7th European Innovation Summit, held at the European Parliament in Brussels from 7-10 December 2015

Session: Innovation Ecosystems Part I: Start-ups, Incubators and Venture Capital in Europe, Wednesday 9 December 2015 from 9.30-11.00am. Venue: Committee of the regions.

INDEPENDENT PILOT INFRASTRUCTURES AS PART OF THE SOLUTION

Speech by Mr. Brecht Vanlerberghe, R&D Manager Bio Base Europe Pilot Plant.
Program see: http://www.knowledge4innovation.eu/7th-eis-programme#908

Goodmorning,

All what was said by previous speakers in terms of challenges was correct, I represent an open access independent pilot & demo infrastructure. In the title of this session our type of organization is not mentioned, still we are convinced to be part of the solution. So I am very happy to be here and share our experience from the field.

I will first create a bit of context explaining briefly bio economy and the role of white biotech as key enabling technology. This will bring me to the challenges with respect to deployment and the role we play in accelerating this deployment.

Everybody knows by now that Europe is facing big societal challenges: Amongst others energy independence, greenhouse gas reduction to slow down climate change but also preserving and creation of new Job by reindustrializing Europe. This does not have to be contradictory!

A big opportunity for Europe lays in the Bio Economy. The bio economy is a circular economy using locally grown bio based feedstocks rather than imported fossil resources to produce food, feed, chemicals, energy… . It is a new knowledge & technology intensive economy with high employment potential also for lesser educated people and with reduced environmental impact.

Key technology within the Bio economy is industrial biotechnology, Industrial biotechnology is identified by Europe as a one of the KET. For those who don't know: Industrial biotechnology is the use of microorganisms (bacteria, fungi, yeast…) and enzymes to convert bio based feedstocks into valuable products. Industrial biotechnology is different from the other key enabling technologies, it works with living material and in wet environment, so required measures for deployment are different in certain aspects.

Actual situation with respect to Industrial biotech in Europe is that there is a lot of research ongoing but still too little deployment in Europe. Why's that?
Main focus lies on the development of the biocatalysts, the enzymes and the micro organisms, that's where the IP is taken. You have to consider them as the tools, it's not the product nor the process. If you want to bring a product to the market you have to validate it: is this what the market wants, what does it cost, how much investment do I need, is it sustainable? To answer these questions you need a process, to make prototypes, to perform life cycle analysis and to assess the economics. Reality is that there's still no or little process development to address this.

So this brings me to the next question:
Why is this process development phase missing? Research happens in the lab with smart scientists, for a process all of sudden you are in industrial environment, you need industrial equipment and other expertise and thus other people, like engineers, technical people, maintenance and business development, and so on, a whole organisation. The hardware typically takes a couple of million Euros, to build such team you need years. A lot of money and a lot of effort if you are not sure it will work.
It is too time consuming and even more important financial risk is too high vs risk premium to be obtained (compared to red biotech), so venture capitalist do not enter, companies do not take the plunge. So it's not only about money, also about willingness to take risks vs risk premiums and a lot about people, talent and expertise.

So we are in a situation of market failure: As a society we should invest in a bio economy, private investors will not or not to the required extent because risk premium is too little today. That's where government can help by legislation or creating context.

Part of the solution is a couple – not to many- well equipped, state –of-the- art open access, multipurpose independent pilot & demo infrastructures financially supported by government?
Why multipurpose?
It is risk sharing, large investment can be depreciated over multiple innovations.
Why a few?
This activity requires sufficient critical mass to run 24/7, it requires expertise, sufficient equipment and whole skill set. Too many little ones won't meet expectations and will fail!
Why independent?
They need to be independent because of confidentiality, Start-ups and SME's are the real innovators, they have to be involved, they have the ideas and the enthusiasm, large industries have the money and the market, so in the end they have to collaborate. But Start-ups and SME's want to validate their technology before they talk to large industries, to capture as much as possible value from their innovation, so they do not want to involve large industries at an early phase.

To ensure all this key characteristics financial support is required. This financial support should serve to finance the infrastructure, the overhead activities and matchmaking activities. Operational expenses should be covered by running projects, bilateral projects with industries and consortia projects, privately funded or within competitive funding schemes. This keeps the organization sharp and relevant!

Loans by banks or European Investment bank are often suggested to finance such infrastructures, this does not work.
Payback does not come from the activities itself of the pilot & demo infrastructures, but from the deployment of the innovation, creating sustainable jobs and value adding economic activities, It's payback for society not for the operator of the pilot or demo infrastructure.

We discuss about ecosystem for innovation, clusters and incubators: our infrastructures are unique places where innovators meet and gaps in the value chains are filled and even new value chains arise. These infrastructure do not only address technological barriers but also non technological barriers for companies by exploitation of the network and community around them.
A few figures: the past 3 years we serviced 70 different Cies, running 129 projects, not mentioning the numerous contacts, discussion and exchanges with did not lead to collaboration. 1/3 of these companies being large enterprises, 2/3 start-ups and SME's. As mentioned by previous speakers Indeed companies

tend to stack subsidies, specializing in applications for money, slowing the innovation down. At our facilities largest parts of the projects being between is 50 k€ up to 100k€, relatively little money but of huge impact for the companies, in their innovation trajectory.

In Europe today we are 6 operators of such open access pilot and demo infrastructures for the bio economy. We are all a bit different in how we are organized and financed. To study which things works best and to exchange best practices and to still improve our impact, we want to join forces. We applied for an Interreg Europe Project SmartPilots together with our respectively regions. Our regions all have in their Operational program an axe on deployment of innovation, development of a sustainable or bio economy, support to SMEs. Open access research & pilot infrastructures, testing grounds or living labs are identified as a critical instrument to support this.

So to conclude:
"Open-access, independent pilot and demonstration infrastructures, with critical mass are **key** to bring key enabling technologies from lab to market" but without governmental support it won't work.