

## INNOVATION MANAGEMENT AND INNOVATION FUNDING FOR SMEs

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### **Abstract:**

The vast majority of SME's are normal businesses created to serve a market demand be it local or international. Their total motivation is paying the wages and bank overdrafts and expanding their business. For a significant number of years (if ever) they are not concerned with developing new technology but applying what is on the market. Only when they are mature, of a certain size and involved in the manufacture or application of more advanced technologies do they have the luxury of looking to develop new products or processes. Others are formed to develop one new technical idea. They may be a spin out of a university or individuals passionately wedded to the idea of a new technology. However the survival rate of these organizations is statistically extremely poor. As a company we innovate and help others including SME's to do so because we have a 70 year applied technology history and are experienced in raising grant funding etc. However even for us paying the wages and running costs comes first. You can have an innovative business culture and R&D capability but the must be a market/technology pull. Innovation is not just good ideas there are loads of those. It is a will on the wisp which needs a proven demand, patience and a big bell jar to capture it. At company level it's easily driven if the management has the will and sees the benefits. High tech companies both small and large are more likely to have this type of culture because of the people they employ and the fact they are always thinking to solve technical problems. Many continuous improvement management systems/techniques also involve getting the primary through to tertiary work groups to think of better and innovative methods of working or developing new techniques and technologies. Most SME's have to see a short term benefit normally associated with development rather than research. The other level is local awareness campaigns through the different industry associations or local business networks sponsored by the government. Most SME's just do not have the time to look around and really need to be made aware by their peers. Also an initial small scale look-see funding route that is not too complex is needed. By this I do not mean giving funding to the universities to go sell their research capabilities at technology shows giving away €10000 innovation vouchers if the SME signs up. Basically because the SME is not interested in research but shorter term industry focussed innovation. Funding via the industry associations which they can spend as they like on innovation would tend to bring like minded SMEs together at national level and possibly European level all with similar problems related either to their own businesses or the demands of their client markets which the SME's can see a profit in solving. This is a somewhat simplistic approach but complexity is always likely to put SMEs off as the demands on their time are high and the bank and taxation is always there with their hand out.

*Keywords: innovation management, sustainable economy, information management systems, SMEs*

## 1. INNOVATION VAUCHERS - TARGET AND PURPOSE

Innovation vouchers normally target SMEs in light of the contribution (normally below EUR 10 000) they provide for the introduction of small-scale innovations at the firm level. SMEs tend to have limited exposure to public knowledge providers such as universities and research organisations as they may see such institutions as irrelevant to their business activities or be unwilling to invest in the search costs necessary to identify relevant providers. On the other hand, staff in public knowledge providers may see little incentives in working with small firms when the latter have lower absorptive capacity and guarantee lower returns as compared to large companies and other public agencies.

The main purpose of an innovation voucher is to build new relationships between SMEs and public research institutions which will:

1. stimulate knowledge transfer directly
2. act as a catalyst for the formation of longer-term more in-depth relationships.

In a snapshot, innovation vouchers are intended as pump-priming funding through which initial industry-university relationships can be established.

The issuing of the voucher has two main impacts, both of which overcome major incentive barriers to the usual engagement between SMEs and knowledge providers. First, the voucher empowers the SME to approach knowledge providers with their innovation-related problems, something that they might not have done in the absence of such an incentive. Secondly, the voucher provides an incentive for the public knowledge provider to work with SMEs when their tendency might either have been to work with larger firms or to have no industry engagement at all.

## 2. PRACTICE OF INNOVATION VAUCHERS

Voucher schemes can differ on several technical details, but the traditional steps of implementation are as follows:

- First, the availability of vouchers is advertised widely in the press and through the internet. In particular, representative associations, trade bodies and chambers of commerce can be actively involved in the promotion of the instrument by asking them to inform their members about the existence of the policy tool (i.e. network-based marketing).
- Second, SMEs are requested to submit an application, which should possibly be electronic to keep the application process and the overall management of the programme as simple as possible. The application should contain eligibility criteria (see below) and ask firms to provide a description of the problem they would like to solve. The problem should be very practical in nature, in the sense that firms should be able to use the acquired knowledge to cope with a minor technological issue or set out possible solutions for a more complex problem (i.e. consulting).
- Third, vouchers are awarded by the government agency( Romania case-UEFISCDI) delivering the programme. Specific selection criteria should be set out beforehand in the case that the number of applications is higher than that of vouchers available. A simple lottery has also been used in similar schemes to determine the winners of the voucher.
- Fourth, once the SME has been allocated an innovation voucher, it formulates a completed research question and commissions through the voucher a public knowledge institution to solve the question.
- Fifth, there is generally a time limit (6-12 months) by which a voucher must be used. When the assignment is completed the knowledge provider receives the voucher by the firm and redeems it at the delivery agency.
- Sixth, reporting requirements by the firm and the knowledge provider about the use and impact of the voucher can be set, but they should be kept minimal consistently with the “light touch” management of a programme which gives small-scale funding.

An important aspect of implementation concerns the eligibility criteria that applicant firms should meet. They should be simple and straightforward, some of the most common being as follows:

- The firm is registered in the country or region which implements the scheme and is not subject to a suspension of payments for protection against creditors.
- The firm abides by the national (EU in the case of Europe) definition of SME.
- The firm has not received more than a certain amount of public aid over a defined period of time (e.g. in the EU, this tends to correspond to the state aid de minimis statement).
- The firm has not entered in any commitments, prior to receiving the voucher, with the knowledge provider that will carry out the project. This has the clear objective of increasing the additionality of the measure.

### **3. APPROPRIATENESS AND FEASIBILITY**

The wide recourse to innovation vouchers (e.g. The Netherlands, Ireland, West Midlands in the UK, etc.) demonstrates that, thanks to its simplicity, the measure can be easily adopted by countries and regions worldwide, provided that small firms have a minimum “absorptive capacity” towards university research and that universities and public research institutions are willing to co-operate with industry.

Innovation vouchers are traditionally used to solve minor technological problems or scope out larger technological issues. As such, they are useful instruments but need to be integrated into a wider innovation strategy in which voucher recipients can refer to other policies for further stages of business innovation. Examples include collaborative research programmes, incentives for internal R&D, clusters and networks for innovation, etc.

Limited evaluation evidence suggests that output additionality for this measure is high, i.e. a large share of firms that are granted vouchers would not have undertaken the project without public support. However, the impact on longer-term SME-university collaboration is more limited and questionable. On their own, innovation vouchers appear too small a tool to change the embedded attitude of SMEs towards research organisations.

A few conditions make this tool more feasible and likely to succeed. First of all, the voucher should be directly administered by a public agency, whereas there are some cases in which it was also managed directly by a university. Whilst this causes more costs for the public sector, it presents three main advantages: i) it avoids any potential conflict of interest between the university as scheme operator and as knowledge provider; ii) it may allow a more dedicated approach to the operation of the scheme than the wider mission of a university may permit; iii) there may be greater scope for follow-through with other supports for innovation if the scheme is administered by a development agency.

Secondly, brokering is crucial to the feasibility of the programme. There is a need both to minimise the application burden on firms and to provide cost-effective matching to appropriate academic expertise. For instance, too much an arm’s length approach by the delivery agency may lead to difficulties for firms in finding appropriate academic partners and for knowledge providers in responding to a relatively high volume of unco-ordinated enquiries. Developing an enhanced brokerage service is crucial to the effectiveness and popularity of the programme by enabling firms to more quickly identify possible partners and reducing the load on knowledge providers. The international practice has shown highlighted strengths (success factors) and weaknesses (risks) in use of innovation vouchers:

#### **3.1. Innovation vouchers - Success factors**

The main success factors of innovation vouchers can be summarised as follows:

- Simplicity and “light-touch” administration
- Effective advertising and promotion
- Organisational commitment by universities and National Institute Research
- Clear ideas by firms on how to use the vouchers
- Efficient brokering

### 3.2. Risk factors of Innovation vouchers

- Short-term effects
- Technology lock-ins

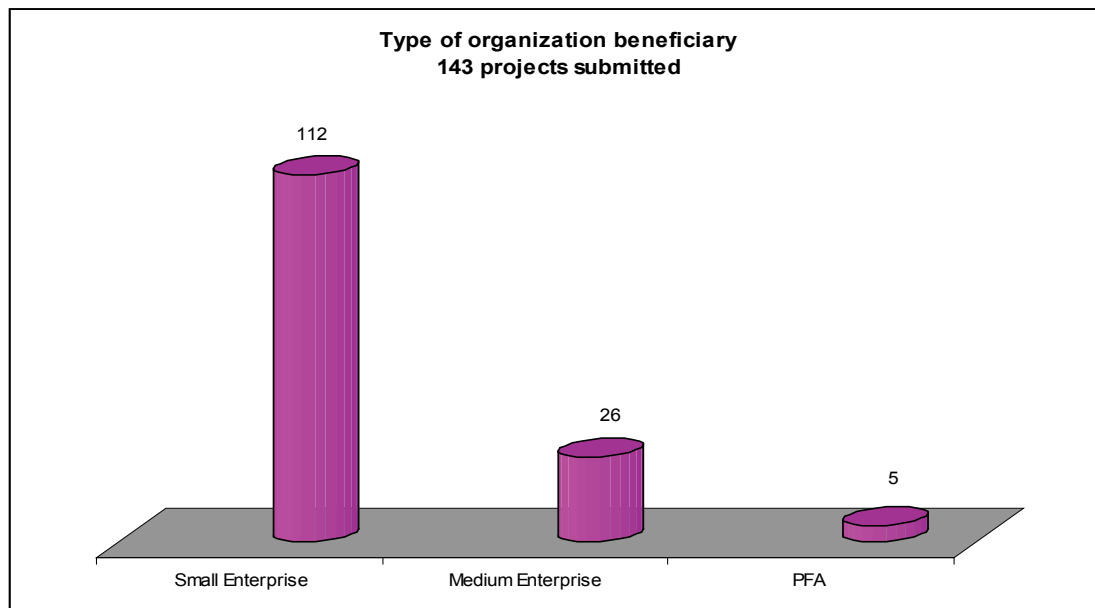
## 4. ROUMANIAN INNOVATION VOUCHERS PRACTICE

Innovation vouchers was introduced in Romania in 2013 when it launched the first competition of this kind. 143 projects were funded with 10,000 euros. In these projects they were involved 191 institutions. **INNOVATION VOUCHERS** program was structured on nine priority areas of research

- Information Technology and Communications;
- Energy;
- Environment;
- Health;
- Agriculture, food safety and security;
- Biotechnologies;
- Materials, processes and innovative products;
- Space and security;
- Socio-economic and humanistic.

### 4.1. Types of beneficiaries

- PFA - authorized person
- Small Enterprise
- Middle Enterprise

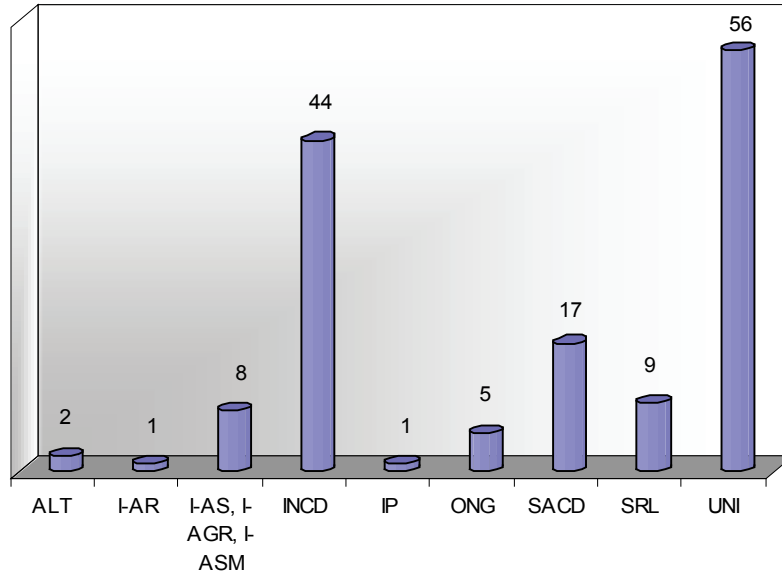


### 4.2. Types of institutions involved

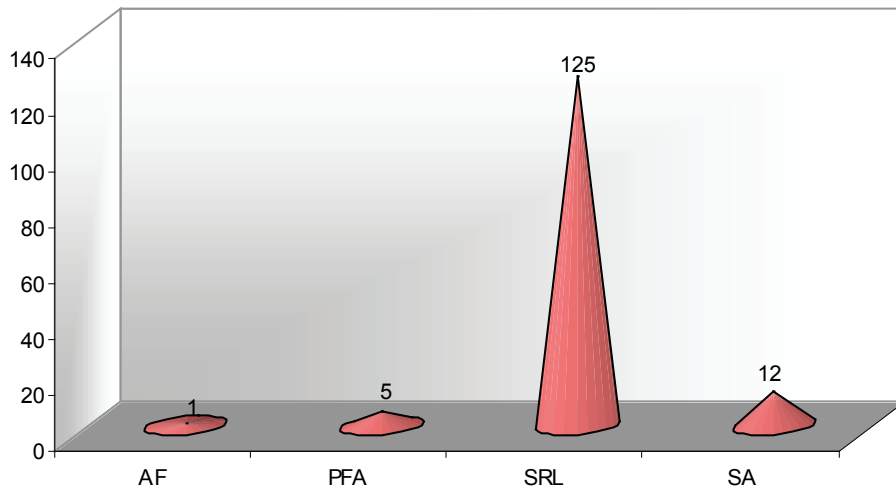
- INCD - National Institute for Research and Development
- I-AR – Institute for Research in Romanian Academy coordination
- I-AS, I-AGR, I-ASM – institutes in ASAS coordination, the Ministry of Agriculture, namely the Academy of Medical Sciences

- IP - Public institution
- UNI - public higher education institutions
- SNC - company, National Companies, Ras
- SACD - limited liability companies
- SRL - limited liability companies
- NGOs - nonprofit non-governmental organization (associations, etc.)
- SA - corporation
- ALT – other

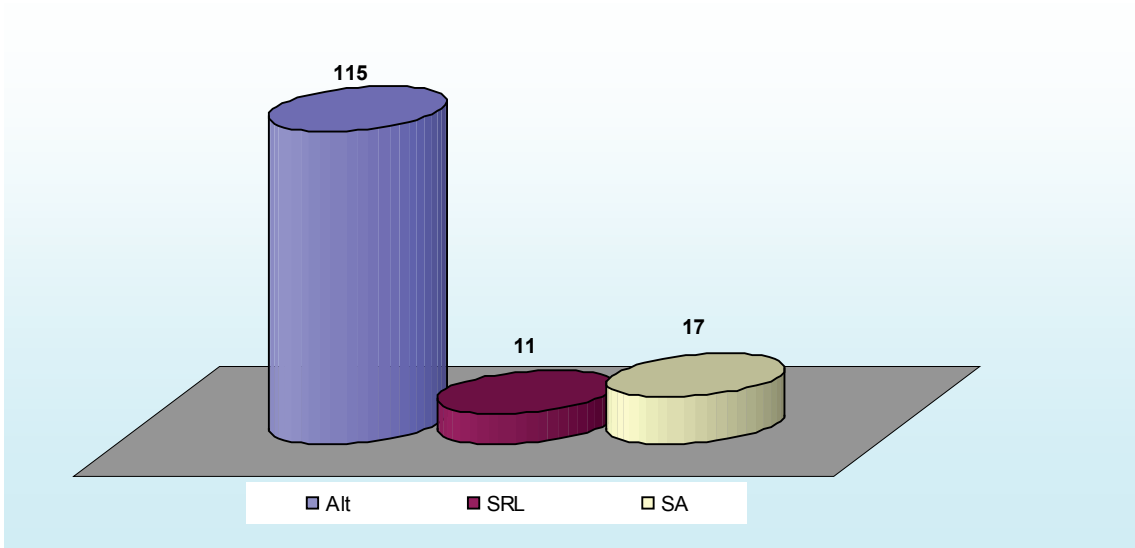
**Type of organization providing  
143 projects submitted**



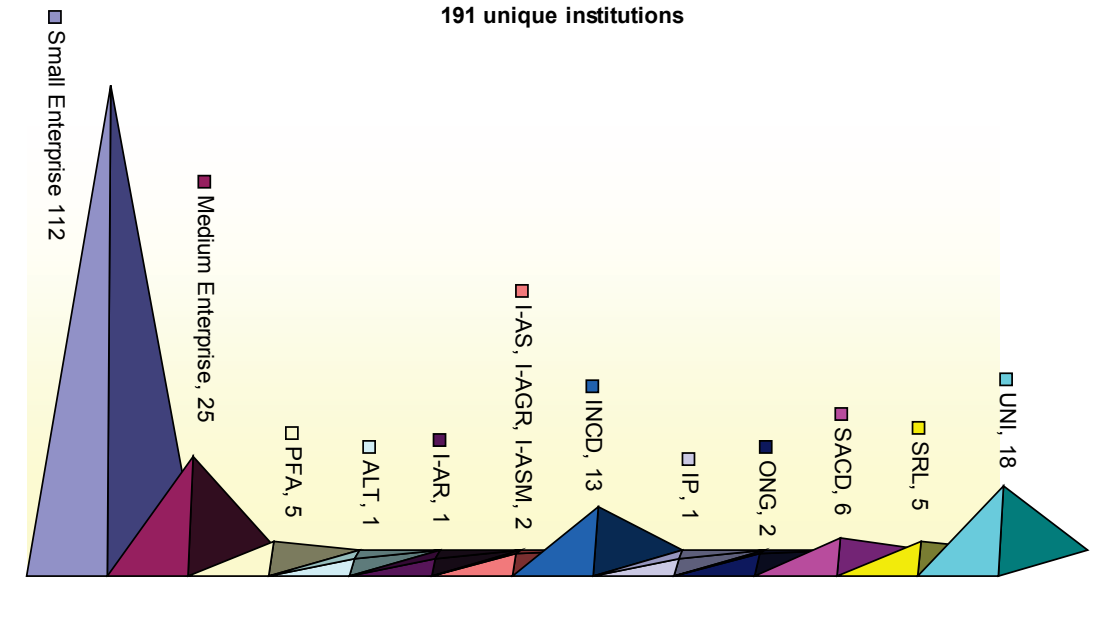
**Legal form of the beneficiary institution  
143 projects submitted**

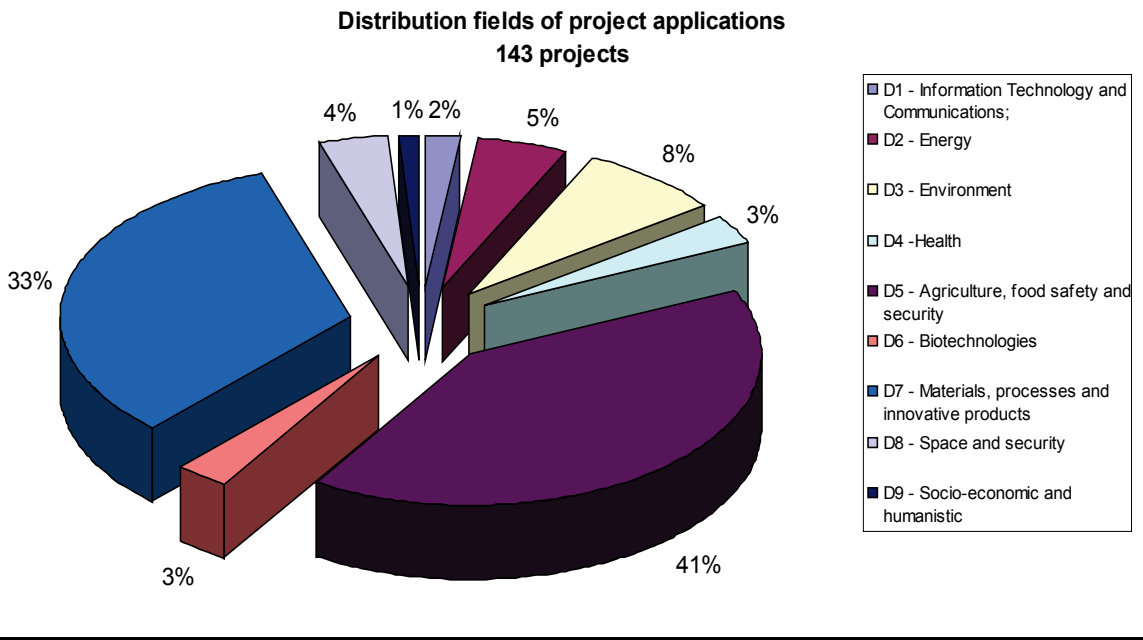
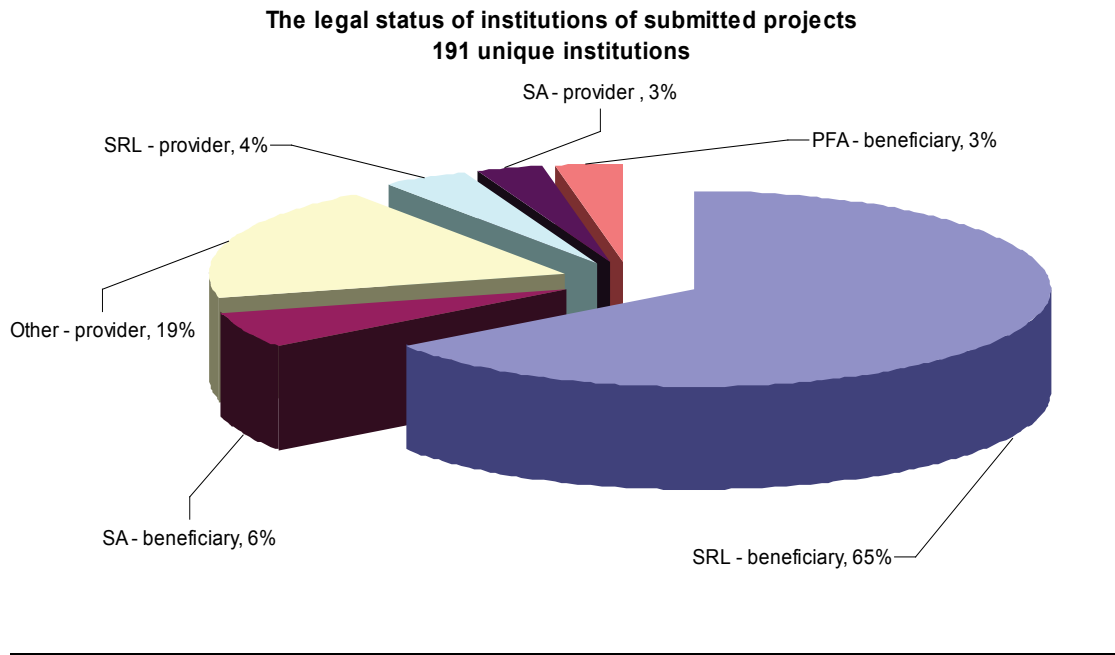


**Legal form of organization providing  
143 project submitted**



**Unique types of institutions submitted projects  
191 unique institutions**





## 5. CONCLUSION

The impact of innovation vouchers can be evaluated through ex-post surveys aimed at assessing the short- and long-term behaviour of the voucher's recipients. In particular, two types of additionality are important to measure: output additionality and behavioural additionality. The first refers to whether or not the assignment for which the voucher was given would have been carried out also without public support. The second refers to whether or not the vouchers' recipients have further contracted public research organisations for follow-up assignments paid through other means (e.g. retained savings or other public funds).

A control-group methodology is best suited for assessing the effectiveness of the tool with regard to its ability to trigger both short- and long-run industry-university collaborations, to have an impact on concrete innovation outputs, and to improve the perception of firms toward university research.

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