



European
Research Area

EUROPEAN POLICY BRIEF

KEINS

Knowledge-Intensive Entrepreneurship: Harnessing Europe's Potential

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INTRODUCTION

How can Europe make better use of its knowledge-based resources?

To achieve its goal of long-term economic competitiveness, the European Union must harness its intellectual resources. Fostering a culture of innovation that rewards knowledge creation is one part of the solution. But creating knowledge for its own sake is not enough.

What are the obstacles to knowledge-intensive entrepreneurship?

The larger challenge facing Europe is to systematically exploit the economic potential of its knowledge-based assets.

Many EU member states are making enormous contributions to the pool of human knowledge in a broad range of disciplines. Much of this knowledge, however, is produced in relative isolation and never properly utilized. Other EU countries, particularly the newer member states, lack both sufficient knowledge creation infrastructure and the networks needed to commercially exercise their knowledge-intensive capabilities.

To assure Europe's future prosperity, a more systematic entrepreneurial approach to knowledge creation and utilization has to be developed.

This effort needs to integrate the activities of all key stakeholders: government entities, academic institutions, corporations and small and medium-sized enterprises. An integrative approach to knowledge-intensive entrepreneurship could be instrumental in helping the European Union to successfully translate scientific advances into marketable goods and services.

Knowledge creation is only part of the solution

Examination of entrepreneurial activity in EU countries (with special emphasis on new member states) shows that large investments in knowledge generation alone may not lead to economic growth because of barriers to converting research into commercialized applications. A transformative mechanism (knowledge-intensive entrepreneurship) is needed to overcome these barriers and convert new knowledge into economic activity.

Knowledge-intensive entrepreneurship is region-specific. Regional contexts rich in knowledge are apt to generate more entrepreneurial opportunities. A host of other factors (institutions, laws, traditions, and culture) shape the amount of region-specific entrepreneurship capital.

Because the institutional setting is extremely important, new member countries in particular need support.

In general, knowledge-intensive firms in central and eastern European countries act as knowledge localizers or customizers, adapting global knowledge to local needs in the domestic market, rather than a knowledge-creator generating new solutions for global markets. They are struggling with the challenge of entering export markets with products and services that can achieve global, or at least regional, recognition.

CORPORATE PARADIGMS

This table highlights the differences between the conventional notion of a knowledge-based enterprise (“New technology based firm”) and the type of knowledge-based firm typically found in central and eastern European countries (“CEE knowledge-based firm”).

	NEW TECHNOLOGY-BASED FIRM	CEE KNOWLEDGE-BASED FIRM
Mode of growth	Generic expansion	Productivity-based expansion
Strategic objective	Commercializing results of IPR	Diversifying to exploit organisational capabilities
Model role	‘Gazelle’	Knowledge broker/ Specialized supplier
Structural feature	Trendsetter	Trend spotter
Market orientation	Global market	Domestic market
Key competitive advantage	New-world frontier technology or product	Customer-oriented organisational capabilities
Threshold barrier	IPO	From domestic brand builder and networker to established exporter

The set of characteristics associated with CEE companies here is based on surveys of firms in Croatia, the Czech Republic, Hungary, Lithuania, Poland and Romania.

Knowledge-intensive entrepreneurship does not necessarily mean 'high-tech'

Knowledge intensive entrepreneurship is not confined to high technology sectors. It has become relevant (if not pervasive) in low-tech and traditional industries as well. This applies also to services.

The context of knowledge-intensive entrepreneurship is radically different from sector to sector. Policy intervention is especially important when knowledge-intensive entrepreneurs innovate in new (emerging) technological areas that do not reinforce but rather overturn incumbent firms' asset values.

How do knowledge-intensive entrepreneurs operate?**Networks are key for the creation and survival of knowledge-intensive entrepreneurship.**

In most knowledge-intensive sectors entrepreneurs have become "knowledge operators" who work at the intersection between science, technology, innovation and markets. Stimulating activity in this intersection should therefore be the primary thrust of policy.

These operators – whether they be start-up companies, established corporations or academic institutions - engage in knowledge-intensive entrepreneurship in any of three ways: they utilize existing knowledge, they combine different knowledge assets or they create new knowledge. Many successful entrepreneurs do all three.

Knowledge-intensive operators do not adhere to the popular myth of the entrepreneur as a rugged individualist who single-handedly builds great companies.

They deal with the same factors faced by all new and growing businesses: finding and retaining quality people, accessing capital, developing intensive networking, using a cutting-edge infrastructure and benefiting from advanced institutions.

POLICY APPROACH

Evaluate the context conditions in which knowledge-intensive entrepreneurship takes place. These include innovation systems, sectoral environments and geographical clusters. Both supply-side and demand-side factors are important for linking knowledge-intensive entrepreneurship to regional growth.

Support the generation and application of new knowledge and the building of an advanced knowledge infrastructure.

This means support for basic research, diffusion of knowledge and the effective transmission of science and innovation to the commercial sector and back.

POLICY INSTRUMENTS

Numerous policy instruments can be used to encourage knowledge-intensive entrepreneurship.

These include:

- R&D support
- seed and venture capital
- training and human resource support
- regulation and standardization

National and local policy actors (government ministries and municipalities) must be involved extensively.

CONCLUSIONS

- **Knowledge-intensive entrepreneurship is an inherently systemic policy issue that must be tackled from various angles simultaneously for long-term results.**
- Builders of knowledge-intensive enterprises respond to economic and social incentives that can be influenced to a significant extent by policy.
- Knowledge-intensive entrepreneurship is about the application of knowledge to new activities. Policies need to focus on application and not only on the creation of new knowledge.

RECOMMENDATIONS FOR EU POLICYMAKERS

- **Support not just individual entrepreneurs but networks and systems using a multi-level approach.**
- Promote application of knowledge and not just knowledge creation.
- Encourage new combinations of capabilities that link knowledge creation with application resources.
- Facilitate access to knowledge resources and stimulate interfaces with the market.
- Adapt policies to meet specific needs of differing sectors and regions.
- Avoid popular myth that portrays entrepreneurs as rugged individualists taking wild, uncalculated risks on breakthrough technologies. Focus instead on policies that promote entrepreneurial capabilities together with economic and social incentives.

RECOMMENDATIONS FOR NEW AND PROSPECTIVE EU MEMBER STATES

- **Create policy frameworks that actively discover and learn from successful regional examples of knowledge-intensive entrepreneurship.**
- Support not only excellent, but also locally relevant research.
- **Identify “islands of excellence” and integrate them into knowledge application networks.**
- Support linkages between science, industry and institutions.

What can be done to promote knowledge-intensive entrepreneurship in new EU states?

- Promote knowledge links between domestic and foreign firms.
- Increase R&D funding and invest in knowledge creation infrastructure
- Promote context specific solutions – be they sectoral, national or local – and, therefore, more relaxed interpretations of best practice rules.
- Improve the quantity and quality of both scientific and managerial education.

Project information

This policy brief is based on findings of the research project “Knowledge-Based Entrepreneurship: Institutions, Networks and Systems” (KEINS).

Participants

The project involved researchers at seven different European institutes. Their coordinator was Professor Franco Malerba, director of CESPRI - Center for Research and Innovation and Internationalization - at Bocconi University in Milan, Italy. The other contributors represented institutes in Germany (Max Plank Institute, Jena), the UK (University College London), France (University Louis Pasteur, Strasbourg), Sweden (Chalmers University, Göteborg), Portugal (University of Lisbon) and Poland (Center for Social and Economic Research, Warsaw).

Databases

KEINS developed several databases, the most important of which are:

- the KEINS Database on Academic Inventors (which identifies correlations between previously distinct datasets to produce a more accurate picture of patenting activity among European universities);
- the KEINS Database on New Innovators (which maps regional patterns of patenting activity among new European firms operating in dynamic technological sectors);
- the KEINS Databases on Knowledge Intensive Entrepreneurship in Eastern Europe (which contain original data collected from firms in five new EU member states).

These databases are being made available in the public domain.

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1 000 000 €

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Website

www.cespri.unibocconi.it/keins