC programmes across Europe vary, as seen by the comparison between programmes in Switzerland, Germany, Sweden and the EU.

Regarding PoC programmes success rate, there is variation depending on size, experience and network of the organisation. Companies working in close collaboration with other organisations have higher chance of successful PoC realisation. Once funding has been secured, a number of factors are important for the successful implementation including, *inter alia*, the idea, the existence of PoC coaching and/or commercialisation support, and the use of clear milestones.

Related and future JRC work

The JRC has been involved in conceptualising a PoC scheme that aims to provide a solution to the 'valley of death'/gap in funding of early stage projects in South-East Europe, with 20-50k€ per project granted to PROs, universities and SMEs. The program will be funded by DG NEAR while implemented with support by JRC Unit I.04. It aims to increase innovation capacity and identify routes to commercialisation, as well to encourage knowledge exchange and TT for societal and economic benefits.

The JRC Unit I.04 has also held a Workshop on Proof of Concept in South Eastern Europe on 21-22 September 2017 in Trieste, Italy. The workshop explored best practices in the creation and management of PoC support programmes.