

The Cluster Initiative – ‘Zurich Mednet’ – Swiss Biotechnology – Virtual and Real Market Platforms

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Introduction

Biotechnology and life science are striking examples of the key technologies of the early 21st century. This is particularly true of a country such as Switzerland, a nation deprived of natural raw materials but well known worldwide as a high-value oriented research center. Zurich MedNet is a successful information resource and business development network, serving the medical and biotechnology community of the Greater Zurich Area. Set up as a virtual community comprising more than 450 companies, universities, institutes, foundations, hospitals and laboratories. “Zurich MedNet is the single largest medical/biotech cluster in continental Europe, geographically well positioned in the heart of the old continent,” it was noted by Thomas Kärcher-Vital, Project Director of the Initiative. But at the same time Zurich MedNet is also very real. The economic development initiative forms an important component of the network web of Greater Zurich and supports companies in Switzerland and abroad in their efforts to find quick and effective solutions for their varying needs. Well aware that the difference between the old economy and the new economy is ultimately based on one key factor, namely speed, Zurich MedNet operates in a highly flexible manner and can provide the enquirer with the right information within a brief time.

www.zurichmednet.org

“Organizing and planning its competitive future, Zurich MedNet has formed a strategic alliance with the University of Minnesota’s MBBNet, an information resource web portal to that State’s virtual biomedical and bioscience community,” it was explained by Dr. Phillip Kennedy, Zurich MedNets’ Senior Representative for North America and important benefactor behind the Initiative. Together, Zurich MedNet and MBBNet represent the world’s first and largest medical/bio cluster/web portal alliance, linking research and information resources for more than 1300 organizations (January 2001).

www.zurichmednet.org is a reliable resource address for valuable information and an efficient entry portal for MedNet companies into Switzerland and Europe.

The goal of Zurich MedNet is to create awareness of the impressive medical cluster which has developed over the last 25 years in the Greater Zurich Area. It also seeks to generate a quick information flow between companies, institutes and other establishments on a global basis. Due to the increased network needs of high-technology companies and organizations, it seems only logical that these companies seek the neighbourhood and environment of similar companies. Zurich MedNet is the first successful cluster strategy of the Zurich network, acting as the official economic development organization for the entire business and industrial community in Greater Zurich.

Life Science Park in Greater Zurich

The year 2001 will witness the launch of the “Life Science Park” in Zürich-Schlieren, an initiative which has been conceived, planned and co-implemented by Zurich MedNet, economic development agencies of the Canton Zurich, institutes from the ETH and, last but not least, by innovative companies from the biotechnology sector such as Cytos, Esbatech, Prionics and Degradable Solutions. The creation of the Life

Science Park is an excellent example of adapting to new needs of companies in the life sciences and thus of optimizing the existing infrastructure.

Zurich – A Traditional Center of Finance

In recent years, Swiss industry has attracted considerable media attention through a series of biotechnology acquisitions and partnerships in the U.S.A. The Swiss Stock Exchange (SWX), based in Zurich, has been the scene in the year 2000 of successful IPO's by life science companies, such as Card Guard, Jomed, SHL Telemedicine or else Bio Marin back in 1999.

The new drive in Swiss biotechnology is reflected in the country's financial community. The last two years have seen the creation of a number of funds focusing on private equity and venture capital financing. Many of them explicitly seek opportunities in the biotech field.

The availability of capital for the establishment for new companies has clearly improved, despite the varying success analysis for this industry sector. Swiss venture capital funds already in operation include more than 60 financing resources. Among these are the Lombard Odier immunology fund, the Private Equity Holding fund-in-fund of Bank Vontobel, the joint "Innoventure" set up by Credit Suisse, Roche and Advent International, UBS Venture Capital, start-up grants provided by the Zürcher Kantonalbank, the Renaissance Fund, the SCL Corporate Fund, the International Biomedicine Management Partners, New Medical Technologies Fund, and one fund managed by the Eidgenoessische Bank (EIBA).

The Management of Zurich MedNet puts serious business candidates in contact with venture capitalists to increase the success chances of the company.

Regular Universities and Universities of Applied Sciences – A Case in Point

Applied research and the early commercialization of business ideas are key strengths of the modern life science industry. Switzerland has, in general, been quick to react to these changes. The Universities of Applied Sciences furnish an important asset for this academic evolution. Whereas non-specialized universities have opened up gradually to industry and no longer focus exclusively on basic research, the universities of applied sciences have strengthened their ties with industry over the years and can now participate in small and medium scale projects within a short time frame. The simplified project structure enables SME (small and mid-sized enterprises) to find competent scholastic partners to verify pilot projects at short notice. In the field of biotechnology, the Universities of Applied Sciences in Wädenswil and Winterthur are shining examples of well-understood support structures for innovative company ideas.

Swiss Industry : Accepting the Fast Evolution of Biotechnology

Building on a long tradition and economic strength in life sciences, Switzerland has assembled considerable expertise in bioscience over the last few years. Leading companies in the pharmaceutical industry have scored impressive advances in research and development. More recently, the macro-view of biotech in this country has resulted in the promising situation where small and medium-sized enterprises are in a position to support major corporate enterprises.

Unitectra – the Biotechnology Technology Transfer Agency for the University of Zurich – has identified a considerably higher number of Swiss companies with significant biotech activities than had been publicly assumed. The 239 firms identified include a large number of small and medium-sized companies. The firms are spread

over 20 of Switzerland's 26 cantons. There are three geographical clusters. Greater Zurich's 65 companies have more than 1000 employees and the Lake Geneva Region has about 30 companies with 1000 employees⁴. The region of Basle has more than 4000 employees with a company base of around 40. These numbers show a typical pattern of the geographical cluster of biotechnology in this country. The Greater Zurich Area profits from the increasing academia thrust, which allows fast spin-off opportunities and the traditionally strong finance sector attracts biotechnology. Regional initiatives throughout the country have made biotech a priority 'A' cluster and will be active in promoting and supporting the industry.

Almost one-third (64) of the companies featured use modern biotechnological methods in R&D and/or production processes. 30 companies work exclusively on genetic engineering. About 10% (19) of the companies are specialized manufacturers of biotechnological equipment. 45% (92) of the companies listed are suppliers with manufacturing facilities in Switzerland or abroad. Current total employment is estimated at over 7000. The number is growing steadily.

From Research to Product – The Swiss Way

The growth of any science-based technology and industry depends mainly on the local educational system and public & private research institutions. Switzerland is a leading research nation, ranking first in terms of publications per person¹. In terms of "relative citation impact," Switzerland is the leader in immunology, molecular biology, pharmacology and physics. Along with engineering sciences, these are core biotechnology disciplines. This small country with just over 7 million inhabitants sports two recent Nobel Prize winners in biomedicine: Werner Arber (Molecular Biology, 1978) and Rolf Zinkernagel (Immunology, 1996). It can also be proud of the worldwide reputation of its scientists, such as BSE expert Charles Weissmann.

Above-standard university research continues to provide a superior foundation for the development of innovative technologies and products. Existing university research in the field of biotechnology has been further boosted by the successful implementation of the Priority Program Bioechnology (SPP BioTech) of the Swiss National Science Foundation. Its main focus is on application-oriented research. More than 100 companies, mostly small and medium-sized enterprises (SME), have already participated in or interacted in some way with at least one of the research projects. The good news is that by July 1999, eight spin-off companies have started their activities on the basis of significant input from the SPP BioTech.

The Swiss universities and the multinational chemical and pharmaceutical companies increasingly pool their knowledge to meet the rapidly changing demands of technology and markets. This has led to the creation of more than 45 new biotech companies during the past four years; a large number when seen in relation to the small population. Typically, these companies are small, but a number of them show significant growth potential. Two of the forces driving the entrepreneurial spirit are globalization and less job security in the big companies. As a result, students are now more open to considering alternatives when planning career paths in SME and start-up companies, rather than joining a multinational company.

⁴ Update of the Guide of Bitoech Swiss companies. Personal communication from A. Sigrist from Biotectra, Zurich

¹ R.M.May Science 275, 793-796 (1997)

Some Statistical Information

Apart from data generated at universities and economic agencies, there are other sources of data on biotech. One influential analysis is the annual Ernst & Young report on biotechnology and the bioindustry in the U.S.A. and Europe. The report covers all companies which use modern biological techniques to develop commercial products for human or animal healthcare, agricultural productivity, food processing or environmental services. A frequent additional attribute of the companies covered is their venture capital backing. The 1997 European edition shows a sharp rise in the number of Swiss biotech companies, but lists a total of only fifteen⁵. The 1998 edition contains about 50, half of them being start-up companies⁶

All analysts agree that the number of Swiss start-up companies and university spin-offs (13 university spin-offs, and over 30 start-ups in the last 24 months) is steadily increasing. Some are spin-offs from large pharmaceutical companies. The Association of Swiss Biotech Companies (AESB), established in March 1998, has 106 member companies (January 2001), mostly small and medium-sized companies. It intends to promote biotechnology in this country and actively represent its members' interests in political and other circles. One of AESB's essential goals is to facilitate technology transfer between its members and universities. AESB will also advise foreign biotech companies looking for development opportunities in Switzerland. Zurich MedNet is actively partnering with AESB to optimize the service structure for foreign companies.

The national business plan competition for university scientists, organized by McKinsey & Company and the Federal Institute of Technology in Zurich (ETH), has attracted considerable interest. More than 20% of the 215 projects submitted were in the field of biotechnology and life sciences. Most Swiss universities have also realized the importance of more active technology transfer. The necessary guidelines and structural changes for dealing with industry are recognized as priorities by the relevant authorities, and are being put in place. They include greater flexibility for professors in collaboration with third parties, accepting consultancy work, and capitalising on their innovations. There will also be incentives for transfer projects, and coaching students how to establish their own companies.

Public Perception – A Key Factor for Legislation and the Population

Swiss citizens were the first in world to decide on the complex technical and emotional issues surrounding genetic engineering. They rejected prohibition by a margin of 2 to 1. The June 7th 1998 vote gave the development of Swiss biotechnology a definite boost. New legislation is now in preparation and undergoing implementation. This will take into account the needs of the commercial sector, as well as public expectations in regard to safety and information. It is coupled with a dialogue on ethical concerns about the dignity of human and non-human organisms.

Switzerland has at its disposal both first-class university research and a strong position in modern industrial biotechnology. Together with improved financing possibilities and sound legislation, these strengths offer a good basis for further development in this field. Biotechnology has already produced important results in the areas of health, nutrition, environmental protection, raw materials and speciality chemicals. Switzerland is in a strong position to keep pace internationally with future rapid developments in biotechnology. To do so, however, the country will have to build firmly on its existing strengths, and improve the transfer of technology between

⁵ European Biotech 97 – A New Economy, Ernst&Young International, Stuttgart (1997)

⁶ European Life Science 98. Continental Shift, Ernst&Young International, London 81998)

universities and industry. Appropriate training incorporated in the educational projects by potential scientific entrepreneurs must be given serious consideration.

Glossary

Biotech Companies	Companies with business focus on the biotech/life sciences area
The Zurich Network	Marketing Organization of the Greater Zurich Area
Zurich MedNet	Marketing Development Initiative of the Greater Zurich Area

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