



Avoiding the valley of death: Venture capital involvement in innovation procurement

Egli Rrokaj

Corvers Procurement Services BV

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Agenda

1. Introduction to Innovation Procurement and VC
2. PREVENT PCP contribution
3. Gaps in the Innovation Pathway
4. Contribution of VC Investment in Innovation Procurement
5. Benefits and Costs of VC Involvement
6. Schemes in Place
7. Observations and Future work





1. Introduction to Innovation Procurement and VC



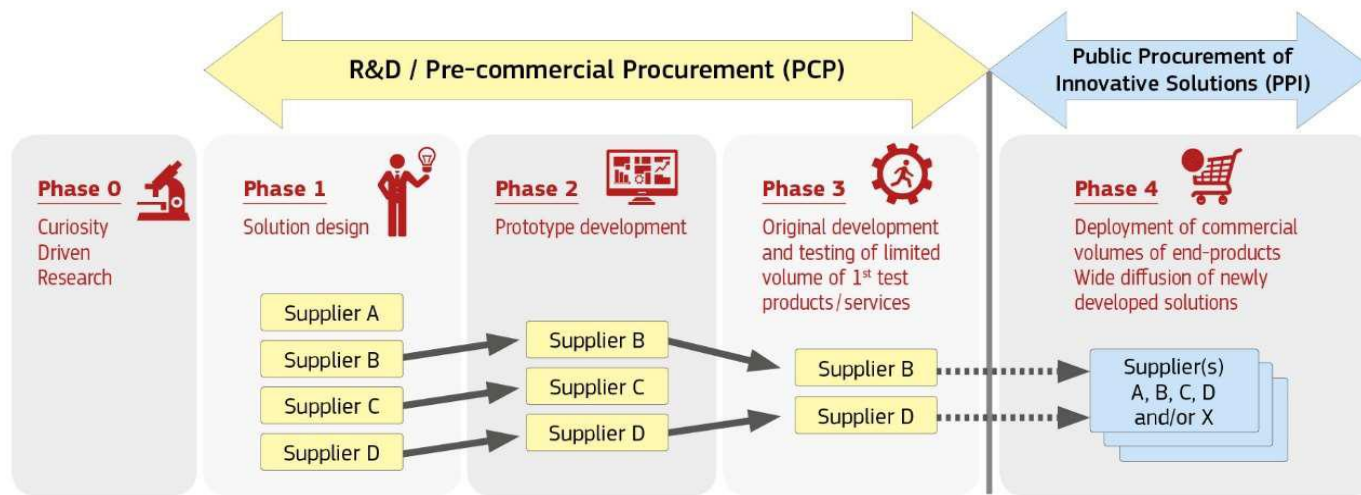
VC definition

VC stands for "Venture Capital." It is a form of private equity financing that investors provide to startups and small businesses with high growth potential. Venture capitalists are individuals or firms that invest money in these early-stage companies in exchange for an ownership stake.

- **Venture capital can take various forms depending on the investment focus, stage, and industry preferences of the venture capital firm.**
- **Types of VC include:**
 - Corporate Venture Capital
 - Private Venture Capital
 - Public Venture Capital
 - Angel Investors
 - Stage-Specific Venture Capital
 - Industry-Specific Venture Capital



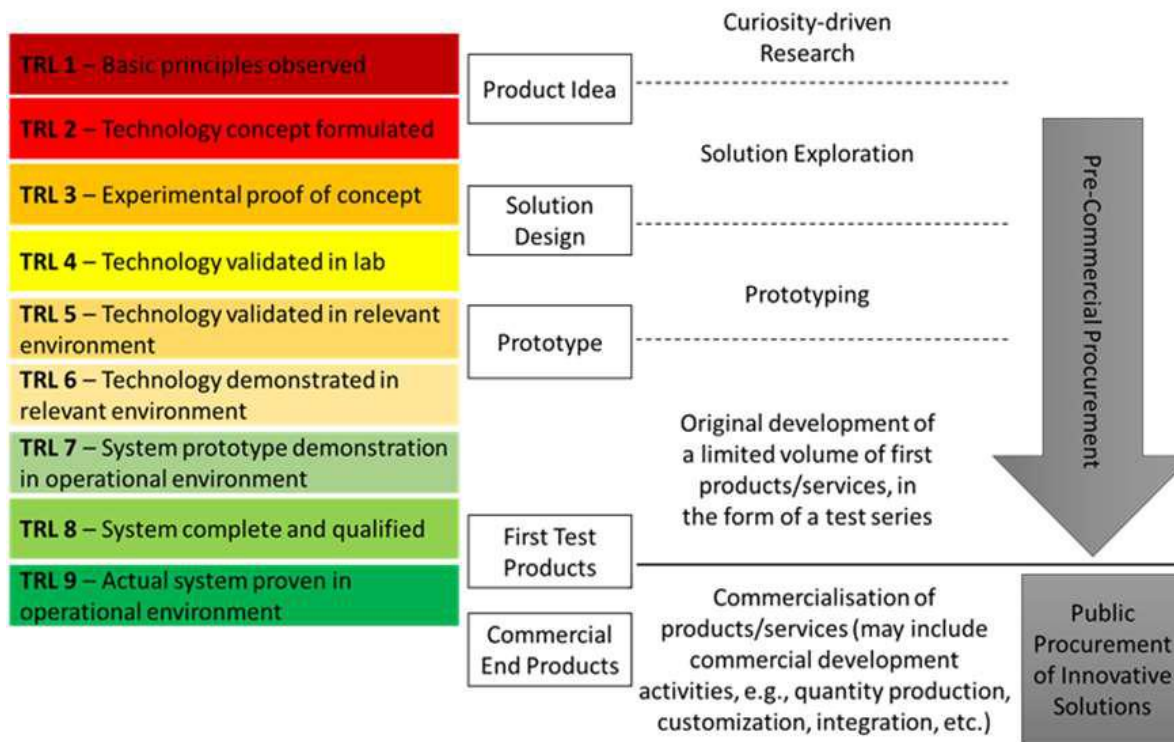
Innovation Procurement happens when public buyers acquire the development or deployment of pioneering innovative solutions to address specific mid-to-long term public sector needs.



- PCP (pre-commercial procurement)
- PPI (public procurement of innovative solutions)

Source: European Commission

TRLs and Public Procurement of Innovation





What is in it for demand and supply side?





2. PREVENT PCP contribution



Operation

The main goal of the PREVENT PCP (GA 1 01020374) project is to improve safety and security in both public transportation and public areas.

- **Approach:** Procure innovative technologies via Pre-Commercial Procurement (PCP).
- **Objectives:**
 - Detect potentially dangerous unattended items automatically.
 - Identify and track perpetrators.
 - Implement an advanced crisis management system.
- **Collaboration:** Involved 23 partners, including 11 public buyers from 6 EU countries.
- **Current Stage:**
 - Four (4) contractors selected for Phase 2.
 - Aim: Develop their first working prototype.



Operation

- **VC Involvement Inquiry:**

- Explored Venture Capital (VC) involvement from the supply side.
- During the OMC specifically asked participants about VC support.
- 30% of companies were SMEs, and 10% were Start-ups/spin-offs.

- **Interest in External Support:**

- 35% of responders expressed interest in external support.
- Support for developing and commercializing their PCP solution.

Backers

PREVENT PCP has been launched to develop novel technologies with the purpose of pre-empting attacks on public transport.

Aim to combat fragmentation in the European security market.

Most importantly, PREVENT PCP acts as a pilot to understand the benefits and the challenges of engaging VC funds in Innovation Procurement.



Roles of Key Actors

PREVENT PCP aims to ensure the engagement of VCs in the PCP in order to increase the chances of commercialization of the developed solutions.

- **Informal Working Group (IWG) 'Fostering Venture Capital involvement in Pre-Commercial Procurement.'**
 - Consortium engages external experts to form IWG.
 - Members include researchers, Members of the EU, representatives from CA & VC, members of EC services.
- **IWG's Primary Objective:**
 - Facilitate interactions between VC organizations and PCP contractors.
- **Overall Aim:**
 - Commercialize the final solution in public and private sectors.
 - Increase chances of a profitable return on investment.
 - Act as a pilot and produce a set of lessons learned and policy recommendations





3. Gaps in the Innovation Pathway



The barriers in the commercialisation process of innovative solution

The development of new technology through PCP or through any other mechanism such as R&D&I that a firm autonomously undertakes has the goal of moving an initial idea [a 'basic principle' forward to become, eventually, an operational product or service] to 'TRL 8, [at TRL 9, a technology is considered commercial and on the market].

Phases in PCP Regulation:

- Phases are used in PCP.
 - First two phases involve competitive R&D.
 - Followed by Phase 3 which involves the deployment and testing of the solutions developed during the earlier phases.
- **EU Public Funding:**
 - Public funding in the EU for TRL pathway development through PCP stops at TRL8.
 - This occurs at the end of Phase 3.



Gaps and risks

- **Vendor Risks:**
 - Risk 1: No guarantee that their product will be purchased after the PCP.
 - Risk 2: May struggle to secure capital for commercialization, even with a successful product.

- **'Valley of Death' (VOD):**
 - This gap between development and commercialization is colloquially known as the 'Valley of Death' or 'VOD.'

- **Additional risks (IPR Loss and Lack of Visibility):**
 - Small firms often lose Intellectual Property Rights (IPR).
 - Lack of visibility has two aspects:
 - Innovation struggles to secure investment due to a lack of capital.
 - Potential purchasers may not be aware of the innovation, impacting sales.



The VC Gap

- **US and EU R&D Procurement:**

- Both the US and EU have R&D procurement systems.
- A common risk: Firms successful in early tech development may lack capital for product/service development.

- **US Approach:**

- Success at Phase II allows firms to proceed to Phase III without competition.
- They can continue to access funds from the procuring authority.
- VC fund allowed at any phase.

- **EU Approach:**

- VC fund allowed at any phase.
- Competition is required except the Innovation Partnership Procedure.

- **EU's Response:**

- Urgent consideration on addressing the gap in further technology development by involving venture capital. The EU European Investment Fund plays a pivotal role providing data access.





4. Contribution of VC Investment in Innovation Procurement



Evidence we have already from EC and elsewhere of benefit of VC

- **VC-Backed Firm and Milestones:**

- VC-backed firms receive financing to reach specific milestones (e.g., prototype development or major customer acquisition).
- Parties can renegotiate at each milestone with new information.

- **Pre-Commercial Procurement (PCP) Approach:**

- PCP follows a staged or phased approach.
- Divided into three consecutive phases.
- Access to each phase depends on achieving contract-defined milestones.

- **VC Fund and Innovation Procurement:**

- VC funds can use the phases of Innovation Procurement to adjust their investments in a company.





- **EC Survey Findings:**

- Indicates higher growth rate for VC-backed companies in PCP compared to non-VC backed companies.

- **Impact on VC Financing:**

- Participation in PCP helps many companies attract VC financing, sometimes in multiple rounds.

- **Higher Commercialization Rate:**

- Evidence suggests potentially higher commercialization rates for VC-funded companies





5. Benefits and Costs of VC Involvement



Benefits

- **Internal Benefits:**

- Improved solutions:
 - Enhance service quality.
 - Reduce operating costs.
 - Possibly a combination of both.

- **Control in Innovation Process:**

- PCP offers contracting authorities enhanced control of the innovation process.
- Provides the ability to halt an R&D process if it doesn't promise a return.

- **Cost Reduction Through Joint Procurement:**

- PCPs can facilitate joint procurement processes.
- This reduces the costs of larger-scale activities.



Benefits

- **Transaction Benefits:**

- Firms participating in PCP gain various benefits, including:
 - Increased sales.
 - Business expansion opportunities by accessing new customer bases.
 - Employment creation.
 - Formation of new firms.
 - Generation of intellectual property.
 - Skill acquisition through innovative activities.

- **Networking and Innovation Ecology:**

- Participation in R&D enhances firms' networking and integration into innovative ecosystems.
- Firms may also publish results in trade and professional journals.

- **Control and Expertise:**

- Investing capital can provide control over the invested company.
- VC firms gain expertise in innovation procurement, opening further profit opportunities.
- VC firms investing in PCP gain access to innovating firms, providing investment opportunities and awareness of new markets.



Costs

- **Venture Capital Engagement in Innovation Procurement:**

- Introduces a new actor with different incentives.
- May lead to a loss of company control (dilution of equity).
- Can create pressure for rapid growth, potentially misaligned with the firm's strategic and operational capacity.
- These challenges necessitate a delicate balance between securing funding and maintaining a firm's strategic and operational alignment.

- **Risks for the CA:**

- Business Risk: VC control can challenge specific technology goals.
- Policy Risk: Broader projects with VC involvement risk policy priorities like European autonomy.

- **Alignment Challenges:**

- The aims of venture capital companies may not align with the aims of precommercial procurement.
- Procurement may fail if these aims diverge.

- **Risks for Venture Capital:**

- Inherent uncertainty in competitive R&D processes and commercial competition/tendering.



6. Schemes in Place



USA Scheme

- **Venture Capital and SBIR Competitions in the United States:**
 - Many technology vendors participating in SBIR competitions have some form of venture capital funding.
- **Phase III Awards and VC Funding:**
 - SBIR Program doesn't directly award Phase III contracts.
 - Successful firms in Phase III may receive follow-on contracts for use by the US government and venture capital funding.
- **VC Ownership in SBIR:**
 - Initially, SBIR was reluctant to award firms majority-owned by venture capital.
 - Some departments now permit technology vendors majority-owned by VC to apply.

USA Scheme

- **US Rules for SBIR Competitions:**

- Allow more than one venture capital firm to be owners of a technology vendor.

- **Involvement of VC in Technology Vendors:**

- Limited evidence on VC involvement in different phases, studies done in agencies or departmental procurements may vary in their conclusions about VC investment and effects.

Polish Scheme

- **Green Deal Accelerator Program in Poland:**

- Implemented by NCBR and the Polish Development Fund on a national level.
- Aims to assist in the commercialization of "green deal" technologies developed by innovative companies.
- It is a national policy scheme.

- **Support for PCP Contractors:**

- Companies that have participated as PCP contractors and reached a mature TRL for their solutions receive assistance for commercialization plans and actions.

- **Program Structure:**

- Initial phase: Interviews with entrepreneurs to identify obstacles and gaps for commercialization.
- Support phase: Organized into 3 thematic modules.
 - Business tools.
 - VC funding.
 - Foreign expansion.



Support phase in Polish Scheme

- **Module 1 - Business Tools:**

- Includes workshops covering important aspects for entrepreneurs.
- Covers various models to introduce solutions to the market.
- Topics include Public Private Partnerships, Horizon Europe funding program, loans, corporation funding, VC funding, etc.

- **Module 2 - VC Financing:**

- Focuses on enhancing participants' knowledge of VC financing.
- Provides knowledge and practical guidelines related to negotiations.

- **Module 3 - Business Expansion:**

- Dedicated to contractors interested in expanding their business to other markets.

- **Matchmaking Component:**

- Program includes matchmaking between industry and VC funds.
- Organizes pitch days and reverse pitching days:
 - Companies pitch to VC funds.
 - VC funds present themselves to companies.





7. Observations and Future Work



Observations

The connection between PCP schemes and venture capital funding is increasingly essential to innovation procurements.

- **PCP Initiatives:**

- Drive innovation in areas like public transportation.
- Identify pressing needs and create opportunities for innovative companies.

- **Benefits of VC Involvement:**

- Boosts sales, expansion, employment, and IP generation.
- Aligns with growth goals but poses control and growth challenges.

- **Dynamic Regulatory Frameworks:**

- US shift to allow majority VC-owned tech firms in programs like SBIR.
- In EU the Green Deal Accelerator program in Poland serves as a tangible example of how PCP and VC funding intersect.

- **EU Green Deal Accelerator (Poland):**

- Merges PCP and VC funding.
- Supports PCP contractors in advancing technologies for commercialization.



Future Work under the PREVENT PCP program

- **White paper**

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- The first publication introducing the topic.
 - Outlines the framework of benefits and drawbacks of connecting VC with innovation procurement.
 - Signals further reports on the topic.
- **Future Reports:**
 - Include considerations of lessons learned from the Green Deal Accelerator program in Poland.

If you are interested to receive the white paper once published, you can register for the PREVENT PCP newsletter: <https://prevent-pcp.eu/news/>



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Please add or mention a call to action for anyone interested to receive the white paper once published (due probably October) - they can register for the PREVENT PCP newsletter, through the website. The Newsletter they will be informed when the article is published and on how to receive / download.

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contact@prevent-pcp.eu



www.prevent-pcp.eu



www.twitter.com/PreventH2020



www.linkedin.com/company/prevent-pcp

Egli Rrokaj

Phone: + 30 6982806130

Email: e.rrokaj@corvers.com

