

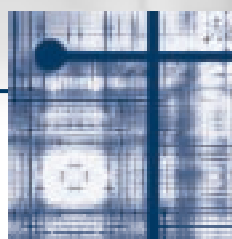
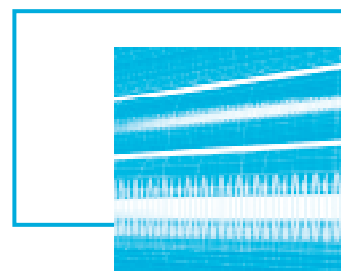
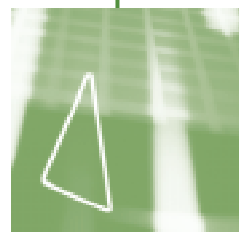
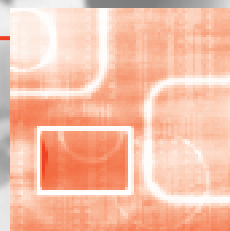


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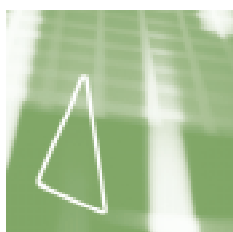
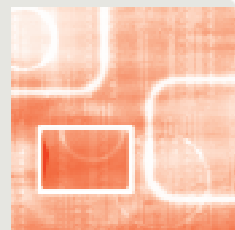
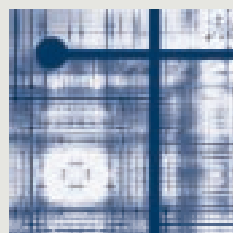
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EXIST: **University-based start-ups** **Status and Prospects**

BMBF PUBLIK



eXIST



Imprint

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The five regional EXIST networks

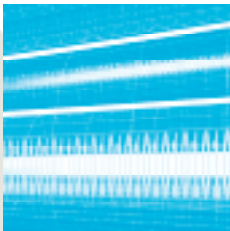
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Foreword




Edelgard Bulmahn,
Federal Minister of Education
and Research

EXIST can already be considered as a successful model for intensifying the transfer of knowledge from higher education institutions via start-ups and, thus, for creating new jobs. The Federal Ministry of Education and Research started the "EXIST – University-based start-ups" programme in 1998 with the aim of increasing the number of innovative company start-ups and of establishing a culture of entrepreneurship in higher education institutions. Three years have passed since then in which a great deal has been achieved. EXIST has caused all involved to change their ways of thinking: in university administrations, professors in all disciplines and students. The willingness to set up a company of one's own has increased greatly thanks to the motivation and better qualifications of potential entrepreneurs.

Within the context of EXIST, five regional networks have so far received funding to the tune of around 25 million Euro. In these networks universities form structures together with external partners from business, science and politics to motivate, train and support entrepreneurs from higher education institutions. Two areas are especially important here: the establishment of the interdisciplinary and practice-oriented theory of entrepreneurship at universities and the speeding up of regional structural change by new, innovative companies.

After three years just under 350 successful start-ups can be traced back to the five networks. Added to this are a large number of other start-up projects that are currently being backed up and supported by the EXIST networks. There has also been a lot of movement in the field of basic and further training in entrepreneurship. The EXIST networks have developed a compact offer of entrepreneurial theory aimed at a public within and also outside the universities. In the 2000 summer semester at the universities in the five EXIST regions over 250 events for potential entrepreneurs were on offer. In almost all of the networks the theory of entrepreneurship is firmly established by means of a Chair for Entrepreneurship.





At the heart of EXIST there are always model projects, the results and experience from which are also of benefit to other higher education regions. The effect of EXIST is not limited to the five networks funded so far; processes of change have also been initiated outside the five winning regions. Many universities have become active in supporting start-ups thanks to the EXIST competition and have developed a range of offers in the theory of entrepreneurship. By early 2000 over 1,400 start-ups had emerged from the 77 active higher education institutions studied at that time. The number of basic and further training events on the subject of start-ups has risen to over 130.

The efforts at EXIST have so far deliberately been limited to the five core regions. The aim was to try out, on a model basis, structures and approaches that support start-ups from universities. In future it will be essential to advance the spread and emulation of EXIST and to safeguard the diffusion of results from the previous EXIST regions. To do this I would like to extend EXIST funding to other regions.

I am pleased to be able to inform you about the successful development of the five EXIST regions so far with this brochure. They present their experience in building up their networks and in training and mentoring young entrepreneurs. The brochure contains a raft of ideas for supporting potential entrepreneurs from higher education establishments. It will make an important contribution towards cementing and spreading the goal of EXIST.



Edelgard Bulmahn

Federal Minister of Education and Research

The “EXIST – University-based start-ups”

Objectives

The “EXIST – University-based start-ups” Programme is based on four guiding principles:

- The permanent establishment of a “culture of entrepreneurship” in teaching, research and administration at universities
- The consistent translation of academic research findings into economic wealth creation – also within the meaning of the universities’ commission to transfer technology as reformulated in Article 2 para. 7 of the Framework Act on Universities [Hochschulrahmengesetz – HRG]
- The targeted encouragement of the great potential for business ideas and start-up personalities at universities and research institutions
- A marked rise in the number of innovative start-ups and, thus, the creation of new and secure jobs

EXIST intends to improve the start-up climate at universities and increase the number of start-ups from academic institutions. Models to motivate, train and support entrepreneurial personalities have been created in five regional networks. In these networks the universities work together with external partners from academia, industry and politics, such as extra-university research institutions, companies, capital donors, technology and start-up centres, management consultancies, chambers of commerce, associations and local authorities. Together they develop an agreed offer for students, employees and graduates.

With EXIST the networks have developed into “areas of excellence” that can serve other universities and initiatives as a model for setting up start-up networks. EXIST is one element of the public support given by the Federal Government for innovative start-ups and, with its special objectives, it contributes towards improving the transfer of knowledge and technology from the universities.

From the Competition to the Five EXIST Regions

EXIST started in December 1997 as a competition of ideas. What was wanted was cooperation between at least three different partners from a region, including a higher education establishment. In total, over 200 higher education institutions took part with 109 idea outlines for regional networks. An independent panel selected the five best regions in a two-stage procedure: biceps (Wuppertal – Hagen), Dresden exists, GET UP (Ilmenau – Jena – Schmalkalden), KEIM (Karlsruhe – Pforzheim) and PUSH! (Stuttgart).

Starting Conditions and Structures

The concepts for action, the starting conditions and where the emphases are set in the five regional networks are very different and to a certain extent reflect the diversity of the regions in the Federal Republic.

Some of the networks in the old Federal Länder are very densely covered with higher education establishments and research institutions and were able to set themselves high targets by virtue of the favourable regional environment. However, in the new Federal Länder the starting situation was very different: industrial cores are still being set up, the higher education institutions are smaller, the population density is lower.

The concepts for action of the EXIST networks build upon the relevant potentials of their region. They also differ in terms of structure and organisation: there are networks that develop more strongly from the higher education establishments involved. In other models, the structure is characterised by strong network coordinators outside the universities and colleges.

Programme

The involvement of the network partners in the network also takes on different forms: some provide direct consultation and offer interlinked teaching events or they provide sponsoring and are nominated as contacts. All the networks have central contact points or agencies that provide advice, guide interested parties through the network and find relevant information and partners for them.

Interdisciplinary Activities

The EXIST programme is accompanied by interdisciplinary initiatives. Scientific support research by the Fraunhofer-Institut für Systemtechnik und Innovationsforschung (ISI), presented from page 60 onwards, and nationwide public relations work deserve mention here. The "EXIST News" is published four times a year. Publications and studies regularly appear on individual subjects and questions in the field of "entrepreneurial independence".

The internet is also used: all of the information is brought together at www.exist.de. This includes a project database, documentation on the companies founded within the framework of EXIST as well as a network map with an overview of relevant initiatives outside the EXIST regions.

In addition to funding for structures (such as the establishment of the networks), there are also elements of individual funding in EXIST: EXIST Seed funds the identification and development of promising business ideas at higher education institutions in the EXIST regions. With EXIST Seed students, graduates and academics at the universities can receive payment for up to one year for living expenses as well as a lump sum for coaching and preparation for the start-up so that they can develop an idea into a business plan at the higher education establishment (more details can be found on page 58 ff.).



The EXIST news newsletter appears four times a year and provides information about the EXIST programme and all start-up activities at German universities.

The EXIST HighTEPP (High Technology Entrepreneurship Postgraduate Programme, page 57) college for postgraduates is a joint programme of the universities in Jena, Bamberg and Regensburg. In addition to imparting skills to young academics, its aim is also to support start-up projects and to train managers for dynamic high-tech companies. The college has an interdisciplinary orientation and is open to graduates from economic and scientific backgrounds.

Results and Experience

In early 2001 the EXIST Expert Advisory Board got personal information of the state of affairs on the spot in its interim evaluation of the five networks; on the whole it was very satisfied with the work done in the universities and regions. The regional approach of the EXIST programme has proved to be right, as has the focus on higher education establishments. After almost three years of EXIST initiatives, clearly different and some successful and some less successful procedures can be identified for the various questions.

For example, it has been seen that the measures should largely be supported by higher education establishments – but not by individual professors alone or by circumventing the professors. The approach that has proved to be of value in passing on knowledge to students is events organised by members of the regular teaching staff, especially if they are enhanced by entrepreneurial personalities from practice. The questions as to whether and how the teaching offers should be incorporated in syllabuses or whether and how they can even be relevant to exams have not yet been resolved. Very intensive marketing by the EXIST initiatives to make students aware of the subject of start-ups and to arouse interest in obtaining the relevant qualifications is very important.

The incorporation of (consultancy) institutions from outside the academic world, which take care of network development tasks as well as the administration of measures, increases the flexibility and ability of the network to work.

The high degree to which the services of the network partner complement each other increases the diversity of offers to raise awareness and support potential entrepreneurs from higher education establishments within an EXIST initiative. Unproductive competition can thus be avoided, not only in the relationship between the network partners, but also between the network partners and the project coordination office.

EXIST – The Successes Since 1998 in Figures

■ Start-ups

around 350 company start-ups existing in the long term in the five networks

■ EXIST Seed

around 100 young entrepreneurs have received funding

Prospects

It is an express objective of the EXIST programme to create conditions within the higher education establishments involved in the network that safeguard the permanent continuation of the activities relevant to start-ups in self-supporting structures even after the end of funding. For this reason, the higher education establishments involved have already undertaken on their own initiative to permanently incorporate the subject of start-ups in their range of services. They not only include changes in the courses offered and consideration of teaching events to train entrepreneurial personalities in syllabuses and examination regulations, but also clear budget shifts in the university finances.

In addition, for the future it is important to encourage other regions where start-up activities are still in their infancy to emulate this success and to promote the transfer of results and experience from the five EXIST regions. EXIST funding should therefore be placed on a broader regional basis. The individual funding options via EXIST Seed should be offered at other higher education locations.

The focus is always on model projects, the results and experience of which should be made accessible all over the country. In the future the EXIST programme will also contribute towards enshrining entrepreneurial independence as an educational and career goal at higher education establishments.

Recognition and Awards

Work in the EXIST networks is receiving recognition at home and abroad:



Award of Excellence

The European Commission granted the "Award of Excellence" to the Karlsruhe and Stuttgart EXIST regions. This seal of quality for outstanding achievements was awarded to 15 European regions in Lyon in November 2000.

Top position in comparative study

The EXIST regions occupied top places in the nationwide comparative study "From student to entrepreneur. Which university offers the best opportunities?" published by Regensburg University in July 2001.

Of the 78 universities studied, six universities from EXIST regions were in the best seven.

A Synopsis of the EXIST Regions

	bizeps	Dresden exists
Definition of region	On the interface of the economic centres of the Rhine and Ruhr, combining a high-density industrial region with more rural surroundings	Largely centred on the city of Dresden
Universities and research institutions	Bergische Universität Wuppertal Fernuniversität Hagen [Hagen Distance Learning University] Fachhochschule Lserlohn (university of applied sciences) no extra-university research institutions	One technical university, one university of applied sciences, large number of extra-university research institutions
Population; number of students	1.7 million inhabitants around 17,500 students, plus around 58,000 students nationwide at Hagen distance learning university	1.07 million inhabitants around 31,400 students
Type of network	Polycentric network with clearly demarcated work areas and responsibilities for representatives of the higher-education institutions, companies, credit institutes, chambers of commerce and innovation-promoting infrastructure, institutions (technology and start-up centres, training institutions, etc.) and regional media	University-centred network that incorporates, in addition to all departments of the university, non-university regional research establishments, international corporations with locations in the region and partners from the financial sector
Network agency	Project coordination by Transfer Office of Bergische Universität Wuppertal	Internal university project group: Dresden exists
Number of permanent network partners	22	49
Staff	Five staff members plus others at the institutions responsible for the individual projects	Eight staff members, other jobs are planned
Special features of the economic structure	Formerly strongly shaped by old industries, considerable structural adaptation in recent decades, company size structure dominated by small and medium-sized enterprises but still with a strong industrial character and a below-average representation of the services sector Unemployment level slightly below the national average	After fundamental restructuring of earlier industrial base and the establishment of productive units of international corporations, the region is on the way to becoming a high-tech industrial centre; rural hinterland with little industrial development and a marginal geographical position nationally and in relation to the EU Unemployment level slightly below the east German average
Economic power	Per capita GNP 11,200 Euro Different development in the various districts	Per capita GNP 10,500 Euro in Dresden city; hinterland: 5,650 Euro
Employees in R&D	1.9% of the working population	3.7% of the working population, 4.7% in Dresden city
New entries in the Commercial Register in 2000	4.8 innovative/technology-oriented entries per 100,000 inhabitants	7.9 innovative/technology-oriented entries per 100,000 inhabitants

GET UP	KEIM	PUSH!
Four locations of higher-education institutions in Thuringia, not spatially connected	Large catchment area with the Karlsruhe technology region, the city of Pforzheim and Enz and district	Large catchment area including the city of Stuttgart as the economic and administrative centre within a high-density industrial region
Two universities, two universities of applied sciences, large number of extra-university research institutions	One university, two universities of applied sciences, one teacher training university, a number of extra-university research institutions (e.g. Forschungszentrum Karlsruhe [Karlsruhe Research Centre])	Two universities, numerous universities of applied sciences, one film academy, one teacher training university, other academies, higher education establishments, numerous extra-university research institutions
461,000 inhabitants around 27,000 students	1.3 million inhabitants around 28,000 students	2.5 million inhabitants around 36,000 students
Multi-participant network with a large number of partners involved to varying degrees, dominated by a few higher education institutions in the region	Network centred on several higher education institutions and research establishments with KEIM e.V. as the coordinating agency, number of partners being extended as required to over 100 from research, industry and administration	Multi-participant network with a large number of partners involved to varying degrees, dominated by a few higher education institutions in the region
GNT Gesellschaft zur Förderung neuer Technologien Thüringen e. V.	Keim e. V. Informations- und Projektbüro in close cooperation with inno AG	PUSH! Regionale Agentur für Existenzgründungen
over 70	19	100 (25 of which are key players)
Five staff members at GNT and eight academic assistants at the higher education establishments	Three staff members in the information and project office, others in the KEIM centres	A total of six staff members at the PUSH! Agency and the PUSH! Office, others in the projects
Economic situation characterised by fundamental restructuring of earlier industrial base, new industrial core areas emerging primarily by activating endogenous potential. As a location Jena has the profile of a high-tech region	Broad spectrum of companies in different industries and sizes without dominance by large individual corporations, large proportion of technology industries in the total employment profile, high proportion of technology sectors in overall employment with a narrow economic gap within the catchment area	Economically one of the strongest regions in Germany with production and research facilities of large corporations and many medium-sized enterprises, a high proportion of technology industries in the total employment profile, below-average representation of the service sector
Unemployment level slightly below the east German average	Unemployment level significantly below the national average	Unemployment level significantly below the national average
Per capita GNP just under 6,250 Euro	Per capita GNP just under 15,000 Euro, much higher in Karlsruhe	Per capita GNP just under 15,750 Euro, much higher in Stuttgart
3.2 % of the working population, much higher in Jena	2.9% of the working population	5 % of the working population
11.1 innovative/technology-oriented entries per 100,000 inhabitants	10.5 innovative/technology-oriented entries per 100,000 inhabitants	11.5 innovative/technology-oriented entries per 100,000 inhabitants

The EXIST expert advisory board provides the five regional networks with advice in developing and implementing their action concepts. It also supports the Federal Ministry of Education and Research in the further development of the supra-regional EXIST measures, such as EXIST Seed or HighTEPP. After assessing the five regions in the spring of 2001, the advisory board recommended that EXIST be continued. It is thus once again committing itself to its co-responsibility for the success of the measure as a whole, which it had already performed in 1998 by choosing the initiatives to be funded. The advisory board is made up of renowned representatives from industry, the financial world, higher-education institutions and academia.



Experts from the academic world

Prof. h.c. José Luis Encarnação

Director of the Fraunhofer-Institut für graphische Datenverarbeitung and Chairman of the Zentrum für Graphische Datenverarbeitung e.V. in Darmstadt, with branches in the US, Portugal and Singapore. In July 1999, with partners from the financial sector, Prof. Encarnação set up INI-Graphics Investment GmbH to promote companies started up from his institutions. Alongside his academic career, Prof. Encarnação has always actively promoted technology transfer. For example, he was the founder and chairman of Eurographics and chairman of the "German-American Panel on Technology Transfer" and is a member of the academic advisory board of the Technology Foundation of the Land of Hesse.



Prof. Detlev Müller-Böling

Director of CHE, Gemeinnütziges Centrum für Hochschulentwicklung GmbH, Gütersloh since 1994. His main research interests include company start-up and management of higher-education institutions. Since 1985 he has been a director of bifego – Betriebswirtschaftliches Institut für empirische Gründungs- und Organisationsforschung. From 1990 to 1994 Prof. Müller-Böling was Rector of the University of Dortmund, where, previously, from 1981 he was Professor of Empirical Social Research.

Board

Prof. em. Norbert Szyperski as Chairman

Held the chair of General Business Studies at the University of Cologne for many years. Active in teaching and research in the field of company start-ups since 1974. Joint founder of the Deutsches Forschungsnetz (DFN) [German Research Network] set up for the electronic networking of universities and research establishments. From 1981 to 1986 Prof. Szyperski was Chairman of the Gesellschaft für Mathematik und Datenverarbeitung mbH. From 1986 to 1990 Chairman of Mannesmann Kienzle GmbH, where he developed D2-Mannesmann Mobilfunk GmbH. He is co-founder of more than a dozen successful start-ups and consultant to over 50 new enterprises. Prof. Szyperski was chairman of the jury in the EXIST competition.



... from industry

Dr. Lutz Müller-Kuhrt

Chairman (CEO) of AnalytiCon Discovery, which he co-founded from AnalytiCon AG together with three colleagues in May 2000. The company provides technologies and substance libraries for modern reagent research on the basis of natural substances. Dr. Lutz Müller-Kuhrt has also been the co-founder of numerous other life science companies, in particular Biotecon Diag-



nostics, Noxxon Pharma, Sepiatec and, most recently, Chelona, an associated company of AnalytiCon Discovery. He is president of the Vereinigung deutscher Biotechnologie-Unternehmen (VBU) [Association of German Biotechnology Companies].

... from the world of finance

Dr. Hans Koban

Board spokesman of Deutsche Ausgleichsbank (DtA, Bonn) and, since 1989, Chairman of the Supervisory Board of Technologie-Beteiligungs-Gesellschaft (tbG), a part of DtA. From 1990 the DtA's measures to promote company start-ups in the former GDR have been developed under his direction.



Falk F. Strasczeg

General partner and founder of EXTOREL, a leading company in the field of venture capital funds. Previously he was the founder and managing director of Technologieholding, which grew into the leading venture capital company in Germany. Prior to this he set up Laser-Optronic. He was President of the European Private Equity and Venture Capital Association from 1997/98 as well as Chairman and Member of the Supervisory Boards of various international high-tech companies.



Towards an

Entrepreneurial



Many knowledge and technology centres like this one in Berlin Adlershof have been established all over Germany. Here, innovative companies find an optimum environment.

Start-up activity and climate in the Federal Republic of Germany, specifically at German higher-education and research institutions

Is Germany an “entrepreneurial country”, in other words a country conducive to start-ups? For many years this question had to be answered in the negative. However, in recent years there are signs of a change because start-up activities in the Federal Republic are apparently swinging into life. The international comparative study “Global Entrepreneurship Monitor” (GEM) 2000 of the University of Cologne came to this conclusion. In it, Germany occupied third place of the ten most important industrialised countries in the year 2000, albeit well behind the top two nations of the US and Canada.

What is the motor of this increased activity? There is evidence that company start-ups in the technology and knowledge-intensive sectors are very important for the start-up dynamics in Germany. This is illustrated by an evaluation by the start-up panel of the Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim. Other studies also emphasise the much enhanced role of the high-tech sectors for the number of start-ups in Germany. Although the number of start-ups in the field of internet/e-commerce have fallen slightly again after a boom, a broad base has been established in the last five years with around 15,000 active start-ups. These not only include small companies, but also around 4,000 growth-oriented start-ups with ten to fifty employees. There was also strong start-up activity in the booming biotechnology sector in the 1990s.

Country

Enterprise Culture

An “entrepreneurial country” is not just characterised by a rising number of start-ups and a high proportion of self-employed people. A much better feature is a favourable climate for start-ups. This includes a positive image for entrepreneurial activities. According to the results of the GEM study, a lot has happened in Germany: the vast majority of the population and of experts in the year 2000 believed that people around about them accept young entrepreneurs and the majority expressed no prejudices against successful entrepreneurs.

Strong Potential

In Germany there are lots of potential entrepreneurs: almost half of those questioned in the GEM study expressed the wish to be self-employed. This trend can also be seen at higher-education institutions. Although the vast majority of students, as expected, would prefer to work in a company straight after completing their studies, after five years of employment almost 40 per cent would like to have their own company or work on a freelance basis. Many want to start a company, but few actually dare to take the plunge into self-employment. How can we explain this difference? One major barrier seems to be the widespread fear of failure: almost half of those questioned had been prevented from implementing their business idea for this reason. By way of contrast, in the US only 20.8 per cent held back from their project out of fear of a flop.

GEM Study: Germany's Position in an International Comparison

Rank	in 1999	in 2000
1	USA	USA
2	Canada	Canada
3	Israel	Germany
4	Italy	Italy
5	UK	UK
6	Germany	Denmark
7	Denmark	Israel
8	France	Finland
9	Japan	France
10	Finland	Japan

A similar trend can be seen in the field of higher-education institutions. Here, there has been considerable movement in recent years with regard to promoting start-ups. This can be seen, for example, in the growing number of start-up chairs at higher-education institutions in Germany. The range of qualifications and advice for potential entrepreneurs has also improved permanently, even if the commitment of individual higher-education institutions to start-ups still varies considerably.

Summary: Germany is well on the way to being an entrepreneurial country. The existing potential, especially in the higher-education sector, must, however, be continuously activated and brought together. This is where the "EXIST – University-based start-ups" programme makes an important contribution.

The Subject of Start-Ups in Theory and Research

The strong potential of people interested in starting companies is faced with a considerable potential of knowledge in German higher-education and research institutes. Since company start-ups in technology and knowledge-intensive sectors are especially effective for the start-up dynamic, this potential must be activated and connected.

In the last few years the major research organisations, such as the Fraunhofer-Gesellschaft (FhG) or the Max-Planck-Gesellschaft, have created internal organisational units that provide back up for technology-oriented companies in the start-up phase. In order to strengthen the start-up dynamics from these institutions, the performance of an FhG institute will be measured by the number of start-ups from it from now on. The Max-Planck-Gesellschaft also maintains a technology transfer institution, in the form of Garching Innovation GmbH, that is dedicated to backing up start-ups emanating from Max-Planck-Institutes. So far, the main start-up projects to benefit from this support have been from the field of biotechnology.



bizeps

BIZEPS

Bergisch-Märkische Initiative to Promote
Business Start-Ups, Projects and Structures

BIZEPS

The Bergisch-Märkische region is one of the oldest industrial regions in Germany. The establishment of new, innovative companies in manufacturing industry and in the service sector is very important for the modernisation of the regional economy. The *bizeps* EXIST network has already made a decisive contribution towards activating the strong entrepreneurial potential from the local higher-education institutions.

bizeps – The Start-Up Initiative

North Rhine-Westphalia



The *bizeps* EXISTnetwork comprise the Bergisch-Märkisch region with the towns of Hagen, Remscheid, Solingen and Wuppertal as well as the Ennepe-Ruhr district and the Märkisch district.

In 1997 partners from higher-education institutions, industry and other institutions came together to form a cooperation alliance in the Bergisch-Märkische region and they called it *bizeps*.

The overall project is coordinated by the Economic Science Faculty and the Transfer Office of the Bergische Universität Wuppertal. The other higher-education institutions involved are FernUniversität Hagen [Hagen Distance Learning University] and Fachhochschule Iserlohn [university of applied science].

The main aim of *bizeps* is to create company start-ups from the higher education sector that are stable in the long term. Funding from the EXIST programme has enabled the project to develop its own approaches to achieving this goal over the last three years.

Fostering Entrepreneurship

During participation in the EXIST competition in 1998, one of the declared goals of *bizeps* was to establish a Chair of "Entrepreneurship and Economic Development" at the Bergische Universität Wuppertal. This goal was achieved in December 1999 with the appointment of Prof. Lambert T. Koch.

What is special about the emphasis being set by this Chair is its interdisciplinary approach in the overlap area of microeconomic and macroeconomic focus. Thus, teaching and research deal not only with issues of planning start-ups and start-up management, they also deal equally with the link between entrepreneurship and economic development and issues of private and public funding for start-ups.





The team of the Entrepreneurship Chair "Entrepreneurship and Economic Development" at the Bergische Universität Wuppertal. Third from right: Prof. Dr. Lambert Koch.

Since the Winter Semester of 2000/01 students have been able to take "Entrepreneurship and Economic Development" as an examination subject in economic science undergraduate studies. In addition to the offers for economic scientists, a teaching module for students studying subjects other than economic sciences is also offered in close cooperation with the sub-project Entrepreneurship Education. One of the results of this cooperation is the award-winning "Wuppertal Model for Start-Up Qualification".

Another major area of activity is that of a facilitator for start-ups in the region. These include support for start-ups emanating from higher-education institutions, the systematic evaluation of the experience of current young entrepreneurs, so-called senior academy events and train the coach offers. There are also plans to set up and maintain an alumni system.



bizeps wants to make starting a company attractive in a series of distinctive adverts.



International exchange is every important at *bizeps*: Prof. Ulrich Braukmann, Bergische Universität Wuppertal, (left) and his guest Prof. Robert D. Hisrich from Case Western Reserve University Cleveland (Ohio) at an international congress in Wuppertal in September 2000.

Entrepreneurship Education

Awareness-raising and motivation as well as the subsequent qualification of the students are also among the central focuses of the Entrepreneurship Education sub-project under the auspices of Prof. Ulrich Braukmann.

This sub-project initially concentrated on the development of higher-education didactic innovations in qualification for start-ups. Thus, for example, five action-oriented event concepts for the qualification of students from non-economic subjects were created from scratch (for example, as an internationally operating training company). These concepts are constantly further developed in a start-up workshop specially set up for this purpose.

As well as continuing the success so far and the institutionalisation of "Entrepreneurship Education" are to the fore of future work:

- Education marketing and development management
- Joint development of product and process innovations and development of entrepreneurial personalities at higher-education institutions
- Basic and further training of teachers in secondary stages I and II
- Conception and application of an approach to promote women
- Well-founded economic pedagogical analysis and conception of "Best Practice"

"Young entrepreneurs act like yeast in dough: they have the ideas of today and thus create the jobs of tomorrow and spur on economic development."

Start-up correspondence course

In addition to the attendance offers in the "Fostering Entrepreneurship" and "Entrepreneurship Education" sub-projects, *bizeps* also offers a start-up correspondence course at the FernUniversität in Hagen.

Students can already take up further-training offers there:

- The course "Start Up Counselling" is aimed at people who support start-ups with counselling, training and funding.
- The orientation course "Becoming an Entrepreneur?" is aimed at interested parties who want to have a taste of the career alternative of "self-employment".
- The "Start Up Management" start-up support course is based on the needs and time budget of the entrepreneurs. What they study and where is left up to them. The first offers are available and will be supplemented each semester.

Within this sub-project it will be possible in future to offer the subject "Start Ups and the Next Generation of Entrepreneurs". Within the framework of degree and supplementary courses this is aimed at engineers and natural scientists beyond the standard target group of economic scientists and it should be offered for the first time in the Summer Semester of 2003.



"Young entrepreneurs act like yeast in dough: they have the ideas of today and thus create the jobs of tomorrow and spur on economic development. I think it's great that the Bergische

Universität Wuppertal is tackling the subject of "start-ups" so successfully within the *bizeps* project. My warmest contributions go to the 1st place won by Wuppertal University for their successful promotion of start-ups against 46 other competitors from all over Germany according to a study by Regensburg University in cooperation with the Frankfurter Allgemeine Zeitung. My wish: 'Carry on!'."

Friedhelm Sträter, President of the Chamber of Industry and Commerce, Wuppertal-Solingen-Remscheid

Good advice free of charge: *bizeps* offers comprehensive advice to young entrepreneurs and to all people interested in becoming self-employed.



Training Alliance

In addition to the creation of structures and working conditions conducive to start-ups at higher-education institutions *bizeps* is pursuing another goal: organisational support and promotion of new ventures during and after a successful start-up. This is where the so-called training alliance comes in. This integrates the experience and possibilities of 16 institutions and education sponsors. Those involved harmonise the contents and timing of their continued training events and have undertaken to adhere to defined quality standards. The result is the "Mehrwert" catalogue.

The fourth edition of this catalogue has now been published and contains over 60 training offers for potential entrepreneurs from the region. Another result of this project is the crash course of "company management" that will appear at the end of 2001. This brings together the media book, CD-ROM and internet forum into an innovative overall concept.



bizeps presents itself all over the region and has become a well-known brand.

Business angels

The association to promote the *bizeps* project, comprising several companies and managerial staff from the Bergisch region, has set itself the objective of bringing together investors and people wanting to set up their own companies. On the basis of the success to date and the good cooperation with the other *bizeps* partners, the decision was taken to establish the "business angel campus fund" in Wuppertal. This fund will invest its capital in lucrative spin-offs and start-ups - especially from the higher-education sphere.

Start-up offices

Another offer for those interested in establishing their own companies in the *bizeps* network are the start-up offices. These offices offer the possibility of starting a first venture into self-employment without risks in one of eight regional technology and start-up centres. The entrepreneurs can test their business idea and their "entrepreneurial qualities" over a limited period of time without having to enter into any long-term liabilities for operational investments. They are mentored and coached in this process.

Cooperation database

The Bergisch-Märkisch Transfergesellschaft has designed an extensive cooperation database as an important support instrument to make contacts and know-how tangible across the region. Over 150 young companies from the eight technology centres are now represented in this database.



A large number of start-ups are based in the Hagen Technology and Start-Up Centre.

bizeps in the media

"Do some good and talk about it" is one of the central *bizeps* mottoes. Specifically, this means that public relations is not only sporadic and restricted to a few selected campaigns. Much rather the success and development of *bizeps* are accompanied by continuous publicity. This has been a decisive point in raising the regional awareness of *bizeps*.

Editorial reporting in the regional daily newspapers about all subjects relevant to start-ups will be continued, as will the accompanying image campaign.

Prospects

In addition to the start-up-oriented research and training potentials in higher-education institutions, the support of start-ups by economic practice itself is to be expanded. The broad spectrum of the academic subjects offered here and about to be offered in which product ideas suitable for start-ups are developed and can mature should continue to form the basis of this start-up development process in the region in the future.

The long-term establishment of a broad-based start-up institute is therefore at the heart of the cooperation between all *bizeps* partners: the Wuppertal Start-Up Centre.

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"North Rhine-Westphalia needs well trained, innovative entrepreneurs for the desired and necessary start-ups. The *bizeps* project promotes practice-oriented entrepreneurial thinking and action by

students and thus makes a contribution to the long-term and sustainable safeguarding of our high economic standard."

Dr. Jörn Kreke, Chairman of the Supervisory Board of Douglas Holding AG, Hagen

Example of start-up

With fiery keenness: Peperoni

In January 2001 Maciej Kuszpa, Thomas Büren, Kai Dornseiff and Marcus Ladwig founded the company Peperoni Mobile & Internet Software GmbH. The team of founders are an economic scientist, a graduate computer scientist and two students of engineering computing.

Prior to starting the company, the four obtained detailed advice from the *bizeps* transfer office and also had their attention drawn to the possibilities of the EXIST Seed funding programme. After the application, funding for the team of founders was approved. The founders are now based in the Hagen Technology Centre where they made use of the transfer centre's intensive coaching programme offered there as well as a start-up office.

Peperoni sees itself as a Wireless Application Service Provider (WASP) and offers a full service for mobile and electronic business. Peperoni develops and distributes software such as online shops, database or individual solutions for the internet, especially for mobile internet (currently WAP on GSM and GPRS, also UMTS in the future).



The Peperoni team at CeBIT 2001 in Hanover.

The development costs and the integration period of mobile internet appearances for customers are considerably reduced with this software and Peperoni services.

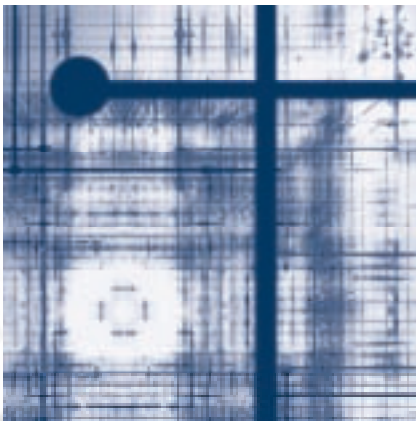
The most recent coup of this young Hagen company is the strategic partnership with Genie Internet Ltd., British Telecom's mobile internet portal. Peperoni developed the new Genie offer myWAP, which registered users can access free of charge under <http://mywap.genie.de>.

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Peperoni
Mobile & Internet Software

Good Start-Up Climate in the City on the Elbe



When the Technische Universität Dresden took part in the EXIST competition in 1998 only a few members of the higher-education institutions dared to go into self-employment. Given a comparatively unfavourable starting position, the Dresden exists EXIST network has succeeded in clearly improving the start-up climate.

DRESDEN EXISTS

Dresden exists – Good Start-Up Climate

Saxony



At the centre of the Dresden exists EXIST network is the Technische Universität Dresden. The activities take effect beyond Dresden onto the hinterland and the entire Free State of Saxony.



TECHNISCHE
UNIVERSITÄT
DRESDEN

In the last three years the Dresden EXIST network has succeeded in clearly improving the start-up climate at the Technische Universität Dresden and far beyond. The starting position three years ago was comparably unfavourable: at that time the climate for starting up new companies could not be felt within the university or in the Dresden region. There were hardly any offers for support from the university.

In spite of these preconditions, at the start of EXIST the Technische Universität Dresden set itself the ambitious goal of developing into an “entrepreneurial university” and of forming a strong network with partners from the region.

Establishing a network

During the establishment phase, the emphasis was on acquiring partners from within and outside the university for active participation in the project. The Dresden region has now become a regional network with around 60 partners from industry, the finance sector, academia and politics, with the Technische Universität Dresden acting at the centre. The centring on the university as a crystallisation point distinguishes Dresden exists from the other EXIST networks that are not centralised.

The network character has proved to be the key factor of success here. It has comprehensively succeeded in bundling the specific skills of the partners and to use them in a targeted way. Dresden exists has set up working groups with specific alignments as a coordination instrument. There are currently working groups in company financing, technology transfer, internships, the next generation of entrepreneurs, business field mining and start-ups from research from outside universities.

in the City on the Elbe

Enterprise Foyers

The so-called Enterprise Foyers are of central importance to the work of Dresden exists. Since the end of 1998 the events have been held twice per semester and reach large numbers of visitors with around 400 participants each time.

The aim of the Enterprise Foyer is to bring together students and academics, the curious, the intent and entrepreneurs with advisors, people familiar with the sector and politicians. The event offers a platform for the exchange of experience and to establish contacts. Just like a trade fair, the participants have the opportunity to draw attention to their ideas. So far, Dres-

den exists has been able to acquire such prominent speakers as Prof. h. c. Hasso Plattner (co-founder of SAP AG) or Prof. Bernd Kröplin (Deputy Chairman of the Supervisory Board of CargoLifter AG) to the Enterprise Foyer.

Using the Enterprise Foyer, Dresden exists has successfully decided on as broad an impact as possible: many students and university employees have been familiarised with the subject of start-ups (awareness-raising), people who want to start a company and young entrepreneurs have received information and been able to make important contacts, the cohesion of the network has been reinforced.

Invitation to Enterprise Foyer.





Experts regularly discuss issues relating to all aspects of start-ups at the Enterprise Talkshows at extra-university research institutes.

“In the last three years the Technische Universität Dresden has succeeded in enhancing its profile as a highly efficient crystallisation point for innovations and start-ups and, at the same time, in creating an enterprise culture in close cooperation with the region.”

Start-up qualification and motivation

Qualification offers have been developed at the Technische Universität Dresden with the aim of reaching as many people as possible who are interested in the subject of start-ups. In the process everyone should be able to acquire knowledge that is needed to cope with starting a company.

The institutional and organisational foundation of passing on knowledge lies with the SAP-Stiftung (SAP Foundation) Chair of Innovation Management and Technology-Oriented Enterprise, which coordinates the offers and has drawn up an integral training concept. Since April 1999 Prof. Dr. Michael Schefczyk has occupied this chair. Within the framework of the special theory of business economics, the Enterprise Chair offers lectures and exercises in the fields of "Start-Ups/Business Economic Theory for Young Companies" and "Innovation Management".

In parallel to this core area, Dresden exists offers a number of lecture series and guest presentations of a motivational character as well as conveying non-academic basic knowledge in order to introduce non-economic scientists to basic economic issues. Furthermore, interdisciplinary offers, such as personality training, self-management, rhetoric or project management are made available, which are incorporated in various training measures. These purely optional events have met with great resonance in the most varied study and research departments of the university.

In future, the previous spectrum of training offers will be supplemented with other subjects. Chairs from different faculties are to be involved in drawing up training measures in various sub-projects. The sub-projects are subsequently to be expanded into an inter-faculty "Center of Entrepreneurial Training".

The Technische Universität Dresden.





In the Enterprise Room: The team of SensoGel explains its business idea to Prof. Dr. Michael Schefczyk, of the Enterprise Chair at the TU Dresden (in the background). The Enterprise Rooms at the TU Dresden are central meeting points in which teams of entrepreneurs can develop their concepts.



The Enterprise Cards are awarded every semester as a seal of quality for the most promising start-up ideas.

Mentoring Entrepreneurs

In parallel to the events for training and motivation, as the project progresses the range of services has been expanded with specific measures to support and mentor entrepreneurs. Here, Dresden exists has the following highlights:

■ **Enterprise Rooms:** Enterprise Rooms have been set up in the Economic Sciences, Electronic Engineering, Mechanical Engineering, Medicine faculties and in the Chemistry department of the Mathematics and Natural Sciences faculty. They are central meeting points with computers, telephone, fax and a library in which business plans can be matured and implemented into a sustainable company concept. The entrepreneur teams are given support by experienced coaches.

■ **Enterprise Card:** a central component of the mentoring offer is the certification of the most promising start-up ideas by a jury of experts from research and industry. The Enterprise Card is a seal of quality for entrepreneur teams that entitles them to comprehensive preferential treatment: for example, the winners are incorporated in the public relations work of Dresden exists. The teams present themselves and their start-up ideas and concepts every semester.

■ **Enterprise Meeting:** The Enterprise Meeting is a platform for entrepreneurs to establish contact and exchange opinions among themselves. It runs under the motto "Entrepreneurs Help Entrepreneurs". The Enterprise Meeting takes place twice a semester.

■ **Guidelines for Entrepreneurs:** The Guidelines for Entrepreneurs were compiled from a large number of inquiries from potential entrepreneurs who were looking for recommendations for action for their own start-up projects. The information package provides answers to the following questions, among others: How do I draw up a business plan? How do I prepare myself for discussions with the bank? How do I identify my capital requirements? What does a liquidity account look like? How do I protect my business idea? How do I register my commercial operation? What seminars are offered to prepare for start-ups?

Prospects

In future Dresden exists intends to work further on its integrated concept for promoting enterprise in the region. The aim is a continuous offer without any gaps that takes account of all stages of the start-up process. From information, motivation and training right up to personal start-up mentoring the offers are to be even better tailored to the special needs of the target groups.

Another objective for the future is the creation of self-supporting structures that guarantees a permanent continuation of the project independently of public funding. This means that both the university management and as large a number as possible of players from the region make their contribution to Dresden exists.

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"In the last three years the Technische Universität Dresden has succeeded in enhancing its profile as a highly efficient crystallisation point for innovations and start-ups and, at the same time, in creating an en-

terprise culture in close cooperation with the region. With the recruitment of the Dresden exists project on the one hand and the SAP-Stiftung Chair for Innovation Management and Technology-Oriented Enterprise on the other, the environment has been created that will bring the university's formerly somewhat peripheral support activities back to the centre of the mission: to make infrastructure, strategies and offers in terms of content into elements of university teaching and to address them directly to members of higher-education institutions as future entrepreneurs."

Prof. Dr. rer. nat. habil. Achim Mehlhorn, Vice-Chancellor of the Technische Universität Dresden



Example of start-up

DiagX – the Dresdner diagnosis experts

They now call themselves DiagX – the Diagnosis-Xperts: Sören Kahl, 24 years old, student of electronic engineering and René Thamm, also 24 and student of business economics. Together they are working on developing mobile burner diagnosis equipment for heating systems. The starting signal for the two dedicated young entrepreneurs was the business plan seminar in the 1999/2000 Winter Semester where they successfully presented a first draft of their idea. With this idea paper they were able to convince not only the Dresden exists Enterprise Card jury, but also the funding donors of EXIST Seed. In March 2000 they became the first Dresden exists team of entrepreneurs to be accepted in the EXIST Seed programme. They are now working full speed ahead on implementing their business idea and have already taken on one employee. According to Sören Kahl, the preparations are 70 per cent completed, in the early summer of 2002 regular business operations are to be commenced.

And what is special about the idea? The equipment will quickly and precisely detect faults in gas and oil burners of any manufacturer. The main advantage for the heating companies is in the minimisation of non-conformance costs incurred with incorrect repairs or additional maintenance. Furthermore, the equipment is characterised by simple operation, i.e. it can be used immediately and without expensive training measures.



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Entrepreneur Sören Kahl (second from left) from DiagX with the entrepreneurs from mindbroker KG and NovaMova – Mobilitätsmanagement. The three (teams of) entrepreneurs could be seen on posters on Dresden bus and tram stops as part of an advertising campaign in November 2000.



Promotion of technology-based/
innovative start-ups with a high potential

GET UP

For three years GET UP has been working to improve the enterprise culture in Thuringia: with great success. The Free State of Thuringia with its outstanding research environment offers the best conditions for the establishment of state-of-the-art companies. The GET UP initiative has succeeded in using this locational advantage and has brought about a marked increase in technology-oriented company start-ups from the higher education sector and their environment.

GET UP – A Mood of Change in

Thuringia



The GET UP EXIST network has its centres at the higher-education institutions in Ilmenau, Jena, Schmalkalden and Weimar. From there, GET UP has an effect on start-up activities in the entire Free State of Thuringia.

Promotion of technology-based/innovative start-ups with a high potential

The GET UP initiative was called into being by GNT Gesellschaft zur Förderung neuer Technologien Thüringen e. V. and the four Thuringian higher-education institutes, the Technische Universität Ilmenau, Friedrich-Schiller-Universität Jena, Fachhochschule Jena and Fachhochschule Schmalkalden. Since October 1998 the GET UP partners have been given comprehensive funding to implement their award-winning concepts within the context of the EXIST programme. In May 2001 the Bauhaus-Universität Weimar has joined the network as the fifth higher-education partner.

Five higher-education institutions – one goal

GET UP was founded on the idea of bringing together several higher-education establishments to achieve a shared goal: the promotion of technology-based/innovative start-ups with a high potential. Technology-oriented company start-ups are of elementary importance to the Thuringian economy, which has been undergoing a radical structural change since 1989/90. Not only large companies such as Jenoptik, but also and in particular highly innovative small and medium-sized companies are to form the new economic basis of the Free State of Thuringia.

The phase so far has served in particular to develop, try out and implement various models for the creation of an enterprise culture at the GET UP higher-education establishments.

One special feature in comparison to the four other EXIST networks is the large number and diversity of the higher-education institutions involved. A central challenge for the GET UP initiative was to span a successful network in the Ilmenau-Jena-Schmalkalden "technology triangle": between, at first, four higher-



FACH
HOCH
SCHULE
JENA



Bauhaus-Universität
Weimar

Thuringia

education establishments of different sizes with very different disciplinary focuses and traditions that have marked a particular self-perception within each partner higher-education establishment.

The GET UP activities are planned by a core team of professors from the higher-education institutions involved as well as a representative from the Gesellschaft zur Förderung Neuer Technologien Thüringen e. V. (GNT) from outside the universities. The network maintains its own offices at all higher-education locations. The aim is to create focuses of skills at the individual locations as well as to achieve synergetic effects. There are efforts for the subjects of start-ups and company management to be given a central position in the entire curricula of the higher-education institutions involved. In this context, the subject of start-ups is not to be offered just in economic science courses, but also as a focus of studies in engineering sciences.

The funding committee GNT based in Ilmenau is entrusted with project coordination. The special challenge of coordination and organisation of a polycentric network has been mastered so far. The already wide network has already been made even wider with the Bauhaus-Universität Weimar.



From the laboratory to the market? GET UP opens up to students the prospect of becoming self-employed with their research knowledge.



"...have confidence!" GET UP 2001 used this motto to invite people to take part in the 4th Thuringian Business Plan competition.



"The GET UP initiative is already an integral part of Thuringia's entrepreneurial world."

Goals of GET UP

■ GET UP raises awareness, motivates and trains potential entrepreneurs in order to make it easier for them to move towards self-employment.

The addressees of the measure are:

- Students and graduates of higher-education establishments in Thuringia
- Professors
- Academic employees
- Grammar school pupils

■ Improving the enterprise culture at higher-education institutions

■ Increasing the number of technology-oriented start-ups

■ Methods for generating start-up ideas

■ Creation of new jobs

■ Further improvement of cooperation between industry and academia

■ Incorporating existing institutions in the entrepreneur network, motivating and training employees

■ Stabilising start-ups with intensive mentoring

Thuringian Business Plan Competition

One of the highlights of GET UP is the Thuringian Business Plan Competition. It is the instrument for the generation of future-oriented start-ups and since 1998 it has been implemented jointly with the Thüringer Existenzgründungsinitiative THEI (Thuringian start-up initiative). The aim of this campaign is to provide expert support to facilitate the way to the market for newly founded companies with a technology or knowledge-based background, especially in the area of higher-education institutions in Ilmenau, Jena, Schmalkalden and Weimar. Because especially graduates with innovative business ideas but a lack of entrepreneurial experience need motivation and support in order to dare to venture into self-employment.

Jena Training Model

The Jena Training Model is based on a harmonised and interlinked mass training, compact training and special mentoring offers. In this connection, the primary purpose of mass training is to break down the deficits in knowledge and “fears” by means of information and motivation. Core events of the Jena training concept are the vacation academy on start-up management and company start-up seminars. The prime goal of the vacation academy is to develop start-up-specific qualifications as a preliminary stage to the implementation of start-up ideas. In the company start-up seminars a business plan that can be presented is then drawn up on the basis of specific product developments under the guidance of intensive mentoring. The start-up teams are made up of natural and economic scientists (and this is a requirement). To support the implementation of new ventures, the start-up team can also have recourse to special counselling via the network established by GET UP.

Two other training modules are currently in the development and trial phase: the “Natural Sciences for Economic Scientists Vacation Academy” and the “Vacation Academy for Young Entrepreneurs”.

Info Mobile

Another special features is the Info Mobile. The GET UP team tours Thuringia in it and is available to anyone interested in the subject of start-ups. The Info Mobile stops at important locations (higher-education institutions, chambers of industry and commerce) and on special occasions to provide information to people interested in the subject of start-ups about events organised by the GET UP initiative.

Internationalisation

GET UP is using integration in international start-up and higher-education networks to

- have recourse to the knowledge and experience of foreign higher-education and research institutions,
- give professors, academic assistants and students the opportunity to exchange information and for continued training,
- be able to give the founders of technology-oriented companies efficient advice and support,
- advertise for Thuringia as a location of technology businesses.

In order to achieve this, GET UP cooperates with the International University of Entrepreneurship (IUE). Furthermore, international workshops are carried out at the various higher-education institutions in the GET UP alliance.

Optimistic look into the future: lots of Thuringian students, like this team in the Goethe Galerie Jena, see their own company as a good alternative to employment in a large corporation.





Thuringian schoolchildren present their virtual companies. The Land-wide competition "Schoolchildren Starting Companies" wants to arouse interest in self-employment among children and young people. Patron of the campaign: the Thuringian Education Minister Dr. Michael Krapp (right).

Virtual Start-Up Centre

The Virtual Start-Up Centre is a platform for start-up knowledge, coaching and an exchange of experience. The Virtual Start-Up Centre offers basic and intensive courses:

The basic course teaches general knowledge on establishing a company. In the intensive course, however, there are various ways of acquiring knowledge. Thus, for example, one can get information just from the available texts or one can also use the counselling from course management. Then specialist intensive courses can be offered and one can "chat" with other entrepreneurs or coaches on specific subjects, such as financing or marketing, etc. Another possibility is specialised coaching where an entrepreneur (team) discusses the specific issues of his own start-up with a coach (excluding the public). The Virtual Start-Up Centre is available at www.getup-vez.de.

School projects

The GET UP initiative has been able to gain the support of the Thuringian Education Minister Dr. Krapp as patron for the Land-wide "Schoolchildren Starting Companies" competition. The project is career and industry-oriented and is understood as a pupil-oriented open form of learning. The target of the pupils' – "virtual" – companies is practical, interdisciplinary lesson design in economics/law, social science, German and IT. The basic requirement for starting work is recognition by the headteacher as a school project. The "companies" work in the most varied areas. Teachers and the GET UP initiative with their partners are available to the pupils with advice. The pupils therefore learn about self-employment as a possible career option.

Prospects

With its central position and its future-oriented higher-education institutions the Free State of Thuringia has outstanding opportunities to establish itself as an important centre on the German high-tech landscape.

Cooperation between the GET UP initiative and the local authorities in the network should be expanded and consolidated. The aim is also to acquire local dignitaries to support the entrepreneurs. In order to safeguard the existence of the GET UP initiative above and beyond the funding period, concepts for continuation without funding where possible are being drawn up in the project alliance. The core of this consideration is the establishment of an Entrepreneurship Centre in Thuringia, which will market specific GET UP offers in conjunction with the Thuringian higher-education institutions.

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"The GET UP initiative is already an integral part of Thuringia's entrepreneurial world. As a result of the alliance between the five Thuringian higher-education institutions an expert network has been created that is available to students who want to set up companies, giving them advice when implementing their innovative ideas. For anyone in Thuringia who wants to establish a technology-oriented company I can only advise them to turn to the GET UP initiative for advice. The start-ups that have already been established speak for themselves."

Prof. Dr. h. c. Lothar Späth, CEO of Jenoptik AG



The GET UP team tours Thuringia in the Info Mobile to give information to interested parties on the spot.

Example of start-up



The entrepreneurial team of exquisit Technologies were awarded the special prize of the Deutsche Effecten- und Wechsel-Beteiligungsgesellschaft AG (DEWB) at the 3rd Thuringian Business Plan competition. The prize was awarded by Board spokesman Dr. Kubis (right).



exquisit Technologies GmbH: exquisite solutions

In May 2000 Christiane Neugebauer, Thomas Otto, Enrico Scharrenberg and Andreas Klein established exquisit Technologies GmbH in Jena. The company started with 17 employees, by the end of 2000 there were 45 and in the summer of 2001 as many as 79. And the company wants to grow even more.

The four-member team of founders comprises a human medicine graduate, an IT specialist and two entrepreneurs with a clerical background. Together they have found an innovative solution in the field of knowledge management. exquisit Technologies develops intelligent software modules (KI-Module) that can be integrated in most existing information and

knowledge management systems. Furthermore, the company is planning to develop its own products and features on the basis of these modules. The basic technology, the "knowledge rating system", can extract information from electronic data of the most varied formats. These extracts are structured and prepared for the distillation and processing of relevant facts. The system not only recognises the arrangement pattern of certain words, the texts are also really understood using semantic analysis.

The first feature is an "advanced retrieval system" that finds subject-oriented texts in the internet and the intranet and provides a summary of the search results. In the process, attention is no longer paid to the presence of certain key words, but to the contents of the texts.

The target customers are large companies, mainly from the field of information and financial services.

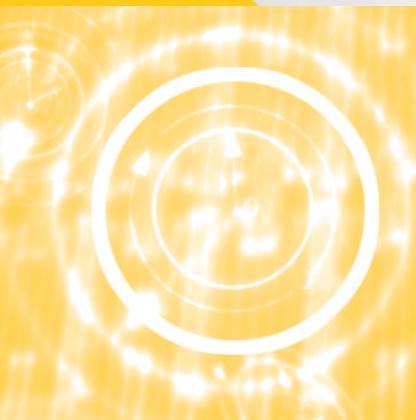
Contact:

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Karlsruhe start-up impulse

KEIM



In three years the Karlsruhe start-up impulse KEIM has developed into an indispensable motor for entrepreneurial activities in the Karlsruhe region and in Pforzheim. For decades the region in the south-west of Germany has had an above-average density of research on a national scale. The EXIST programme has made a major contribution towards tapping into this high potential and setting a strong start-up dynamic in motion.

A Germ Cell For Innovative Start-

Baden-Württemberg



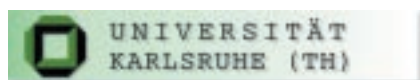
The KEIM EXIST network is active in the Karlsruhe Technology Region, extended to Pforzheim. The Karlsruhe Technology Region includes the towns of Bruchsal, Stutensee, Bretten, Karlsruhe, Ettlingen, Rastatt, Gaggenau, Baden-Baden, Bühl as well as the Karlsruhe and Rastatt districts.

Karlsruhe start-up impulse

In just three years the Karlsruhe start-up impulse KEIM has developed into a trademark for excellent interaction between academic training and entrepreneurial spirit. With funding from the EXIST programme it has been possible to form a powerful network together with higher-education establishments, research institutions and administrations.

The members of KEIM e. v. are guarantors of an effective higher-education and economic policy. They are led by the Universität Karlsruhe (TH), the Fachhochschule Karlsruhe, the Fachhochschule Pforzheim and Karlsruhe Research Centre, the City of Karlsruhe, the Karlsruhe Technology Region and the chambers of industry and commerce.

The practically unique concentration of know-how for knowledge-based start-ups are supplemented by numerous other partners.



Fachhochschule
Pforzheim

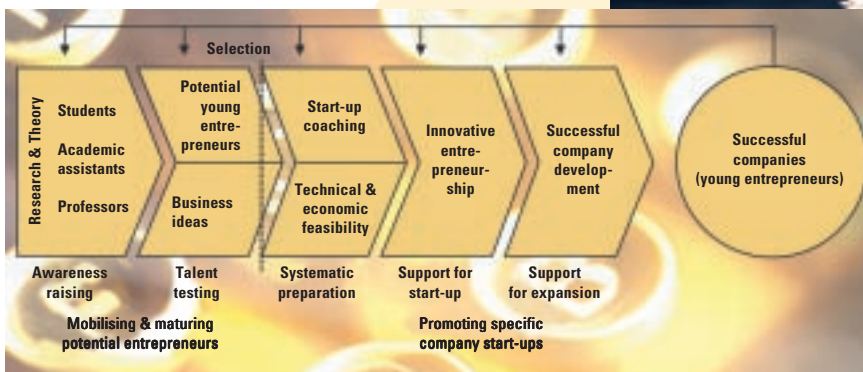
Hochschule
für Gestaltung
Technik und
Wirtschaft



Edelgard Bulmahn, Federal Minister of Education and Research, visiting the joint stand of KEIM, Wirtschaftsförderung Karlsruhe and CyberForum e. V. on the occasion of LEARNTEC in Karlsruhe in February 2000. L.t.r.: Dr. Elmar Kolb, then Lord Mayor of the City of Karlsruhe, Edelgard Bulmahn, Dr. Horst Zajonc, Director of Wirtschaftsförderung Karlsruhe and Prof. Dr. Rolf Güdemann, Director of the KEIM Centre for Company Development at the Fachhochschule Pforzheim.

The KEIM process

The KEIM process was established in 1998 as a common integration basis. Indications that this concept has remained valid over the duration of the project are the development of the initiative along this process and the seamless insertion of new, demand-oriented elements.



KEIM process

- Awareness-raising: presence in the media, events at higher-education establishments, surveys among students and entrepreneurs, PriManager schoolchildren's competition
- Talent testing: KEIM centres at the higher-education institutions, seminars, series of workshops, company planning games, student training companies
- Systematic preparation: orientation advice, working party of regional start-up counselling offices, internet community www.gruenderland.net, online training for women www.gruenderinnen.de
- Support in start-up: Federal funding programme EXIST Seed, KEIM entrepreneur mentoring, industrial project "Start-Up on Demand"
- Support in expansion: "Gründer helfen Gründern e. V."

Highlights

Just a few of the many KEIM elements will be described here for exemplary purposes: the cross-establishment project "Free climb" (Universität Karlsruhe and Fachhochschule Karlsruhe), which especially aims at team start-ups from various courses; the industrial project "Start-Up on Demand", which has set itself the task of bringing together so-called Sleeping Beauties from industry and academics and interested students or the association "Entrepreneurs Help Entrepreneurs – The Corporate Partners of KEIM", an alliance of young and established companies now financially independent of KEIM that support the entrepreneurial community with their skills. The Steinbeis Transfer Centre for Company Development was founded at Fachhochschule Pforzheim in July 2001; it has taken over the operation of two KEIM projects.



“According to a representative study about the enterprise culture at German higher-education institutions by Regensburg University from July 2001, the Universität Karlsruhe occupies third place in Germany, a distinction that also benefits the initiative “Karlsruhe Start-Up Impulse”.

In addition to Stuttgart and Munich, Karlsruhe is increasingly becoming a centre for start-up entrepreneurs in the high-tech sector for southern Germany.

The traditional liberality of the Baden way of life, the apparently inherent curiosity of Alemanian Rhine inhabitants coupled with conscientiousness and creative spirit bring forth an obviously especially advantageous environment for start-ups.

The Universität Karlsruhe is willing to pursue completely new paths: The route of appointing non-academics to professorial chairs, which is not unusual at American universities, has been taken with my appointment to a chair at the newly founded Interfaculty Institute for Entrepreneurship. At least from my 52 years of profession experience I can present to the Karlsruhe students the development of the Würth company from a two-man business in 1954 to a world market leader in the field of fixing and assembly materials with 36,500 employees and annual sales revenue of 5.4 billion Euro (2001) with annual profit of 300 million Euro (2000) and at the same time tell them about the efforts, the stress and the worries of starting a company, but also the wonderful fascination of successful entrepreneurial activity.”

Prof. Dr. h. c. Reinhold Würth, entrepreneur and occupant of the Start-Up Chair at the Interfaculty Institute for Entrepreneurship, Universität Karlsruhe.

Competition creates maximum performance

One strength of KEIM is the efficient use of funds. What is behind this? In a sort of competition of ideas KEIM tenders out around half a million Euro for individual projects each year which are funded if the seminars and workshops applied for contain the teaching of entrepreneurial knowledge. Internal and external experts assess the prospects of the individual measures in advance. In the case of subsequent applications, the results of regular evaluations are incorporated in the decisions. With this competition-oriented approach, KEIM not only mobilises many actors, but also ensures high project quality. Professors, providers of economic funds and network partners are expressly called upon for interdisciplinary and cross-establishment cooperation. In this way the boundaries between the higher-education institutions – otherwise so strongly maintained by the students – become permeable. Students, academics and scientists are happy to take up this offer.

In June 2001 KEIM celebrated its 100th start-up. Present at the cake cutting (l.t.r.): Gert Metternich (founder of Athena IT-Services GmbH), Mayor Ullrich Eidenmüller (City of Karlsruhe), Dr. Jürgen Wüst (Managing Director KEIM e. V., Director of the Technology Transfer and Marketing Department, Karlsruhe Research Centre), Dr. Bernd Hentsch (Founding Managing Director of G2M Cancer Drugs AG) and James J. Hunt (Founder of aicas GmbH)



Practice instead of theory

KEIM provides a comprehensive offer of training for entrepreneurs and intrapreneurs who want some entrepreneurial know-how. In order to make this offer transparent to the target group, KEIM quickly left the virtual status and offered the target group at the relevant higher-education establishments a place for registration and advice. This was the origin of the KEIM Centres that – with their own budget and staff – are the first contact partners and develop training modules together with professors. The KEIM Centre for product and service development at the Technische Universität in Karlsruhe and the KEIM Centres for Company Development at the two universities of applied science are the pillars of the initiative. Their core institutes give impulses for self-employment and make the resources of their establishment available to young start-ups.

What is the next step when the idea for one's own company has been born but there is no safety in relevant areas such as finance, taxes, law and patents? This is where KEIM start-up mentoring comes in – harmonised to the various phases of the start-up and the individual needs of the entrepreneur (teams). In the tutorial (first stage), the feasibility of the start-up idea and any possible risks are discussed in individual talks and solutions are drawn up. In addition, moderated circles of entrepreneurs are held in which the participants exchange experience. Then, entry into KEIM Coaching (second stage) is possible: in addition to professional advice, the participants are given market studies, patent research or co-financing to take part in a trade fair.



The members of the KEIM project team representing KEIM e. V. (l.t.r.): Prof. Dr.-Ing. Albert Albers (Universität Karlsruhe, TH), Prof. Dr. Rolf Güdemann (Fachhochschule Pforzheim), Ralf Eichhorn (City of Karlsruhe), Linda Jeromin (IHK Karlsruhe and Karlsruhe Technology Region) and Prof. Dr.-Ing. Wolfgang Fritz (Fachhochschule Karlsruhe).

Self-employment is catching on

How do we bring the subject of self-employment to schoolchildren? KEIM can answer this question with two examples: the school project "PriManager – Primaner managen eine AG" uses company plan games to introduce year 12 grammar school pupils to the subject of economics in a playful way. The methods that have proved their value in management training for many years will be carried out in general and vocational grammar schools across the whole of Baden-Württemberg from autumn 2001.

In the TheoPrax training model, employees from the Fraunhofer-Institut für Chemische Technologie monitor the establishment of pupils' companies. Both offers were designed exclusively for schoolchildren.

Prospects

Anyone who does not want to leave the transformation of knowledge into products and services, into companies and jobs to chance must create framework conditions in which entrepreneurial thought and action can develop in the long term. The higher-education institutions – above all the KEIM Centres – have recognised this. The higher-education establishment offers for prospective young entrepreneurs will be integrated in the curriculum in the future.

Furthermore, at the Universität Karlsruhe and the Fachhochschule Pforzheim supplementary courses are being developed that offer tried and tested training elements in the long term.

The Fachhochschule Karlsruhe is planning to become involved in start-ups in future and, thus, to generate feedback for activities relevant to start-ups. In the long term, Karlsruhe Research Centre intends to use monies from licence income to create a positive enterprise culture. Work is currently ongoing on establishing a regional Seed capital fund. The Public-Private-Partnership designed for this should also continue in the role of promoter of start-up activities even after the end of Federal funding for KEIM, in addition to fund management.

KEIM: a model

Concepts of the KEIM project have already been transferred within Germany and abroad or they have been presented there and potential partners have signalled clear interest.

Examples: the Austrian initiative GENIUS under the auspices of the Office of the Land Government of Lower Austria is heavily based on the Karlsruhe concept. There are already approaches for cooperation with the Education Ministry of the Land Mecklenburg-Western Pomerania, which wants to integrate elements of KEIM in a Land programme. Other regions of Germany have expressed an interest in the transfer of the EXIST philosophy.

Within the context of the Swedish innovation offensive a project sponsored jointly by KEIM and NUTEK (the state agency for the promotion of technology, innovation and start-ups in Sweden) has recently been set in motion.

Last but not least, at this point the KREO network should be mentioned: The cooperation between the regions of Karlsruhe/Pforzheim, Rhône-Alpes, Emilia-Romagna and Oxford constituted in 1998 was the precursor for winning the "Award of Excellence". Furthermore, the KREO partners were awarded funding from the European Union for projects such as Competence Landscape Unfolding European Strengths (Clues) and Incubator Finance Forum (IFF).

“The traditional liberality of the Baden way of life, the apparently inherent curiosity of Alemanian Rhine inhabitants coupled with conscientiousness and creative spirit bring forth an obviously especially advantageous environment for start-ups.”



The experts from KEIM are available for consultations all over the region, such as here at the enterprise days at the L-Bank (state bank of Baden-Württemberg).

National and international recognition

The achievements in the region have received a great deal in recognition at home and abroad. Thus, in December 2000 Karlsruhe Research Centre received the prize for the "Promotion of Start-Ups from Research" of the Federal Ministry of Education and Research. The Karlsruhe region was presented with the "Award of Excellence for Innovative Start-Ups" of the European Commission in November 2000. KEIM also regularly performs excellently in rankings. For example, the Universität Karlsruhe occupied third place in an assessment of entrepreneurial training at German higher-education establishments conducted by Regensburg University in July 2001.



The KEIM annual report

Contact

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Internet: www.keim.de

Project management: Dr. Jürgen Wüst

Example of start-up



Always one step higher – the founding team of Smarthouse (l.t.r.): Peter Schille (Director), Jens Ohr (Director), Stefan Harpainter (Head of Research) and Dominik Nienhaus (Head of Technology).

Clever and smart: Smarthouse Media GmbH

In 1999 Jens Ohr and Peter Schille, at the time still students of economic engineering at Universität Karlsruhe, set up their own, initially small, company. The basis of establishing Smarthouse Media GmbH was the product www.finance-online.de, a finance portal in the internet. In the two years of its existence the internet start-ups have developed into a major provider of finance content.

It offers news, share analyses, price provision and various other tools that make up a finance portal. In this connection, Smarthouse Media not only acts as a news agency, but – if required – also takes on complete services associated with developing and operating portals.

In June 2000 the young entrepreneurs gained a renowned and strong partner with the participation of Axel Springer Verlag AG: the results were quick growth, new customer contacts and a greater level of knowledge.

The biggest customers today are Consors, comdirect, DAB Bank and T-Online. The finance page www.finance-online.de is still the core of the editorial work. In addition, the team takes care of parts of other media portals, such as welt.de, bild.de, berlin1.de and aktienresearch.de.

After two years of entrepreneurial existence in finance support Jens Ohr and Peter Schille still see a lot of growth potential and want to exhaust this in the years ahead. The company now has twelve permanent and around 50 freelance employees.

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PUSH!

PUSH!

The network of partners for the promotion of university-based start-ups in the Stuttgart area

PUSH!

For a considerable time now the large, economically powerful region of Stuttgart with its diverse higher-education and research landscape has been offering a broad-based range of services for start-ups. The network of partners for the promotion of university-based business start-ups in the Stuttgart area (PUSH!) was set up in 1998 to coordinate and bundle the regional forces – with great success.



PUSH! –

Starting Up With

Baden-Württemberg



The PUSH! EXIST network is closely associated with the Stuttgart region. This includes Stuttgart, Böblingen, Esslingen, Göppingen and Ludwigsburg as well as the Rems-Murr district.



Bill Gates also started in a garage once upon a time. The PUSH! Pick-Up map with brief information makes you want to emulate the main role models.

The network of partners for the promotion of university-based start-ups in the Stuttgart area

When the network of partners for the promotion of university-based business start-ups in the Stuttgart area (PUSH!) was set up in 1998 there was already an excellent environment for innovative company start-ups. The economically strong region had great potential in its diverse higher-education and research landscape. There was no lack of support offers for entrepreneurs from the Land, the region or the local authorities or of counselling and training facilities.

However, it was precisely the large number of existing measures that made greater cooperation and coordination necessary. For this purpose Wirtschaftsförderung Region Stuttgart GmbH (WRS) initiated the PUSH! network. Funded by the EXIST programme, since then PUSH! has been acting successfully as an umbrella of the individual regional initiatives.

Strong Partners

A strong network

The PUSH! network with its partners and counselors now includes over 100 institutions, companies and initiatives from the Stuttgart region.

Around 25 core players are acting in this large network. They include, for example, higher-education and research institutions from the region and the incubators at both Stuttgart universities: Technologie-Transfer-Initiative GmbH (TTI) at Stuttgart University and Innovation und Bildung Hohenheim GmbH (IBH). The Neckar-Fils association of young entrepreneurs of Esslingen and Nürtingen universities of applied sciences and Wirtschaftsförderung Region Stuttgart GmbH (WRS) should also be mentioned. Many other participants are introducing their services for entrepreneurs into the offer, e.g. the chambers of industry and commerce, the city of Stuttgart and several technology centres.

The moving force of the overall PUSH! project is PUSH! e. V., whose Board decides on new measures in the project. Members from the higher-education institutions are strongly represented; in 2001 the Board was extended by four (deputy) vice-chancellors from the region.

Another main player is the PUSH! agency, which mainly conducts initial talks with entrepreneurs and has now mentored well over 200 people interested in starting up companies.

The PUSH! office coordinates the overall project and is based at Wirtschaftsförderung Region Stuttgart GmbH in order to be able to use synergies with other activities in the region optimally.

The PUSH! higher-education working party, founded in October 2000, has already become an important element of the initiative. This is where professors and staff from higher-education establishments meet regularly for an exchange of information and work. As a cross-institution body, the higher-education working party is used to harmonise curricula, teaching offers and material. Cross-location supplementary offers are drawn up and procurement (e.g. of planning games) are optimised jointly. This leads to a communicative "pool of experts" for the development of new approaches in entrepreneurial training in higher-education establishments.



Peter Hofelich at the PUSH! summer party in 2001. The IBM Director is Chairman of PUSH! e. V. and Deputy Chairman of the Stuttgart region association.

Development lines

Initially PUSH! concentrated on using an optimal support offer to promote the start-up scene at higher-education establishments that was just starting. PUSH! ensured that the players were networked and took its own measures to supplement the service offer in a targeted way. This has resulted in a good start-up balance in the region.

Currently the focus is on tapping the as yet unused start-up potential at higher-education establishments as well as various activities to promote start-ups. This is done with the help of the PUSH! higher-education working party. The professors and higher-education staff in the working party draft proposals as to how the subject of entrepreneurial self-employment can be incorporated in universities in a targeted way. In future PUSH! intends to work towards the permanent incorporation of measures and a continuation of the processes. The aim is to create a permanent culture of self-employment at the higher-education establishments of the region.

Promotion of ideas

The BusinessChance competition of ideas is one of the characteristic PUSH! projects. The competition conceived by PUSH! and implemented jointly with the KEIM EXIST network brought forth a large number of promising business ideas from higher-education establishments in 1999 and 2000. In future it will involve the commitment of professors to a greater extent and will be converted entirely to financing from sponsors.

Starting and guidance service

The PUSH! Agency offers a structured initial talk with experienced counsellors and thus acts as the central starting point in PUSH! as well as a "guide" through the network and the "funding jungle". The PUSH! Agency is available as a constant companion during the start-up process. A transferable concept is currently being developed so that the PUSH! Agency can be moved directly to the higher-education institutions from 2002 and so that it can also be transferred to other regions in the future.

Coaching and funding

Specific PUSH! coaching modules (e.g. PUSH!-kompakt, IT-PUSH! and Marketing-PUSH!) have been developed as a practical extension of the existing offer of "classic start-up advice". Two guidelines drawn up by PUSH! partners on the basis of case studies of PUSH! start-up companies offer valuable information. PUSH! offers direct financial support, up to a maximum of 5,000 Euro per entrepreneur, for training courses, such as law, tax and patent advice.



Information and communication

PUSH! has established various communication platforms both for partners in the network as well as for the entrepreneurs: the online library in the internet serves as an "open" system for the distribution of materials relevant to start-ups. The Virtual Academy represents the current basic and further training offers of the PUSH! partners.

The partner brochure "Start-up 2001 2002 – Wegweiser für Existenzgründungen" offers an additional overview of the broad spectrum of the partners' services.

Customer promotion

Various measures developed by PUSH! players pursue the objective of establishing contacts between start-up and young companies on the one hand and financing partners or potential clients on the other. The Börse für Referenzaufträge, the sector-specific Eulenhof start-up fora and matching fora have to be mentioned as well as the PUSH! enterprise catalogue "Profile 2000 2001 – Junge Unternehmen und neue Technologien". Furthermore, PUSH! supported the trade fair appearances of start-up projects at the specialist trade fairs NewCome (1999 and 2001) and MultimediaMarket 2000 and 2001.

School projects

PUSH! wants to contribute to bringing the subject of enterprise in schools. Thus, in 2000 and 2001 PUSH! supported the project "PriManager – Primaner managen eine AG", initiated by the KEIM EXIST network. The "Nachhaltige Schülerfirmen" project sponsored by PUSH! also wants to raise awareness of the subject of self-employment and entrepreneurship among schoolchildren and teachers.



"PUSH! gives us the opportunity to considerably accelerate the transfer of scientific findings into economic production. Young people are enabled to quickly take on responsible activities and to dare to go into self-employment. As support the Universität Stuttgart offers a centre funded by Technologie-Transfer-Initiative (TTI GmbH) that makes the first steps from university easier for young companies. The technology centre is fully booked; in the last three years we have brought well over 70 companies onto the market, including companies offering innovative platform technologies. These companies also feed interesting scientific issues back to the higher-education establishments so that we have achieved a true Win-Win situation. For us this is incentive enough to interlink practice even more with theory – at the proven high level of the Universität Stuttgart."

Prof. Dr.-Ing. habil. Dieter Fritsch,
Vice-Chancellor of the Universität Stuttgart

In talks at a meeting of the higher-education working party:
Dr. Andreas Chatzis, PUSH! project manager, (left) and Prof. Dr.-Ing. Karl-Heinz Wehking, Deputy Vice-Chancellor of the Universität Stuttgart and member of the PUSH! Board.





“The Swabian is generally considered to be careful with his money and hard-working. The many high-tech companies in and around Stuttgart also prove that he is courageous and in-

ventive. So that their number continues to grow the higher-education establishments in the region have developed a start-up initiative of their own with the support of the Federal Government. This shows another Swabian characteristic that has brought the region to the top of the economy, namely that they never rest on their laurels. My compliments.”

Hans-Olaf Henkel, President of the
Gottfried Wilhelm Leibniz Scientific Community

Prospects for PUSH!

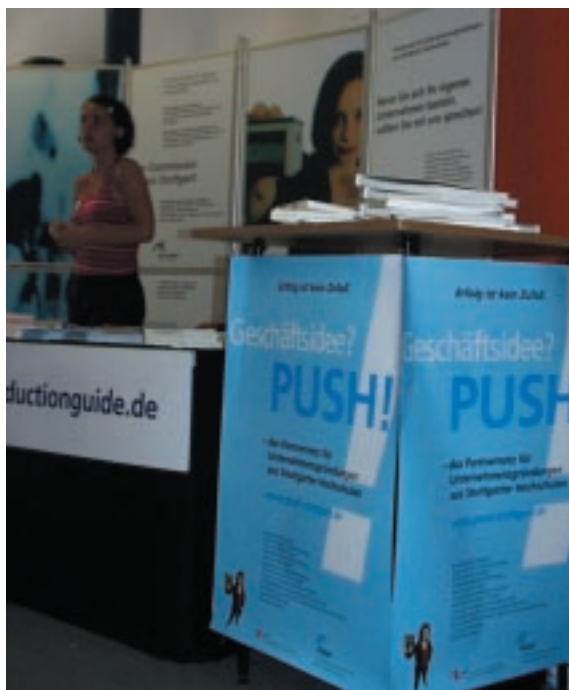
The increasing “decentralisation” of PUSH! activities is now being advanced. In future, partners with a vested economic interest (e.g. the incubators TTI and IBH, universities and universities of applied science) will take on some of the tasks. In addition, a distinction is to be made according to the type of services so that economically viable elements are “privatised”.

The higher-education institutions have increasingly adopted the subject. This is shown by the establishment of the higher-education incubators as independent GmbHs (limited companies) and, not least, the establishment of the Entrepreneurship chair at the Universität Hohenheim as well as the regional cross-institution Centre for Entrepreneurship.

The non-profit oriented TTI GmbH at the Universität Stuttgart brings the university technology and start-up centres to promote the private sector activities of professors and the pre-start-up activities of potential entrepreneurs as well as the infrastructure and counselling capacity necessary for start-ups under one roof. The example shows how the revenue from the technology and start-up centres are used to fund start-up projects and is thus unique and exemplary so far.

Bundling forces in the region

The Stuttgart region offers exceedingly good conditions for an integration of start-up projects in the regional economy. On the one hand, regional alliance projects, in which higher-education institutions and companies are linked together, aim at the technology transfer. This often takes place in the context of company start-ups. On the other hand, the regional skills and innovation centres as a germ cell for sector-centred clusters have the establishment, support and integration of new companies as a fixed element of their programme.



Ubiquitous: as can be seen at Start-up Forum 2001 at Ludwigsburg Film Academy, PUSH! provides information of its offers all over the region.

“The Swabian is generally considered to be careful with his money and hard-working. The many high-tech companies in and around Stuttgart also prove that he is courageous and inventive.”

Initiatives from industry, such as Baden-Württemberg Connected or MedienRegion Stuttgart promote a “Culture of Entrepreneurship” at regional and Land level. The network approach with the strong incorporation of partners from outside higher education and its coordination by regional economic funding guarantees an optimum design of the interface between higher-education/research institutions and the regional economy.

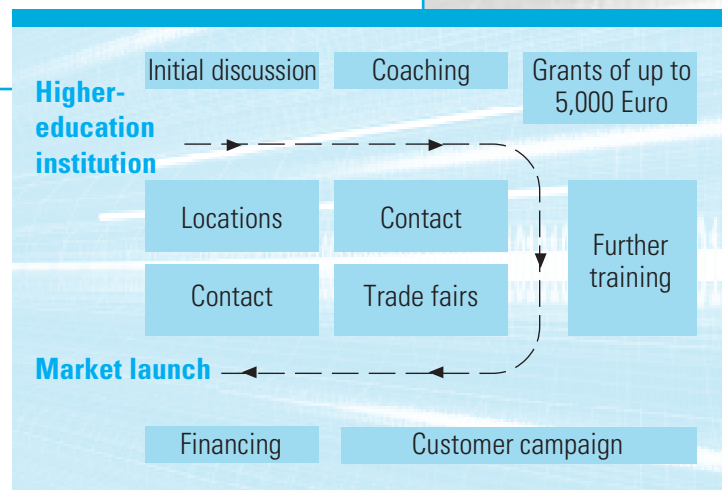
The PUSH! programme runs right through these projects. Thanks to the higher quality of its service offer there is not only added value for the entrepreneurs, but through the targeted exploitation of synergetic effects also for the other players in the network. In supporting start-ups PUSH! acts as a regional “meta network” that links up and supplements the local, much smaller “sub-networks” of the higher-education establishment incubators and thus ensures the quality assurance and increase of the offer. This therefore overcomes the discrepancy between the international orientation of top-level research and the mostly local orientation of the entrepreneurs.

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Project management: Dr. Andreas Chatzis

PUSH! Entrepreneurs' Mall



Just like a shopping centre – PUSH! makes a large range of services available. On the way from the higher-education establishment to market launch entrepreneurs can use the services that they need for their start-up projects.

Example of start-up

m-phasys GmbH: a real success story

The biochemist Dr. Hans Kiefer, the biologist Dr. Wolfgang Arndt and the economic scientist Marc Lohrmann met in 1999 at the research transfer office of the Universität Hohenheim. They quickly came up with the idea of starting a company in the biotechnology sector. With detailed advice from the PUSH! Agency staff, they were given a first injection of cash from the early phase programme of Technologie-Beteiligungsgesellschaft GmbH (tbG) and established m-phasys GmbH in August 1999. The product: large quantities of purified G-protein-coupled receptor (GPCRs) from bacteria cultures. GPCRs are by far the most important targets of pharmaceutical reagents; over 50 per cent of all medicines on sale act on these receptors.

In November 1999 the interdisciplinary team convinced the jurors of BusinessChange '99 with their business idea. In April 2000 this was followed by the second prize in the Württemberg business plan competition "Start-Up", in June 2000 an award as best European young entrepreneurs. Furthermore, with their concept they acquired the venture capital company and PUSH! partner TechnoStart as lead investor. The consortium of investors joined m-phasys with around 1.5 million Euro. The same amount was also granted by tbG GmbH. This means that m-phasys GmbH was able to further optimise its M-Fold technology, for which a patent application has been submitted, and to take on new staff. The young company now has 25 employees.



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The start-up team of m-phasys: Marc Lohrmann, Dr. Wolfgang Arndt and Dr. Hans Kiefer (l.t.r.).

EXIST-HighTEPP

The postgraduate programme for start-up oriented training at higher-education establishments

EXIST HighTEPP, the "High Technology Entrepreneurship Post Graduate Program", is a sub-project of EXIST. It has the aim of improving start-up-oriented training at higher-education institutions and supporting technology-oriented company start-ups.

The 21 students on the programme – graduates in business economics, computer science for business and natural sciences – manage start-up projects, thus helping to improve the entrepreneurship training at the universities involved (Jena, Bamberg and Regensburg) as well as the start-up landscape there.

The management of start-up project requires interdisciplinary skills. Economists can acquire this in laboratory or IT company internships lasting several weeks. The scientists, by contrast, take part in economic training programmes, sometimes involving a period at a university abroad.

The participants also work on entrepreneurship research projects that help them to successfully passing the course and train them for a career in science and research. EXIST HighTEPP therefore has two aims: on the one hand to educate the next generation of business start-up managers and, on the other, to train highly-qualified managers for innovative, technology-oriented companies.

The postgraduate programme is a joint project of the universities of Jena (a partner in the GET UP EXIST network), Bamberg and Regensburg. The strengths of each university region make it possible to work in parallel on projects in life sciences and in information technology.



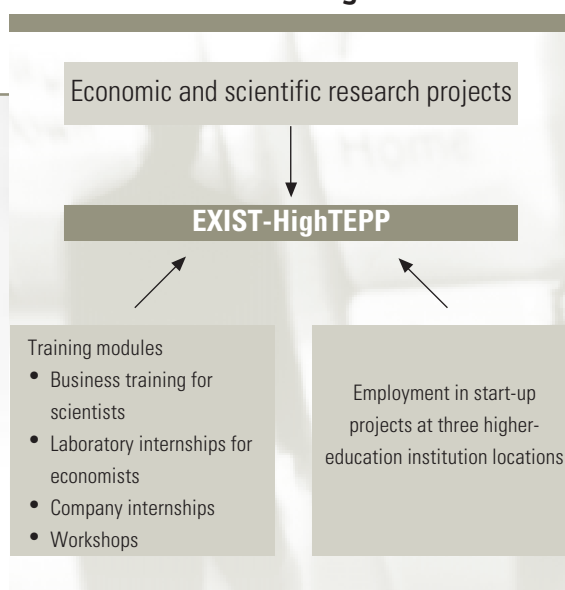
An economics graduate in the lab. The EXIST HighTEPP programme is interdisciplinary and, for example, gives economists the opportunity to gain practical experience in laboratories.

EXIST HighTEPP works closely with respected partners from start-up firms, venture capital companies, management consultants and established technology firms. International exchange is highly valued: students can elect to undertake training modules at universities abroad, in particular in the US. Periods of research abroad are also being planned.

Contact

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Elements of EXIST-HighTEPP



EXIST-Seed

From business idea to business plan

EXIST Seed is part of the EXIST programme and is equally available in all EXIST regions. EXIST Seed is targeted at students, graduates up to five years after graduation and young research assistants from higher-education institutions in the five EXIST regions. The programme offers the target group direct support in developing their business idea in preparation for setting up a company.

Reducing risks for entrepreneurs

Appropriate research results, such as may emerge from a dissertation or doctorate, are needed as the economic basis for innovative start-ups. EXIST Seed sets out to create incentives and reduce the personal financial risk in the period before a start-up, in which there are no external financial backers. This gives the would-be entrepreneurs the chance to concentrate on developing a good business idea. Also, the programme actively supports the development of the individual's entrepreneurial skills.

EXIST Seed provides financial support for the prospective entrepreneur for a maximum period of one year: graduates entering the programme receive remuneration equivalent to half the salary level of one public-sector white-collar worker post (depending on the tariff structure at the higher-education establishment in question): for university graduates, for example, the corresponding level is BAT IIa/2. Those still pursuing courses of study receive a maximum of 7,500 Euro. Additional funding is available for coaching and advisory services and for assets.

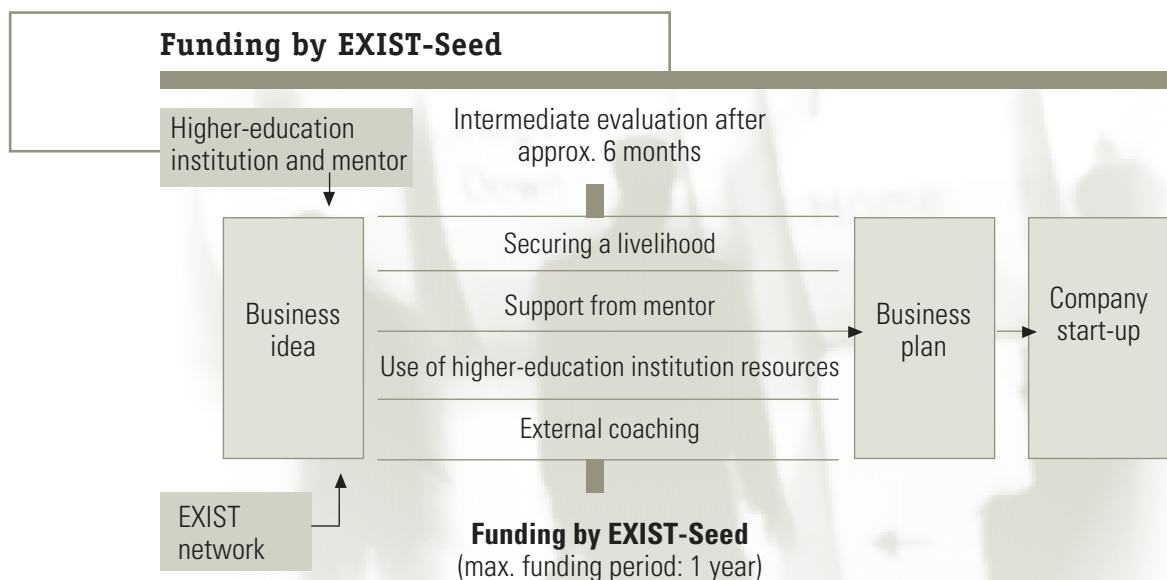
Preconditions

It is a requirement of acceptance on the programme that would-be entrepreneurs are guided by a mentor or professor at their institute of higher education and that they have free access to the resources of that establishment. The competent EXIST networks support the would-be entrepreneurs in developing their business idea into a business plan.

EXIST Seed is thus different from other programmes that ask for a completed business plan as a requirement for funding. In this programme the would-be entrepreneurs also undertake to take part in coaching sessions, in particular to deal with product marketing issues.

After about six months, recipients of EXIST Seed funding have to pass a first hurdle in the shape of a Group Assessment Centre. The would-be entrepreneurs have to "sell" themselves and their ideas and thus get feedback about their suitability as entrepreneurs.

EXIST Seed is given project funding by the project management Jülich (Pt J). The application is placed by the higher-education institutions. The project management offers advice in drawing up the application and evaluating the proposals. It also checks the application documents and makes a recommendation for funding. The agencies in the regional EXIST networks provide initial advice for the potential entrepreneurs.



First experience

The first experience with this funding instrument is certainly positive: over 100 applications and proposals have been submitted for inspection and almost two thirds of them have been approved for funding. At around 100, the number of entrepreneurs funded is slightly higher because one third of EXIST Seed projects are team start-ups.

The focus of the start-up projects can be found in the field of information and communications technologies, biotechnology, environmental technology and engineering sciences. A number of companies have already been established, several start-ups are planned in the foreseeable future. The measure is viewed extremely positively by all of the entrepreneurs: EXIST Seed motivates and accelerates the decision-making process.

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EXIST Seed helps teams of entrepreneurs to "hatch" their business idea.



Scientific Support

Tasks and objectives

The EXIST programme is given scientific support by the Fraunhofer-Institut für Systemtechnik und Innovationsforschung (ISI). The aim of this work is to support the fund providers in the implementation of EXIST and in the individual measures of the programme.

Project support comprises four closely linked focuses of work:

- Supporting and monitoring goal implementation
- Support for the five regions on common themes
- Scientific analysis of selected project aspects
- Overall evaluation and good practice strategies

Scientific support is designed as a process of mutual exchange and learning and is given in close cooperation between the ISI, the Federal Ministry of Education and Research, the project manager Pt J and the individual projects. In this process, the ISI sees itself as observer, advisor and discussion partner.

Work to date

In order to create comparability among all initiatives and a foundation for the overall evaluation of EXIST, at the start the ISI drew up a uniform measurement concept of quantitative and qualitative indicators. The first overall evaluation of EXIST is planned for the end of 2002. In the following some important findings of the scientific work to date will be presented.

First observations

At regular intervals the ISI submits reports on the state of affairs as well as reports on individual aspects. This monitoring could be seen after one year of EXIST (end of 1999): the majority of the diverse individual measures of the five initiatives had been implemented since the start of funding in 1998 and were available to the target group as support offers.

Other activities were approached in the following months. The initiatives modified the original concepts in some respects. They therefore considerably increased their efforts to raise awareness of the subject of start-ups among the target groups. All the EXIST networks now have subtly differentiated marketing for the teaching and mentoring offers so that more students and research assistants use them. Another objective was to involve a large number of professors in the implementation of the EXIST initiatives above and beyond the promoters.

The subject of start-ups in teaching

The specific enterprise chairs exercise a beacon function in the integration of the subject of start-ups in teaching at higher-education establishments. However, they soon come up against their capacity limits. A larger number of promoters among the professors can actively propound the subject within the teaching staff and to students to more effect. This is especially the case if professors from the technical or scientific faculties act as promoters.

A range of different teaching events that develops successively and adapts demand has established itself at practically all of the EXIST higher-education establishments. In this connection, the EXIST networks are following two different paths: on the one hand there are training courses with relevance to examinations, on the other hand start-up knowledge is also taught outside the fundamental teaching, but is not relevant to examinations.



Fraunhofer Institut
Systemtechnik und
Innovationsforschung

Fraunhofer-Institut für Systemtechnik und Innovationsforschung (ISI)

The ISI was founded in 1972 and enhances the scientific and technical activities spectrum of the Fraunhofer-Gesellschaft by working in areas spanning the fields of technology, economics and society.

Scientific back-up for the EXIST programme is provided by the Institute's department of "Innovation Services and Regional Development" (IR). IR is one of seven departments within the ISI concerned with technology companies and their environment.

Discussion and information

The results of the monitoring and experience of the initiatives from practice are discussed at the EXIST workshops – organised by the project support – and in bilateral talks with the initiatives. The aim is to spread information between the regions at an early stage.

Project support also backs up the EXIST networks in interdisciplinary themes, e.g. by means of documentation on experience abroad with start-up funding at higher-education institutions. More detailed insight into the work of EXIST initiatives is given by the project database on the EXIST homepage at www.exist.de. The database has been developed by the ISI and is updated regularly.

Network analysis

After a year of EXIST (end of 1999) the ISI conducted a communications and network analysis that was based on the estimates of the relevant network partners on the way of working and on obstacles as well as the progress that the five initiatives had achieved at that point.

It could be seen that a group of core players has been emerged in all the initiatives that advances the implementation of the concept and involves other facilities in the region. There was a need to catch up with respect to transparency within the networks ("What are the others doing?"), internal communications and marketing to the outside world and to the target groups. It was also confirmed that network formation is a process that takes place over several years.

The success factor of the organisational structure

Various partial analyses come to the conclusion that the organisational structure has proved to be a factor in the success of the initiatives. Three of the five EXIST initiatives are characterised by a decentralised distribution of power and funding on the operative level. Strategic decisions are taken by a body comprising representatives of the core players. Representatives of the higher-education institutions play a central role in making and implementing decisions. Project development (implementation of the original plans) takes place from the higher-education institutions.

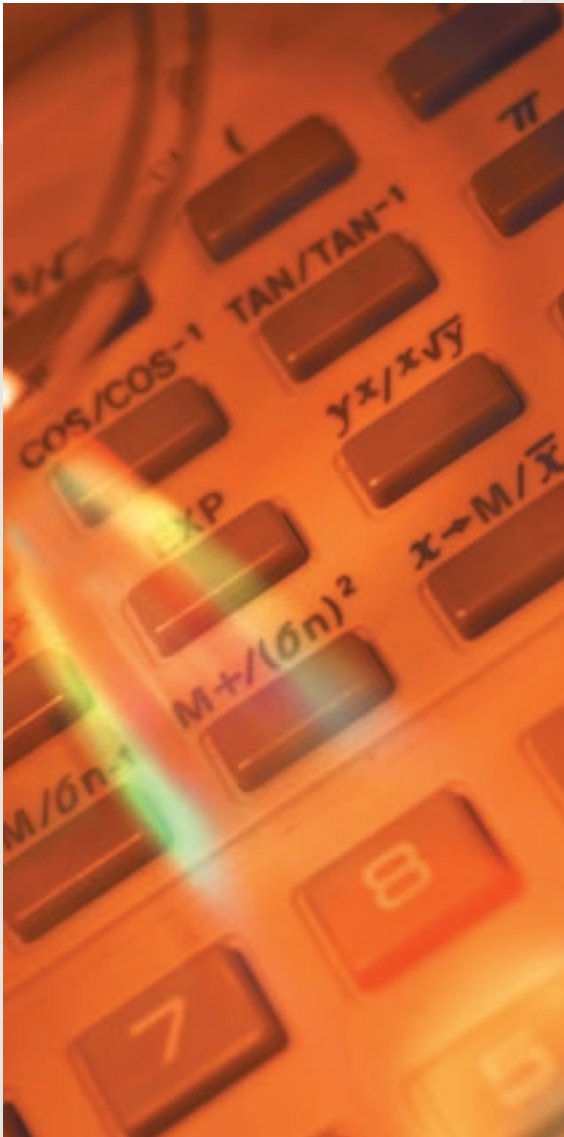
With the decentralised structures with several core players it has been shown that cooperation between different academic institutions and disciplines even bring about amplifying effects.

Project Management

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Enterprise culture at universities

At two different times the ISI is questioning students about their use of the support offers and their start-up intentions in order to identify changes in the enterprise culture of the five EXIST regions.

The first survey took place among 5,400 students at ten establishments in EXIST regions in the Winter Semester 2000/01. The most important findings: the attitude to self-employment is definitely positive, just under 40 per cent of students would like to have their own company or work as freelancers (mainly after five years). There was also strong interest in start-ups among students with work experience. The main difficulty for self-employment cited was the procurement of the capital needed. There is obviously a great need for information here.

However, participation in the higher-education institutions' start-up-specific teaching offers is still low when compared with the proportion of people interested in start-ups and the high recognition factor of the initiatives. The probable reason for this is that many people are interested in a start-up in principle, but will not complete their studies for several years.

A repetition of the questioning at a later point is supposed to show how and the extent to which the enterprise culture has changed.

Survey among entrepreneurs

A survey with a view of start-ups associated with the EXIST initiatives is planned for the end of 2001. The aim is to find out what offers the entrepreneurs use, how they assess the benefits of them and where they feel more services would be desirable. The way in which the networks work is also to be studied from the point of view of this target group. Using these results, the initiatives should adapt their offers more closely to the needs of the target group.

Project Management Pt J



The project management Jülich (Pt J) is an organisational unit of Forschungszentrum Jülich GmbH. It supports the Federal Ministry of Education and Research and the Federal Ministry of Economics and Technology in preparing and implementing research and technology programmes.

The task is the service-oriented and expert processing of project funding. In this connection, the project management Jülich provides expert advice to the applicants, assesses the applications and provides scientific, technical and administrative support.

The Pt J branch office in Berlin is also the central information office for all funding programmes of the Federal Ministry of Education and Research.

EXIST project management

The Pt J Berlin spectrum of tasks for the EXIST programme comprises financial project management and controlling of the funding activities.

Pt J Berlin supports the EXIST networks and their partners in conceiving and harmonising of joint projects and in the financial and administrative processing of individual projects in the regions. Pt J monitors project implementation in the regions and reports on it to the Federal Ministry of Education and Research. Furthermore, Pt J supports the Ministry in the implementation and coordination on supra-regional-initiatives.

Other projects

Pt J Berlin also directly supports would-be entrepreneurs: Thus, for example the FUTOUR programme ("Funding and supporting technology-oriented company start-ups in the new Federal Länder and East Berlin") is being carried out for the Federal Ministry of Economics and Technology. The project management advises and supports the entrepreneurs in drawing up the financing concepts and in acquiring participation capital. It also gives advice on setting up marketing and distribution structures and offers series of seminars in the form of talks with entrepreneurs. Experienced experts give presentations on case studies with focuses from everyday business life of growth and start-up companies. Pt J has so far supported over 250 technology-oriented company start-ups. Furthermore, Pt J also takes care of the programmes InnoRegio, Regionale Wachstumskerne and the Verwertungsoffensive for the Federal Ministry of Education and Research.

Pt J can be found in the internet at www.fz-juelich.de/ptj.



Further Information

Ideas

The following contains supplementary information and further references on the subject of business start-ups from higher-education institutions and research establishments. It is not to be viewed as an exhaustive list.

Information available from the Federal Ministries

The Federal Ministry of Education and Research produces a range of publications concerned with knowledge-transfer and entrepreneurship as a goal of education, including:

- "EXIST-News", a regular newsletter about EXIST, which also includes reports on other current studies;
- the "Faktenbericht zum Bundesbericht Forschung" (facts and figures for the Federal Government report on research) which contains extensive background information on science and research in Germany (also available on CD-ROM);
- the "Bericht zur technologischen Leistungsfähigkeit Deutschlands" (report on the technology capabilities of Germany), an annual publication containing information on the development of innovative business start-ups in Germany.

The Federal Ministry of Economics and Technology offers extensive information for prospective entrepreneurs, including

- a brochure entitled "Starthilfe – der erfolgreiche Weg in die Selbstständigkeit" with advice on how to set up a successful business and
- one called "Innovationsförderung – Hilfen für Forschung und Entwicklung" (produced in conjunction with the Federal Ministry of Education and Research), which reports on all the research and development support available from the Federal Government.

Information on the internet

■ www.exist.de

The EXIST web site with information on the five regional networks and national initiatives.

■ www.bmbf.de

The web site of the Federal Ministry of Education and Research with information about innovations support, specialist programmes, etc.

■ www.bmwi.de

The Federal Ministry of Economics and Technology offers specific information for would-be entrepreneurs. Also includes a database of all programmes run by the EU, the Federal Government and the regions.

■ www.dta.de

Web site of the Deutsche Ausgleichsbank offers information and advice for business start-ups, including a virtual business start-up trainer.

■ www.g-forum.de

Web site of an interdisciplinary forum for business start-up research.

■ www.gruenderlinx.de

GründerLinX is an edited list of links for entrepreneurs and SME companies

■ www.gruenderstadt.de

Gründerstadt is a large platform containing everything about start-ups, for would-be entrepreneurs and the self-employed.

■ www.theo-prax.de

A training model for schoolchildren and students as well as teachers and professors.

■ www.iw-junior.de

A project for schoolchildren above year 9.

■ www.existenzgruenderinnen.de

A learning programme for successful start-ups and company management for women, supported by the KEIM EXIST network.

Regional programmes and initiatives

In addition to programmes organised by the central government, there are also many initiatives organised by the Federal Länder and various regions to promote business start-ups from universities. A few of these are outlined in the following. A range of initiatives are also under way in individual universities. A collection of start-up initiatives at universities can be found at www.exist.de/netzwerke.

Baden-Württemberg

■ The “Junge Innovatoren” programme gives subsistence grants to young, innovative entrepreneurs in the early stages of setting up their business.

■ The “Gründerverbunde auf dem Campus” initiative gives entrepreneurs in the early stages of setting up a business access to the resources of the universities and research establishments.

Bavaria

■ FLÜGGE (“Bayerisches Förderprogramm zum leichteren Übergang in eine Gründerexistenz”) provides paid, part-time jobs at higher-education institutions for young entrepreneurs who are in the process of drawing up a business plan, thus securing a basic income for them during this phase (www.fluegge-bayern.de).

■ Hochsprung – the higher-education institution programme for would-be entrepreneurs at fourteen Bavarian higher-education locations offers tips on starting a company, help in finding the right contact and specific support for people interested in starting a company and for entrepreneurs (www.hochsprung.de).

Berlin

■ The “Unterstützung von Existenzgründung” project is a joint initiative of the Berlin higher-education institutions to support graduates who want to set up their own companies in innovative areas in direct contact with science.

Hamburg

■ The “Hamburger Existenzgründungsprogramm” (hep) is an initiative of the Hamburg higher-education establishments and their partners from research, science and politics for the stimulation and active support of start-ups from higher education and research establishments (www.hep-online.de).

■ The “Gründerjobs” programme offers graduates and staff from higher-education and research institutions financial assistance for up to six months in the conception phase of the start-up.

Mecklenburg-Western Pomerania

■ “start” is a programme for start-ups at the Western Pomerania technology centre with the objective of supporting young graduates in their transition into self-employment. It combines training, mentoring and subsistence grants (www.technologiezentrum.de/start).

North Rhine-Westphalia

■ Various universities in the Land use “GO!” (Gründungsoffensive Nordrhein-Westfalen) to publicise their programmes and services for would-be entrepreneurs (www.go-online.nrw.de).

■ PFAU (Programm zur finanziellen Absicherung von Unternehmensgründern aus Hochschulen) provides financial support for a maximum of two years for graduates starting up their own businesses.

Saarland

■ The “Starterzentrum” at the University of the Saarland provides support to graduates and research assistants in the early stages of setting up a business by making available a professional and affordable environment. The “Aktionsprogramm zur Förderung technologieorientierter Jungunternehm-en” targets prospective entrepreneurs who are recent graduates and who have an innovative product idea.

Saxony-Anhalt

■ The “Junge Innovatorinnen und Innovatoren” programme provides support to young graduates and research assistants for up to two years when they are preparing for their business start-up.

Addresses

Internet

www.exist.de

Networks

■ **bizeps**

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