

EURAB 04.028-final

EURAB report on: “SMEs and ERA”

Report and Recommendations

Executive Summary

Remit of this study

The remit of this study was to develop concrete policy recommendations, short-term and long-term, based on SMEs’ specific approaches to and needs for R&D and innovation. The WG was to consider, in particular:

- contemporary data on SME participation in R&D and innovation activities
- typologies of SMEs and identification of their specific R&D and innovation support needs;
- recommendations for improving FP6
- recommendations for future policies, including FP7, to raise levels of innovation in SMEs, including:
 - comparisons of good practice among countries and existing SME R&D and innovation activities and SME-support measures, including comparisons with the USA;
 - ways to translate and make available research results from European basic and pre-competitive research to SMEs, and
 - proposals for improving the transfer of research results into concrete applications and products.

Main Drivers for the Analysis

- The R&D spending gap between European and the United States can be attributed in large part to differences in R&D spending by SMEs in the two regions. Thus higher R&D spending by European SMEs could play a key role in helping to achieve the Barcelona 3% target.
- European industry must put more emphasis on R&D. Both large and small firms are important. SME’s have special needs and this justifies special attention and support.
- More must be done to stimulate R&D and innovation in SMEs. They need assistance at all stages in the innovation process, from research through development to market launch. Differentiated policy measures are required to achieve this.

Main Recommendations

Achieving the 15% FP Spending Target for SMEs

- The new instruments are not suited to the needs of the vast majority of SMEs.
- It seems doubtful that the FP6 15% SME target can be achieved

- The Commission should increase FP6 spending on CRAFT and Collective Research to at least €1 billion

SME-specific Measures: Cooperative and Collective Research

- The budget for Co-operative and Collective Research should be substantially increased, to at least €1 billion.
- More management resources should be allocated to Cooperative and Collective Research in order to permit them to function in a more SME-responsive and -adapted manner.
- The CRAFT Exploratory Award Scheme should be re-introduced. It is especially needed in the enlargement countries.
- Open Calls for Proposals and two-step proposal procedures should be introduced. Payment facilities should be improved.
- Requirements with regard to the number of participating SMEs and research institutions should be relaxed.
- The scope for improving the management of CRAFT, and for funding smaller and shorter projects, by enhanced co-operation with the Member States and use of the Structural Fund method should be explored.

High-Growth SMEs: A Future Policy Priority

- High-growth-potential SMEs should be a prime focus of future European policy.
- The principal criteria for supporting SMEs should be business/innovation criteria, not criteria related to scientific excellence.
- Action is required to stimulate seed and venture capital in Europe.

SBIR-like Support Mechanisms (already proposed by EURAB Working Group 5)

- The Commission should take the initiative to engage an active exploration with the Member States of the scope for instituting SBIR-like (United States' Small Business Innovation Research Programme) mechanisms at national level.
- The Commission should seek to introduce SBIR-like mechanisms into its own practices and those of relevant European agencies (e.g. Environment Agency, Food Safety Authority, Aviation Safety Agency) and of the Joint Research Centre.
- Insofar as the current rules permit only multi-partner projects, the Commission should actively seek to change the rules so as to accommodate an SBIR-like mechanism.

Raising SMEs' Absorption Capacity

- SMEs should be helped to be more innovative, for example through pilot projects and through ideas competitions with implementation awards.
- SME implementation awards are needed to help transform innovative ideas into products and services ready for market.

Facilitate the Supply of Qualified Staff to Support Innovation in SMEs

- Upgrade the Marie Curie mobility programmes to support postgraduates, PhD students, engineers, technicians carrying out innovation and R&D projects for SMEs.
- Staff-cost grants are needed to allow SMEs to hire qualified staff, on a time-limited basis, for undertaking innovation projects.

Improve Knowledge- and Technology Transfer between Research and SMEs

- Establish enterprise-oriented technology transfer units which are familiar with specific SME problems.

- The funding of innovation consultants is an important measure to support SMEs efficiently at an early stage in R&D projects as well as to accelerate the diffusion of R&D results.
- Universities and other research organisations should be encouraged to open up their research programmes to SMEs through the award of financial incentives, including payment by participating SMEs according to “distance from market”.

INTRODUCTION

The core remit of this EURAB study was to develop concrete policy recommendations, short-term and long-term, based on SMEs' specific approaches to and needs for R&D and innovation.

This report on WG9's activities is in two parts. The first part reviews the economic and social importance of SMEs, key characteristics of them in relation to R&D and innovation, and their participation in the European Union's Framework Programmes. The second part of the report presents recommendations to the European Commission and Member States.

PART I: REVIEW

THE IMPORTANCE OF THE SME SECTOR¹

The EU defines an SME principally as an enterprise with less than 250 employees. Additional criteria relate to turnover and independence.

- SMEs with less than 10 employees are **micro** enterprises.
- Those with 10-49 employees are **small** enterprises.
- Those with 50-249 employees are **medium-sized** enterprises.

The European Union's SME population is extremely large and very heterogeneous. There are between 8 and 12 million SMEs in the EU-15, depending in particular upon how one counts the self-employed, and a further 2.5 million SMEs in the new Member States. They account for over 99% of all enterprises and for two-thirds of all employment in the enterprise sector. The SME sector is a very diverse group, ranging from the local corner shop to sophisticated hi-tech start-ups.

| | % of all enterprises | | % of persons employed in enterprises | | % of turnover of enterprises | |
|--------|----------------------|------|--------------------------------------|-----------------|------------------------------|-----------------|
| | EU | US | EU | US ² | EU | US ² |
| Micro | 89.1 | 78.5 | 28.7 | 11.1 | 20.9 | 10.1 |
| Small | 9.1 | 19.8 | 21.3 | 25.1 | 20.6 | 19.0 |
| Medium | 1.5 | 1.5 | 16.1 | 14.1 | 19.7 | 11.8 |
| Large | 0.3 | 0.3 | 33.8 | 49.7 | 38.8 | 59.1 |

Comparisons with the US are instructive in the light of the Barcelona objective of achieving in Europe R&D spending equivalent to 3% of GNP, of which two-thirds by business, the Barcelona target being motivated essentially by a perceived need to catch up with the United States.

¹ The data cited in this section are drawn in the main from official Eurostat publications as well as from two further publications:

Eurostat: *SMEs in Europe: Competitiveness, Innovation and the Knowledge-driven Economy* (2002).

Ugur Muldur: *Is Capital Optimally Allocated in the Overall Process of European Innovation?* (2001)

Comité Richelieu : *Le Livre Blanc des PME innovantes: Vers un Small Business Act européen?* (2003)

A striking difference between Europe and North America is the much smaller proportion of “small” firms in Europe (10-49 employees). Other data show that SMEs in the United States tend to be larger than their European counterparts. They also show that American SMEs are much more likely to engage in R&D than their European counterparts. On average, an American small firm has an R&D budget 7-8 times higher than a European small firm. This difference, plus the larger number of small firms in the US, is alone sufficient to explain almost all of the United States’ higher spending on R&D compared with Europe. Other figures show that there is no significant difference between large firms in Europe and the United States in the total amount they spend on R&D. This evidence suggests that higher SME spending on research in Europe, if achievable, could play a key role in helping to achieve the Barcelona 3% target.

Striking, too, is the fact that 75% of US large firms founded since 1980 grew from scratch. By contrast, more than 80% of the large European firms created since 1980 were the result of mergers of pre-existing firms. This comparison suggests that part of Europe’s weakness is that new firms, with new products and services, fail to grow significantly.

SMEs account for two-thirds of total employment in the EU. They are the principal generators of new jobs, especially new and young firms. Estimates suggest that almost half of all new jobs in Europe are created by less than 5% of, in the main, high-tech SMEs. Recent American evidence shows that of the 24 million new jobs created in the United States in the period 1979-1995, about 75% were created by fewer than 10% of small firms. This finding again underlines the importance of new firms which grow.

SMEs are estimated to account for approximately 65% of GDP in Europe. This compares with an SME share in GDP of just 45% in the United States. Thus two-thirds of European output is attributable to a sector characterised by relatively low levels of innovation

SMEs are an important source of flexibility in European supply and value chains - absorbing cost pressures, re-organising work processes, and introducing new technologies more rapidly than large firms could do alone. They ensure essential flexibility in labour and other markets that otherwise would tend towards rigidity. By imitation and innovation, they enrich the market supply of goods and services.

In some regions, SMEs are practically the only private-sector employer. This underlies their social in addition to their economic importance. SMEs are also important providers of vocational training.

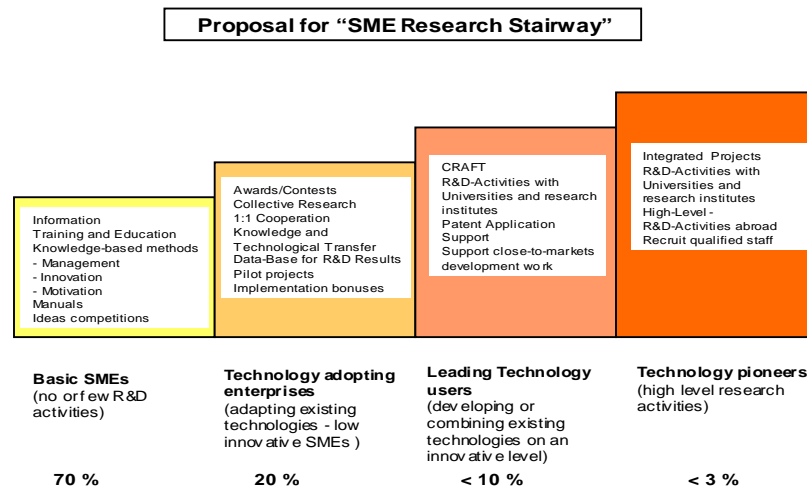
SMEs, R&D, AND INNOVATION

Both the Framework Programme and the European Research Area are focussed on research, and indeed more on research than on development.

The vast majority of SMEs do not engage in research in a formal sense. By contrast, the vast majority of SMEs do innovate. They improve their existing products and services, usually in small step-by-step ways (incremental innovation). More rarely, they take a major risk and introduce new products and services (radical innovation). The new knowledge required for innovation comes sometimes from research. More frequently it comes from listening to customers and suppliers, observing competitors, talking to potential customers, experimenting with present products and services, etc. It is important to realise that innovation in SMEs is motivated mostly by the almost daily struggle to survive rather than by a long-term strategic

development plan. Time horizons are short, resources are lacking, and solutions have to be practical and quick. We shall return to the distinction between research and innovation, and to the policy consequences which follow, later.

The propensity of SMEs to engage in R&D and technological innovation is highly variable. In order to come to practical grips with this diversity, a reductionist, policy-relevant typology is needed.



The typology used indicates that the vast majority of SMEs, about 70%, undertake no or little R&D. At the other extreme, a very small number, less than 3%, is involved in leading-edge research. In between these extremes, some 30% of SMEs regularly develop, apply or acquire technology. That is a large number - of the order of three million enterprises in EU-15. The <13% of SMEs which the typology indicates as technology-based innovators ("*leading technology users*", "*technology pioneers*") number about 1.3 million EU-15 firms.

This typology has two particular merits. First, it suggests the need for policies segmented according to the different categories of SMEs, and the typology indicates already some of the typical support needs and programme types corresponding to the different categories. Second, the typology proposes a broad strategic policy objective, namely to help individual SMEs to move from left to right, step-by-step, along the horizontal axis. Hence the typology's title: "SME Research Stairway".

SMEs AND THE EU FRAMEWORK PROGRAMMES

SMEs have two possibilities for participating in the EU Framework Programmes. First, there are specific programmes reserved for them: cooperative (CRAFT) and collective research. Second, they may participate in the other, thematic programmes which are open to all firms.

In the Fifth Framework Programme, the total number of SMEs participating during the life-time of the programme was less than 15,000. About 61% of these "SME participations"² were in the SME-specific programmes; 39% were in the other thematic programmes open to all firms.

² Indeed, DG Research does not count individual participating enterprises, but "participations", i.e. a firm is counted once each time for each project in which it participates. Thus, an SME which participates in three FP-funded projects is counted three times. Moreover, the figures on SME participation have to be interpreted with further

If one compares the stock of 8-12 million SMEs in the EU with the less than 15,000 SME participations in FP5, the contrast is stark. Over an operational period of about four years, FP5 reached about 1 SME in 650. If we take the roughly 1.3 million innovative SMEs (see preceding section) as our base figure, we can calculate that FP5 reached somewhat less than 1 SME in 100 during the four years of the programme.

The €1.43 billion spent on SMEs in FP5 was equivalent to about 11.3% of the total FP5 budget excluding the funds reserved for the JRC. That figure compares with the Commission's ambition of spending 15% of the FP6 budget on SMEs.

Provisional estimates from the first Calls for Proposals of the Sixth Framework Programme, which relate to "main-listed" proposals following evaluation, indicate that SMEs accounted for 13.1% of the total requested financial support. A final figure will only be known after contract negotiations have been concluded, but the indication is that the target of 15% for SMEs is not being achieved and this has prompted the Commission to implement remedial action.

SME participation in CRAFT is severely and increasingly constrained by a growing imbalance between rising demand and a too small budget. We understand that the first FP6 CRAFT Call for Proposals generated approximately 650 proposals, of which slightly less than 20% received funding. The second Call appears to have generated some 1000 proposals, of which again probably less than 20% will be funded given the available budget. Such low success rates are discouraging³. Corresponding recommendations are made in Part II.

CONCLUSIONS FROM THE ANALYSIS

- SMEs are a large diversified sector, performing vital functions in both economic and social life. They need and merit support.
- Achievement of the Barcelona objective will need the successful mobilisation of the SME sector.
- A substantial number of SMEs are technologically "literate" and use technology to innovate. Some do R&D. Others use R&D results. Many innovate.
- Europe needs more new and small firms that grow. This should be a prime focus of future European SME policy.
- Framework Programme resources for SMEs are very limited relative to demand. More resources should be made available.

caution. The Commission counts as an SME any Framework Programme contractor meeting the SME definition (i.e. the criteria of size, turnover, and independence). Thus, Framework Programme contractors which are research performers and which meet the SME definition are also counted as SMEs. Disaggregated analysis of the 5FP figures has shown that approximately two-thirds of spending benefited private, for-profit organisations - presumably "true" SMEs in the conventional sense of producers of goods and services - while one third went to non-profit organisations, many of which were most probably research performers. Making allowance for this, the figure for "true" SME spending in the 5th Framework Programme was possibly less than 8% rather than the 11.3% noted elsewhere in this section.

³ Moreover, success rates have declined since FP5. The FP6 budget for SME-specific measures is lower than the FP5 budget and the success rate has dropped from about 30% in FP5 to around 20% in FP6.

PART II: RECOMMENDATIONS

EURAB recommendations are short-term and long-term. We begin with the short-term recommendations for improving FP6.

II.1 RECOMMENDATIONS FOR IMPROVING FP6

Achieving the 15% SME Target and the New Instruments

The target of 15% of FP6 priority thematic area spending for SMEs is ambitious. The available figures from the first FP6 Calls for Proposals, although still provisional, give cause for concern: SME participation, indeed enterprise participation generally, is below target.

SME participation may improve as Economic and Technological Intelligence actions are launched. It may also improve if Integrated Projects and Networks of Excellence use the possibility to integrate SMEs at a later stage, although one can question how many will wish to do so spontaneously.

Fundamentally, it has to be recognised that the new instruments are not in tune with the needs and interests of the vast majority of SMEs, other than some of the *technology pioneers* of the typology.

The needs of the great majority of SMEs with respect to research are for **short-run projects**, of an **applied character**, focussed on their **specific needs**. Large-scale consortia, pursuing long-term objectives, removed from immediate application, and from the immediate needs of the participants, are not for them.

There is good reason to doubt, therefore, that the objective of 15% spending for SMEs will be achieved (and especially if the target is interpreted as spending on SMEs in the conventional sense of producer firms – see footnote, p. 4).

In order to increase the chances of reaching the 15% target, and to offer support more adapted to the needs of a larger number of SMEs, a simple solution would be to transfer budget from the new instruments to the more SME-relevant instruments. Thus, in the view of EURAB, the present budget for CRAFT and Collective Research should be substantially increased, by transferring funds – within the SME 15% “envelope” – from the Priority Thematic Areas⁴. Moreover, in view of the impending enlargement of the Union and the needs of SMEs in the new Member States, we would suggest more than doubling the budget for Cooperative and Collective Research to at least €1 billion.

⁴ If the proposed reallocation of funds should be difficult to achieve because the budget lines set by Council and Parliament are not readily susceptible to revision, then the Commission should instead increase funding for STREPs. This would be a second-best, but useful alternative. There can be no formal objection to such a revision, since there is no specific budgetary allocation to the different instrument types. The increased budget for STREPs should be widely advertised and SME participation should be specifically encouraged.

- *The new instruments are not suited to the needs of the vast majority of SMEs.*
- *It seems doubtful that the FP6 15% SME target can be achieved.*
- *The Commission should increase FP6 spending on CRAFT and Collective Research to at least €1 billion.*

Co-operative and Collective Research

The Framework Programme's co-operative research programme, CRAFT, has become a significant success. It has stimulated SME cross-border trade and economic partnerships out of research partnerships. The programme is attuned to the needs of innovative medium-sized businesses in regard to manpower, financial and organisational situation and planning intervals. The number of applications has risen significantly.

CRAFT has thus become well established. The high demand for its limited funds indicates that it is much liked and that it is under-resourced. A substantial increase in resources is required, as proposed in the previous paragraph. In addition, further improvements are necessary.

EURAB shares the widely expressed regret that met the Commission's decision to abolish the former **CRAFT Exploratory Award Scheme**. While in some countries national or regional schemes have provided a replacement, this has not happened everywhere. Treatment is thus unequal and some SMEs which could benefit from CRAFT are most probably failing to do so. The Commission should reinstate the CRAFT Exploratory Award Scheme. One option, which would seem to be well in tune with the philosophy of the ERA, is an Exploratory Award scheme **co-financed with the Member States** and administered by them. This could possibly be done in conjunction with the **EU Structural Funds**. Special consideration should be given to the reinstatement of CRAFT Exploratory Awards in the **new Member States** where SMEs are an important entrepreneurial seed stock and need special help to succeed in European markets.

A **two-step application procedure**, such as employed for Collective Research, would provide a low-threshold entry into CRAFT and reduce a significant bureaucratic hurdle.

Open Calls for Proposals, as employed previously for CRAFT, are more suited to SMEs' short time horizons than the present arrangement of fixed cut-off dates. Open Calls should be re-instated.

Long payment delays can provoke serious cash-flow problems for SMEs. Commission **payment procedures should be accelerated**. Failing that, a generous regime of **advance payments** should be introduced.

More flexible, SME-oriented **evaluation criteria** are needed. SMEs must be able to decide for themselves how the research objective is to be reached and with what resources. It should not matter how many partners are involved, nor from which

Member States these partners come. The application criteria for CRAFT should be relaxed concerning the number of SMEs and the research institutions involved.

The management and administration of the Framework Programme's SME measures continues to suffer from complicated procedures, which lead to delays and so reduce their value to SMEs. Many of these difficulties could probably be lifted if more **management resources** were allocated so as better to cope with the large volume of enquiries and applications for the SME-specific measures. Issues of management and administration are addressed again later, in the section on FP7.

In order to significantly improve CRAFT for larger numbers of SMEs, provision should be made for funding **shorter and smaller projects**. This would, inevitably, increase the management burden. Consideration should, therefore, be given to the possibilities of achieving this **in co-operation with the Member States**, possibly in conjunction with the **EU Structural Funds**.

With regard to **Collective Research**, EURAB believes that the scheme has made a promising start and deserves to be continued. Resources should be increased in line with the need to encourage SME participation in the Framework Programme.

- *The budget for Co-operative and Collective Research should be substantially increased.*
- *More management resources should be allocated to CRAFT and Collective research in order to permit them to function in a more SME-responsive and -adapted manner.*
- *The application criteria for CRAFT should be relaxed concerning the number of SME's and research institutions.*
- *The CRAFT Exploratory Award Scheme should be re-introduced. It is especially needed in the enlargement countries.*
- *Open Calls for Proposals and two-step proposal procedures should be introduced. Payment facilities should be improved.*
- *Requirements with regard to the number of participating SMEs and research institutions should be relaxed.*
- *The scope for improving the management of CRAFT, and for funding smaller and shorter projects, by greater co-operation with the Member States and in conjunction with the Structural Fund should be explored.*

II.2 RECOMMENDATIONS FOR FUTURE POLICY

The Commission has recently published its proposals for the 2007-2013 Financial Perspective. A section is devoted to R&D, but contains no reference to SMEs. EURAB regrets this omission. It believes that SMEs should remain a priority target of the Union's R&D policy. The Barcelona objective will not be achieved without a successful mobilisation of SMEs.

In order to cater to the needs of the largest possible number of SMEs able to benefit from European measures, policy must provide instruments adapted to their specific needs, which include support for smaller and shorter R&D projects. It has been evident for some time that the Commission has difficulty managing larger numbers of smaller and shorter projects. Increased management manpower has long been necessary but has never been sufficiently forthcoming.

Shortly after the start of this study, clear signs began to emerge from within DG Research that the Commission is now considering the “externalisation” of the SME-specific measures in a future Framework Programme. This is in line with the remarks made in the Commission’s Financial Perspective document.

II.2.1 THE FUTURE ORGANISATION OF SME SUPPORT MEASURES

The Commission appears to be considering two main alternative externalisation options, the creation of a Programme Agency or externalisation to a “stakeholder organisation”. To them EURAB would add a third, greater cooperation with the Member States in conjunction with the Structural Funds.

1. Programme Agency

The Commission has launched a cost-benefit analysis to examine the merits of establishing a Programme Agency to undertake the future implementation of SME-specific measures. Such an agency would be established outside but under the management of the Commission. Such a solution would have the apparent merit of continuity inasmuch as it would presumably substantially preserve the present administrative arrangements, instruments, budgets, etc. On the other hand, it would most probably not resolve other frequently criticised aspects of the management of CRAFT - e.g. bureaucratic procedures, payment delays, etc. - since a Commission-managed Programme Agency would be bound to apply Commission procedures.

2. Stakeholder Organisation

A “stakeholder-organisation” solution would require a group of stakeholders from several Member States to establish a European entity with a mission to support R&D and innovation in SMEs. In view of the ERA objectives, the Commission would be particularly pleased to see a group of Member States take an “Article 169” initiative to create a structure for promoting SMEs at European level. Article 169 initiatives are something new. To date there is only one - still young and substantially untested – precedent. It is therefore difficult to judge whether such a solution will find favour with the Member States.

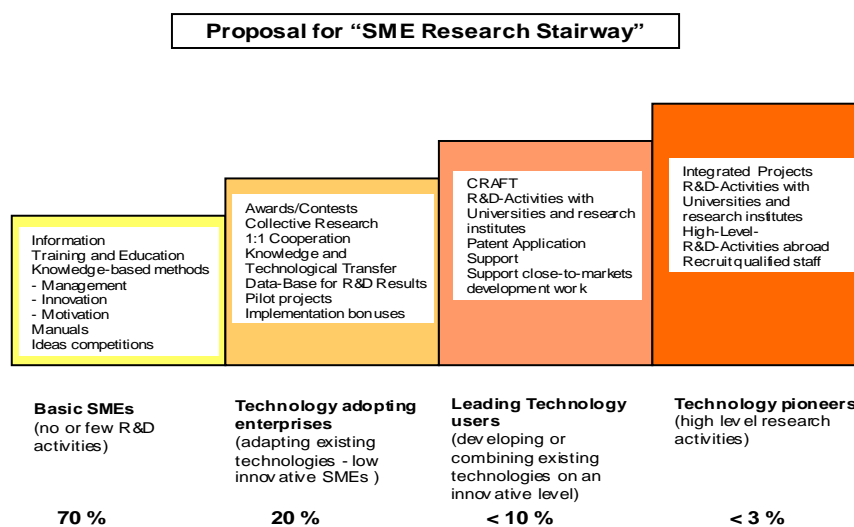
3. Structural Fund Method/Regional Approach

This is the third alternative, proposed by EURAB. Most spending under the Structural Funds is on projects nominated by the Member States within a framework of European policy objectives. The Structural Funds “method” is in effect a decentralised form of management of Community policy and gives scope for adapting to national circumstances. EURAB believes that this same method could be suitable for managing certain aspects, at least, of future European R&D measures for SMEs. Some examples are given at various places in this report.

Which of the above solutions is or are the most appropriate is something which Community and national policy makers must decide in concert. The second and third options (stakeholder organisation and Structural Funds) raise clearly the question of subsidiarity, i.e. of *who should do what?* in the multi-level policy context of the European Union. Considerations of efficiency dictate that governments at different levels should pursue policies which complement one another, which do not duplicate or compete with one another. The SME typology presented earlier, with its many types of policy initiative addressed to different categories of SME, raises the same question of subsidiarity.

The SME Research Stairway: SME Support Needs and SME Policy in a Multi-level European Research Area

The SME typology introduced earlier, and which is reproduced here for the reader's convenience, emphasises that different types of SME have different support needs and that a broad objective of policy should be to help individual SMEs to climb the "research stairway".



Basic SMEs (left-hand column of the typology), which have little or no R&D activity, would benefit from measures to stimulate innovation, e.g. information, qualification in knowledge-based methods of innovation management, coaching in the innovation process, ideas competitions, improved technology transfer, etc.

Technology-adapting enterprises have different support needs, e.g. ideas competitions combined with implementation awards, support for technology-transfer actions, involvement in pilot projects, making available R&D results for own innovation projects, participation in collective research measures, etc. In general these SME's could strongly benefit from a good network of contacts with suppliers, R&D institutions and other companies.

Leading Technology Users, which use new technologies at an early stage and develop the respective techniques with their own research capacities, can benefit from enhanced R&D activities with universities and external research bodies, CRAFT projects, support in securing and using industrial property rights, support for market-oriented R&D projects.

Technology Pioneers: participation in Integrated Projects, R&D activities with trans-national partners at high level, mobility awards for recruiting scientific staff, etc.

It is evident that many such forms of support for SMEs can only be effective if designed and delivered proximately. Assistance in the form of management training or market information, for example, has to be tailored to the needs of the individual firm in order to have real value.

EURAB is conscious that SME support measures at European level should have their European specificity and should complement those operated at national and sub-national levels. It is conscious, too, however, that the policy mix of local, regional, national and European measures is often not as coherent in practice as it could and should be. There are critical gaps in support, e.g. too much focus on research, not enough focus on innovation, and a lack of coordination between schemes, e.g. the fact of having to apply for different schemes, at different levels of government, at different phases in the innovation process engenders delays and duplicates due diligence.

Two EU Presidency Conferences in 2004 to Review SME Support Mechanisms in Europe

It was for these reasons that EURAB took the initiative to propose to the Irish and Dutch EU Presidencies that they should organise two coordinated SME policy conferences in 2004 with the objective of a fundamental review of SME support needs, the policies and programmes provided at the different levels of government (European, national, regional), and the most appropriate manner of organising and implementing European SME policy.

The Irish conference will take place on June 3rd and 4th. The Dutch conference is scheduled for October 12th and 13th. The aim of the Irish conference will be to explore current policy approaches to supporting SMEs in Europe and to make recommendations for improving them. The items discussed will include the future organisation and management of European SME measures. The recommendations made at the Irish conference will be worked up into concrete proposals, which will be tabled and discussed at the Dutch conference.

It is EURAB's hope that these two conferences will serve to strengthen SME support policies in Europe by:

- Raising awareness of the social and economic importance of the SME sector
- Sharing best practice in the design and implementation of support policies
- Encouraging governments at all levels to improve their support policies and to better align them so as to close critical gaps.

- Facilitating a future strong European SME policy, operating in complement to national and sub-national policies.

II.2.2 PROPOSALS FOR NEW AND IMPROVED POLICY INSTRUMENTS

High-Growth SMEs: A Priority for Future European Policy

Europe has a shortage of high-growth SMEs, as was evidenced in the earlier analysis. They should be a prime focus of future European SME policy. High-growth-potential SMEs are typically young innovative firms - very often, but not necessarily, hi-tech - seeking to exploit and develop niche markets. Those markets will typically be viable only on a supra-national scale (European, global). Assistance directed at helping such SMEs to become European and global players is adequate justification (“European added value”) for a European programme to support them.

A focus on innovative, high-growth SMEs requires a radical change in mind-set. The focus must be innovation. R&D is a necessary but not sufficient component of innovation policy. Europe currently has an SME R&D policy, but no operational innovation policy⁵. More support must be given to close-to-market research. Ten years after the *Green Paper on Innovation* and the *Innovation Action Plan*, the European Union continues in the main to fund ideas and inventions, not innovations.

Policy support for innovative high-growth SMEs will need to be granted more on the basis of hard-headed business plans than of promised scientific excellence. An objective should be to encourage, and ultimately require, mixed public-private funding models as a sign of the practical worth, combined with high risk, of the proposed project. The more successes of public leveraging of private investment, the easier it will be to motivate further private investment in the future. In this way, a gradual shift towards more entrepreneurial investment and a more dynamic venture capital environment in Europe can be achieved.

Coordinated national and European action is needed to further stimulate seed and venture capital in Europe. The European Commission should take the lead in organising the necessary discussions and coordinated action. Issues to be addressed include:

- Incentives to attract private capital into venture funds
- Advantageous tax treatment for SMEs and tax relief for seed financing and start-ups
- Guarantee funds to help poorly capitalised SMEs to raise commercial credit.

- ***High-growth-potential SMEs should be a prime focus of future European policy.***
- ***The principal criteria for supporting SMEs should be business/innovation criteria, not criteria related to scientific excellence.***
- ***Action is required to stimulate seed and venture capital in Europe.***

⁵ Current European Commission innovation policy is essentially about exhorting others - Member-States, private actors - to do more.

Introduce SBIR-like SME-support Mechanisms as already proposed by EURAB Working Group 5.

There is widespread agreement amongst informed observers that the United States' Small Business Innovation Research (SBIR) Programme plays a key role in stimulating the emergence and growth of high-technology innovative businesses in that country. The programme spends some \$ 1 billion every year, providing up to 100%, non-reimbursable funding to innovative SMEs.

EURAB WG5 earlier proposed that: (i) SBIR-like mechanisms should be introduced into FP6 Integrated Projects and (ii) into national programmes. The Commission responded to the first point that the Framework Programme caters for multi-partner projects and so "would not normally be able to handle it in identical form". To the second point it replied that it is for the Member States to decide⁶.

- *The Commission should take the initiative to engage an active exploration with the Member States of the scope for instituting SBIR-like mechanisms at national level.*
- *The Commission should seek to introduce SBIR-like mechanisms into its own practices and those of relevant European agencies (e.g. Environment Agency, Food Safety Authority, Aviation Safety Agency) and of the Joint Research Centre.*
- *Insofar as the current rules permit only multi-partner projects, the Commission should actively seek to change the rules so as to accommodate an SBIR-like mechanism.*

Raising SMEs' Absorption Capacity

SMEs' innovative abilities are underdeveloped because of a lack of innovative spirit, organisational weakness or lack of knowledge in the field of innovation management. SMEs need information about existing know-how outside their own company but they have great difficulty in acquiring, adapting and using external knowledge. One of the reasons for this is SMEs' low absorption capacity and their lack of qualified staff.

SMEs need training in business skills, knowledge management, R&D management and exploiting R&D results commercially. SMEs' readiness to participate in the EU framework programmes must be strengthened through targeted instruments.

SME's often grow and prosper in the neighbourhood of large companies. Networks of large and small enterprises are a valuable system of promoting innovation and stimulating SME's.

- *SMEs should be helped to be more innovative, for example through pilot*

⁶ The UK government has introduced a scheme similar to SBIR, called the Small Business Research Initiative (SBRI): <http://www.sbri.org.uk/aboutus.asp>.

- projects and through ideas competitions with implementation awards.*
- *SME implementation awards are needed to help transform innovative ideas into products and services ready for market.*

Facilitate the Supply of Qualified Staff for Innovation in SMEs

Due to their limited financial resources, SMEs have few possibilities to find the staff they need for carrying out R&D and innovation projects. SMEs have few qualified staff and often they cannot be released for R&D activities. The more complex innovative measures nowadays require a high technological and process-oriented know-how. In most cases a scientific-technological university or similar background is a prerequisite.

Measures such as staff-cost grants should be introduced to enable scientists and engineers to carry out R&D activities for a certain amount of time. Thus, companies' innovation efforts could be intensified and be supported efficiently. The provision of external know-how as well as of qualified staff has to be flanked by exchange and mobility programmes. Furthermore, better coordination between universities and SMEs is necessary: student research projects (“theses”, “dissertations”) as well as practical training could be done in companies. A good example is a UK system in which SME's can apply for a PhD student for a period of three years.

- *Upgrade the Marie Curie mobility programmes to support postgraduates, PhD students, engineers, technicians carrying out innovation and R&D projects to the benefit of SMEs.*
- *Staff-cost grants are needed to allow SMEs to hire qualified staff, on a time-limited basis, for undertaking innovation projects.*

Improvement of Knowledge and Technology Transfer between Research and SMEs

Many SMEs use technology to innovate without engaging in formal R&D. There is a need for mechanisms which improve the flow of “ready-to-use” technology for SMEs. **Collective research** is one route, and EURAB encourages the Commission to expand its present collective-research programme.

EURAB believes that the Commission could do much more to encourage the **transfer of research results from FP-funded projects**. The Commission's efforts thus far to increase technology exploitation from FP project results have been insufficient. The **Innovation Cells** within the Specific Programmes of FP5, for example, do not appear to have achieved any significant effect in raising or accelerating exploitation rates. The **Technology Implementation Plans** required of project proposers appear rarely to have been systematically followed up and, in consequence, frequently have not been implemented or only partially. The **Innovation Relay Centres** have done a useful job in helping to exploit and diffuse technologies. But their role is limited in the main to brokerage between previously articulated, or relatively easily stimulated, technology supply and demand.

EURAB proposes that future FP funding should comprise an “**obligation to exploit**” as a *quid pro quo* for public funding. Those who do not exploit for their own purposes should be under an obligation to make their results available for third-party exploitation. The Commission should run a **programme to undertake this exploitation** work. The

programme would also be available to those who exploit themselves but who are willing to make those results available for third-party exploitation. An approach of this kind, offered as a pro-active service, would involve:

- Systematic screening of FP project results in order to identify technologies with verified, potential industrial or other practical application.
- Proving of the selected technologies - their science, application relevance, scalability etc. - by further investigation, where necessary.
- Further developing and adapting selected technologies, where necessary, in accordance with identified actual or probable demand.
- Identifying SMEs and other industrial partners with the capability to apply the technology profitably.

Innovations must also be seen in a wider context: R&D is necessary. But the knowledge derived from these sources must be used, must be absorbed by companies and transferred into new products and services. Only then R&D promotion has its justification. SMEs are interested in product innovations, in new production processes and applications as well as in new materials. Because of their limited staff resources, they need better technology transfer. They need external support measures not only for the innovation process as such, but also for the marketing of innovative products and services. An interesting model is the German “**Transfer via Heads**” network in which consultants act as facilitators and moderators between research and enterprises, helping to accelerate the diffusion of innovation know-how and its transfer into innovative products and services.

Technology Transfer is the “Missing link” in FP6. It is necessary to translate project findings into SME-compatible results. Because of their limited resources SMEs rely on external Know-How for developing and improving their products and services. On the one hand, new products and services require the application of expert-knowledge from basic and pre-competitive research. On the other hand, the marketing of own innovation is a considerable effort for SMEs, which cannot be shouldered by SMEs on their own.

Another route to improved knowledge transfer from research to SMEs is to provide research organisations (universities, RTOs) with incentives to work with those companies. A programme funded by the Dutch Ministry of Economics might be copied by other governments. This Dutch *Cofinancing Programme* pays research organisations for letting SMEs participate with their ideas and needs in their research programmes. The participating firms pay a contribution according to “distance to market”: 10% for fundamental research, 25% where potential applications are identifiable, and 50% if there is clear market potential. The IPR stays with the research organisation, which makes it available after the project to all-comers at market prices. The programme is aimed less at subsidising SMEs than at stimulating research organisations to work with them. A recent evaluation of the Dutch programme estimated that the following benefits had been achieved:

| | |
|------------------------------------|-------------|
| Public funds invested | €7 million |
| Increased turnover in industry | €50 million |
| Cost reduction in industry | €40 million |
| Increased profit in industry | €5 million |
| Additional investments by industry | €9 million |

- *Establishing enterprise-oriented technology transfer units, which are familiar with specific SME problems.*
- *The funding of innovation consultants is an important measure to support SMEs efficiently at an early stage in R&D projects as well as to accelerate the diffusion of R&D results...*
- *Universities and other research organisations should be encouraged to open up their research programmes to SMEs through the award of financial incentives, including payment by participating SMEs according to “distance from market”.*

ANNEXE

Membership of EURAB Working Group 9

EURAB Working Group 9 was officially launched following the 2nd April 2003 plenary session of EURAB, although some members of the WG had begun preparatory work in February 2003 already.

Members: Jan Dekker (Chairman), Gerry Byrne, Helena Illnerová (from April), Norbert Króo, Rainer Neumann, Enrico Ottolini, Rolf Tarrach (from April), Yannis Tzavaras (from April).

Rapporteur: Christopher John Hull.

Philippe Galiay, DG Research, participated at all meetings.

Xabier Goenaga, then Head of Unit “Research and SMEs”, DG Research, participated at one meeting. Joachim Ball and Reinirus Nieland, both from the same Unit of DG Research, also each attended one meeting.

EURAB Working Group 9 would like to thank the “Research and SMEs” Unit of DG Research for its assistance in supplying statistical data and documentary information.

Meetings

The Working Group met as follows:

- 4th March 2003 (informal telephone conference prior to the formal constitution of the WG)
- 1st April 2003 (informal meeting prior to formal constitution of the WG)
- 16th June 2003
- 17th September 2003
- 14th October 2003 (teleconference)
- 2nd December 2003
- 11th March 2004