The challenges of technological SMEs in HPC

Task 4.2 on Start-ups and SME

Maike Gilliot, ETP4HPC / Teratec
François Bodin, Univ. Rennes 1

EXDCI Final Conference – Barcelona, Spain – 7 & 8 September 2017

Innovation, SMEs, start-ups and tech transfer

Glimpse at the ecosystem
(european level)

In EXDCI :

A. Get input form the community

   1. From the projects (FETHPC and CoEs)

   2. From SMEs and start-ups

B. What can we do on ecosystem level

C. Outlook

A   INPUT FROM THE COMMUNITY
- FETHPC and CoE projects
- SMEs and start-up

Supportive environment

- Partnership already in place (project consortium)

- Shared risk (via EU financing)
  - Mont-Blanc 1-3
  - Deep/Deeper/ Deepest
  - Kaleao and Zeropoint Technologies (emerged from Euroserver project)

… but nevertheless …*

- Projects reported only on very few "pieces of technology"*

- Projects seem not aware of existing help for start-ups, nor much sensibility for helping SMEs of their project

- Only 1 submission to "FET Launchpad" calls (TTBOOK)

* Survey amonst the CoEs and FETHPC projects in March 2016

Input from SMEs and start-ups

Goal   Get the perception of SMEs and start-ups on the market, hurdles, specific problems

-> via interviews

Outcome

1. Reluctance to innovation on the market

   - "We don't say its novel"

   - HPC centres need above all to comply with their clients needs

2. Difficult to get into the market

   - "No one ever got fired for buying intel"

   - Pre-condition: have been already part of a top-500 machine

   - Circumvent HPC: penetrate market via applications or via similar markets

Input from SMEs and start-ups (cont.)

3. Public procurement

   - Financial requirements for biding more difficult to meet for an SME than for a large company

   - Need for pre-financing can hinder SMEs form biding

   - Procurement schemes such as PPI not much used

4. Connection to the ecosystem (e.g. via EU projects): important but finically difficult for SME ("we cannot spare 0.5 ETP for a project")

-> **Summarised in D4.2 "Report on start-up mature technologies" (08/16)**

B   WHAT CAN WE DO AT ECOSYSTEM LEVEL ?

Joint Workshop

Goal: Agree on joint recommendations amongst HPC centers, large companies, Start-ups and SMEs

Workshop* organised by a Core Group:

- Manuel Arenza (Appentra), Frank van der Hout (Clustervision)
- Dirk Pleiter (Jülich Supercomputing Centre),
- Dominik Ulmer (Cray), Olivier David (Atos), Oliver Oberst (IBM),
- Avi Mendelson (Technion)

Focus on three key topics:

- Procurement
- Strategic collaborations
- Risk Mitigation

* April 10th 2017 at Municon Conference Centre

exdci — European Extreme Data & Computing Initiative

Workshop agenda

COFFEE		
10h00 -		Francois/ Maike
10h15 -		François/ Maike
10h30 –	PROCUREMENT	**Lead:** Dirk Pleiter, Manuel Arenaz
11h30 – 12h30	**Session on STRATEGIC COLLABORATION**	**Lead:** Dominik Ulmer, Claudio Arlandini, Kai Diethelm
12h30 – 13h30	LUNCH	
13h30 - 14h30	**Session on RISK MITIGATION**	Olivier David, Colin McMurtrie
14h30 - 15h30	Consolidation of recommendations	all
15h30 - 16h00	Brainstorming on mid-term actions to support SMEs and Start ups	all
16h00 - 16h30	Wrap-up and next steps (conclusion, feedback and next steps)	François/ Maike

- Joint assessment of current situation
- Brainstorming on strategies and actions
- Collection of recommendations

- Kick-off presenters

e**x**dci
European Extreme Data & Computing Initiative

Procurement

Topic

An important part of the HPC market , however often difficult for SMEs and start-ups to comply with requirements

--> Are there ways to leverage these hurdles?

Discussion

- HPC centres: need reliable system with reliable support
- Do not focus exclusively on the Tire-0/ Tire-1 systems: HPC centres also host smaller systems
- Do not focus exclusively on HPC Centres : seek for other markets
- Pre-financing as a strong hurdle
- Lack of understanding of the mutual constraints

EXDCI Final Conference – Barcelona, Spain – 7 & 8 September 2017   September 7th 2017

Strategic collaborations

Topic

   Crucial for the development, but can be "difficult" in practice

   --> Are there best practices to share on how to make such

   a collaborations a success for both parties?

Discussion

- Collaboration with HPC Centre: technical playground, help in hardening the SMEs/start-ups' product, and provide use cases and customer references

- Hurdles : IP issues (in case of co-development), diverging roadmaps

- SMEs teaming up for offering a "complete" solution

Risk Mitigation

Topic

To involve start-ups and SMEs in commercial offers is sometimes perceived by procurers as "risky" due to less financial resources, less experience, and perhaps, less "proven" products.

Discussion

- Risk strongly correlated with personal perception -> personal relationship is very helpful
- Sustainability is key for the SME/Start-up: can be supported via long-term collaborations ("co-design")

Recommendations

R1 SME should team up with main bidder for big procurement is encouraged as a way to go especially for large procurement

R2 HPC centres should have innovation oriented projects and HPC systems

R3 The SME instrument should be better promoted amongst the HPC community and – if necessary – better adapted to the HPC sector

R4 Mechanism to build trust and personal relationship amongst SMEs and Start ups should be encouraged

R5 Partnership of SMEs/Start ups with HPC centres and large vendors shall be encouraged

-> Summarised in D4.6 (08/17)

1. Implementation of the recommendations

2. Unlocking innovations in EU-projects by stimulating projects' spin-off

THANK YOU

EXDCI Final Conference – Barcelona, Spain – 7 & 8 September 2017   September 7th 2017
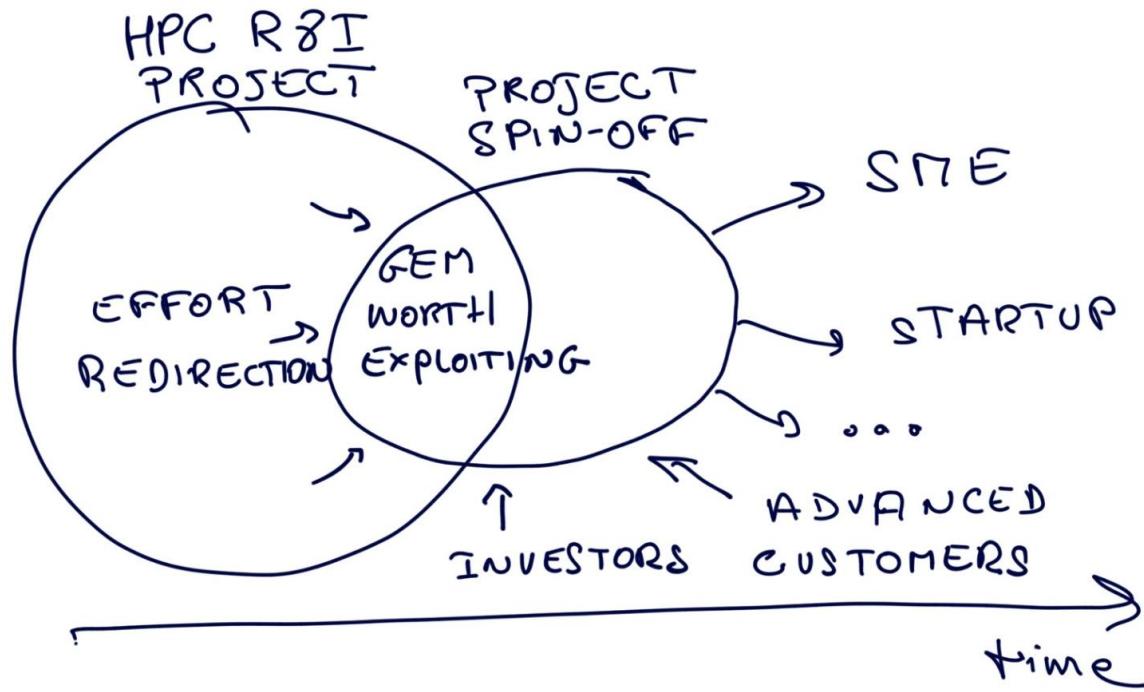
FET LAUNCHPAD

The FET Innovation Launchpad aims to take FET research closer to the society and the market. By their very nature – foundational, novel, high-risk, interdisciplinary – FET-funded projects have the potential to create many innovative social and economic opportunities. Not all of those promising ideas can however be taken-up under the original project.

This is where the Innovation Launchpad comes in. It will take-up those ideas from FET funded projects and explore their possible social and market applications. Ultimately it aims at stimulating entrepreneurial mind-set in the FET research world. Participants of ongoing or recently finished FET projects under FP7 or H2020 are invited to apply to the FET Innovation Launchpad .

Webpage: https://ec.europa.eu/digital-single-market/en/news/deadline-fet-innovation-launchpad-29th-september-2016

EXDCI Final Conference – Barcelona, Spain – 7 & 8 September 2017   September 7th 2017