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Ascenion Information Letter
September 2007

Ascenion Achieves Record Results in 2006

2006 Highlights

- Revenues from licensing and material transfer agreements increased by 41.9% to a total of 1,177 million Euro.
- Revenues from Ascenion's service business and from the sale of equity surpass 1 million Euro. 1 million Euro thereof is earmarked to be distributed to the Life-Science Foundation for the Promotion of Science and Research.
- More than 2 million Euro total income from technology transfer will therefore be passed on to the research organisations.
- 58 material transfer and licence agreements were closed on behalf of Ascenion's partners.
- 71 new invention disclosures were made by scientists from Ascenion's partner institutions.
- 51 new patents were filed based on Ascenion's recommendation.
- One new spin-out was started with the help of Ascenion (Nanorepro GmbH).
- A new foundation was established to market a range of animal models to industry.
- Eight research institutions in the Leibniz Association and the Hanover Medical School were won as new partners.
- Ascenion welcomed three new team members and new offices were opened in Hamburg and Hanover.

Record returns for public research

In the first half of 2007, Ascenion reported combined 2006 results to its partners. It was a record year in terms of both revenues and growth, and a particularly exciting one for Ascenion's team. "The major challenge was to keep up the pace with increasing marketing and licensing activities for our long-term partners while integrating new institutions and employees," comments Dr Peter Ruile, Ascenion's COO.

In 2006, Ascenion's total revenues surpassed EUR 2m, for the first time. About half of

this sum originates from licence or material transfer agreements mediated by Ascenion on behalf of its founding partners the GSF (National Research Center for Environment and Health), the HZI (Helmholtz Centre for Infection Research) and the MDC (Max-Delbrück-Center). These revenues were directly transferred to the respective partner institutions. In addition, Ascenion successfully initiated commercialization activities for the newly established MGC Foundation to market a range of animal models for Prof. Klaus Rajewsky. By the end of the year, five agreements had been closed by the new

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foundation and the resulting revenues were passed on to fund various research projects in the field of immunology. Ascenion's other revenues in 2006 are from the sale of equity, from third party consulting business and from IP services for third parties. The latter comprise a range of activities including IP due diligences for the Bill and Melinda Gates Foundation, market and feasibility studies for clients such as Deutsche Bank, consulting work for the High-Tech Foundation Fund and industry. A major part of these profits – 1 million Euro – will be distributed to Ascenion's sole owner, the Life-Science Foundation for the Promotion of Science and Research, which will fund public research projects with that money.

Since 2001, Ascenion has brought about continuous increases in revenues from technology transfer at its partner institutions. "Our founding partners in the Helmholtz Association have now reached the inflection point where their cumulated revenues resulting from our support outweigh their investments into our services," Dr Christian Stein, Ascenion's CEO, points out.

Partner and IP portfolio management

With the new partners from the Leibniz Association and the Hanover Medical School, however, there is still work to be done. In 2006 and early 2007 Ascenion focused its activities for these institutions on basic work to prepare the ground for effective IP asset management, i.e. building relationships, increasing awareness among scientists for IP issues, re-assessing existing IP portfolios and setting up processes to help identify commercially attractive results before publication. Overall, Ascenion held ten educational training courses, evaluated around 250 patent families and recommended that 30% of these be abandoned. New invention disclosures from all – old and new – partners amounted to 71 in 2006. About 16% thereof were declined, 65% recommended for patent application and 19% are still under evaluation. "It is not only the size, but also the quality of our patent portfolio that counts," Dr Anja Zimmermann, Ascenion's analyst, explains. The stringent selection of commercially viable projects does not only increase the attractiveness of Ascenion's business opportunities for industry but also ensures a fair cost/benefit ratio for the research institutions. By following its recommendations and giving up less-promising patents Ascenion's partners saved about 25% of patenting costs compared to earlier portfolio costs.

Start-up management

The spin-out business gained pace throughout 2006. Two companies were newly founded in 2006: Firstly, Nanorepro GmbH, a spin-out from Marburg University, was founded to offer cryopreservation of adult stem cells as a service to the general public and to develop an over-the-counter home fertility test for men. Secondly, Ascenion supported GSF researcher Dr Igor Tetko in winning a GO-Bio award for the further development of a chemo- and bioinformatics tool to test novel medicines for their pharmacological properties. "Currently, we have many more projects in the pipeline," Dr Christian Stein adds, "and expect to announce a minimum of three new start-ups and equity deals by the end of 2007." In response to the increasing demand for information, Ascenion has also created an introductory brochure for life science entrepreneurs that is available for download on the company's [website](#).

Gaining weight ...

In terms of science base and IP portfolio, Ascenion has grown to become one of the largest technology-transfer organizations in Germany. The team now serves approximately 6,500 employees at 13 partner institutions spending a cumulated budget of about 480 million Euro a year on life-science research. Ascenion's IP portfolio currently includes around 600 commercially viable patent families. This is very likely one of the largest sole academically-sourced life-science patent portfolio in Germany..

...in a changing tech-transfer landscape

According to a recent publication by the German Science Council, a sector-specific approach to technology transfer such as that pioneered by Ascenion could become a major role model in the future. In their "Recommendations on the interaction of science and business", the Council suggests – amongst other measures – that the fragmented technology-transfer landscape in Germany should be restructured. In particular, small tech-transfer agencies that currently serve nearby institutions regardless of their scientific focus should consider re-organizing and developing distinct, technology-specific profiles. Another issue addressed by the Science Council is the gap between early research and its commercial application. Dr Peter Ruile of Ascenion agrees: "This gap provides a major hurdle to technology transfer. We are therefore in the process of creating new tools to fund the development of early projects up to proof-of-concept, where they

become attractive for in-licensing through industry." In view of the Science Council's paper, Ascenion is well positioned to master the challenges of increasing international competition and the substantial, foreseeable changes in the German tech-transfer landscape that will take place when the ongoing Federal Government's funding program for technology transfer is phased out by the end of 2007.

Outlook

"This is certainly not a time to lean back," Dr Christian Stein comments. "We will continue to grow – though at a reduced pace – to consolidate Ascenion as a leading IP asset management company in the field of life sciences." Over the coming months, Ascenion will also spend significant resources on the consolidation of existing partnerships to gradually shift the focus from basic IP management work to commercial exploitation and development of IP. In 2007, the company expects a moderate increase in the number of commercialization agreements and in resulting revenues for its partners. "Overall, we are well on track," Dr Stein says. With 58 agreements mediated by the team in 2006, Ascenion is well positioned in the German technology transfer community. "But we also know that it will take a blockbuster product originating from one of our partners to boost our revenues to a level that would compare to the well-established international ivy league of tech-transfer offices." Christian Stein is confident that with more than 200 agreements closed and about 10 million Euro in revenues channelled back into the scientific community that this last and most important step is within Ascenion's reach within the foreseeable future. Several products originating from its partner institutions are currently at various stages of clinical development at the industry partners' sites. Particularly promising are novel trifunctional antibodies with anti-cancer activity invented by GSF researchers and further developed by GSF Spin-out TRION Pharma GmbH by Horst Lindhofer in collaboration with Fresenius Biotech. On July 17, Fresenius announced the positive outcome of a phase II/III study for the most advanced antibody candidate (Removab®) in patients with malignant ascites and announced that they intend to file a submission for drug approval with the EMEA, the European drug regulatory office, by the end of this year. Further clinical studies with Removab® and other trifunctional antibodies for the treatment of various cancers are in progress.

Spinning Innovation

GO-Bio award for potential new treatment of HIV infection



Researchers from the Heinrich Pette Institute for Experimental Virology and Immunology (HPI), Hamburg, and the Max Planck Institute for Molecular Cell Biology and Genetics (MPI-CBG), Dresden, raised an impressive media response when they published their breakthrough results from years of HIV research in the June 29, 2007 issue of *Science*. With the help of a genetically engineered enzyme they managed to excise integrated HIV proviral DNA from the genome of infected cells. "Our work may provide the technical foundation for a new approach to AIDS therapy," Prof. Joachim Hauber of the HPI speculates. "While available medicines aim to control outbursts of the disease, this would be the first treatment to rid an AIDS patient of the virus."

There remains a long way to go, but together with Ascenion, the team has already developed a strategy for developing the technology with a view to a potential clinical application. "So far, all results were obtained from cell culture experiments," Dr Hinrich Habeck, Ascenion's representative in Hamburg points out, "so it is far too early to be setting up a new company or involving an experienced partner from industry." Instead Ascenion suggested that the HPI team apply for a GO-Bio grant to fund further preclinical development and validation of the approach in patient samples over the next three years. "It was a very inspiring and effective collaboration with the researchers as well as with the HPI's administration," Dr Habeck says. Ascenion did an extensive IP due diligence, helped draft the grant proposal including a business plan and coached the research team for the GO-Bio pitch. On January 8, the patent was filed and just one week later the GO-Bio application was submitted.

The application was successful, and the project now has funding of about 2.4 million Euro over three years. Key objectives for this period include the further improvement of the enzyme and its delivery into human cells, as well as the establishment of appropri-

ate animal models to perform all relevant toxicology and virus removal experiments. Moreover, the researchers plan to set up a procedure for the isolation of haematopoietic stem cells from the blood of AIDS patients and subsequent treatment of these cells. "Ideally, we will have first results on virus removal in real patient samples available by end of the funding period," Prof. Hauber says. That would provide an ideal basis for a potential 3-year extension of the GO-Bio support. "If this is successful, we will work together with the HPI team in starting a new company to fully exploit the therapeutic and commercial potential of their innovative approach," Dr Habeck concludes.



From left to right: Dr Frank Buchholz (MPI), Dr Ilona Hauber, Prof Joachim Hauber (both HPI)

Turning Science into Business Opportunities

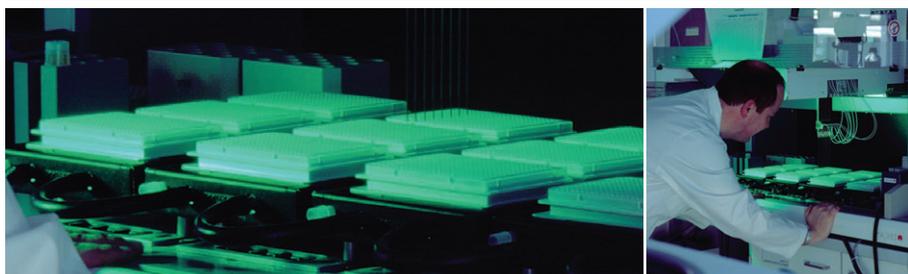
FMP to accelerate drug discovery – and generate income for public research

High throughput screening (HTS) – the automated search for new therapeutic agents among tens of thousands of chemical substances – has long been regarded as the domain of major pharmaceutical or biotechnology companies. Based on a new HTS procedure developed at the Leibniz Institute for Molecular Pharmacology (FMP), Ascenion and FMP researchers have now created a marketing concept to serve international industry as well as public institutions.

"Our new procedure integrates cell culture into automated screening for the first time," explains Dr von Kries, the project's chief scientist. So far, cell culture was done manually subsequent to HTS screening. The new approach employs an automated microscope to deliver fluorescent images that are also evaluated automatically. "We can therefore immediately follow how potential active agents interact with a cell, see if they are able to penetrate cellular membranes and assess potential toxic side effects." Market analysis carried out by Ascenion revealed that virtually no other

company world wide has such powerful technology and comparable in-house expertise. Moreover the demand for the service is high because the new procedure will obviously save considerable time and expense in drug discovery. Ascenion helped the FMP draft a business plan for the commercial exploitation of their HTS approach, based on which the TSB Technology Foundation Innovation Centre Berlin decided to provide about 1 million Euro to support a two year pilot phase for the validation of the approach. Upon successful completion, the procedure will be offered as a service to public research institutes and industry. Academic partners will be able to use it at virtually cost price, while small, medium and global companies will be charged progressively according to prevailing market conditions.

"Within two more years, the FMP should have reached break-even", Dr Christian Stein of Ascenion predicts. "Further proceeds will provide new opportunities for public research at the FMP and its partner institutions."



Fostering Networks

Ascenion has established a strong network within the scientific community, industry and government. "It is part of our day-to-day business to continuously develop these relations and help scientists make contact with industry representatives, be they investors, serial entrepreneurs, business developers, lawyers or experts from various disciplines and sectors," Esther Maria Lange from Ascenion points out. Over the recent months, members of the team have joined or co-organized a range of networking events. A selection of these are described below.

1st Biotech NetWorkshop at Ringberg Castle – a brief summary

"Take matters into your own hands!"

Three days of extensive information exchange with seasoned founders and founding specialists: this was the concept of the first Biotech NetWorkshop jointly organized by Ascenion and Max Planck Innovation and held near Tegernsee in February 2007. A comprehensive program of lectures and seminars, combined with the unique atmosphere of Ringberg Castle, contributed to a very successful and productive event for the invited managers and for scientists intending to found companies.

Quite a few researchers consider founding a company to commercialize their research results. However, they frequently encounter significant organizational, economic and administrative difficulties. Therefore, Ascenion and Max Planck Innovation established the Biotech NetWorkshop to enable potential founders to exchange ideas and to discuss problems and solutions with experienced entrepreneurs and specialists. "We have learned a lot," concluded a participant of the event at Ringberg Castle, "and we are now in a much better position to judge the problems and requirements related to founding a spin-out. It was great to get an introduction to these topics in an informal atmosphere."

A panel discussion, "Germany as an Industry and Science Location – Quo Vadis", marked the opening of the Biotech NetWorkshop. The panelists' insider views provided a perfect introduction to further intense discussions that ran late into the night. Panelists Dr Nikolaus Blum of the GSF – National Research Center for Environment and Health,

and Prof. Tränkle, Spokesman Section D, Leibniz Association, both experienced research managers, talked about the various problems of technology transfer. Two experienced entrepreneurs, Dr Karsten Henco, CEO of U3 Pharma, and Prof. Axel Ullrich of the Max Planck Institute for Biochemistry shared their views about financing start-ups. Both have co-founded several biotech companies in Germany and abroad. Dr Viola Bronsema, CEO/Managing Director of BIO Deutschland e.V. and Dr Klaus K. Wilgenbus, Corporate Senior Vice President Licensing at Boehringer Ingelheim GmbH, shared their expertise gained in an important industry association and in the global pharma industry.



Focused work in the audience

All participants agreed that the German medical and biotech research landscape was diversified and of high quality, yielding results of international importance. However, they gave poorer marks for financing and clinical research. "Germany only invests EUR 1 billion in medical research per annum," Dr Blum said. This level of investment puts Germany only in the mid-field by international comparison. The participants also agreed that it is difficult to develop innovative ideas – for example, due to the minor importance



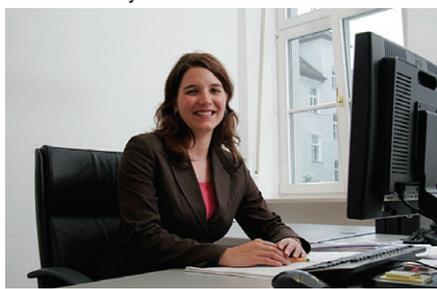
attached to clinical research in Germany. With a twinkle in their eyes, Prof. Axel Ullrich and Dr Karsten Henco looked back on the "good old days" when founders were rewarded for their willingness to take risks. Ulrich added that nowadays, venture capital companies are barely prepared to take risks, spending months and months on the due diligence of a project. Following a successful incorporation, the shares of the original founders are often diluted to the maximum in consecutive funding rounds, they said. Dr Viola Bronsema emphasized the huge funding gap for start-ups in Germany – despite the initiatives of the Federal government such as the High-Tech Foundation Fund.

"In Europe, Germany still only occupies place 20," Dr Bronsema said. The audience – mostly entrepreneurs and prospective founders – subsequently peppered the panel with practical questions. The panellists provided a lot of valuable advice but agreed that while positive examples were necessary to encourage novice founders, it is impossible to simply copy these as if they were blueprints. Dr Wilgenbus advised biotech companies to think globally from the very inception of an enterprise: "Your optimal partner is not necessarily next door. You should seek to identify the companies that need what you have to offer." Listeners agreed that sharing experiences between founders and seasoned managers was invaluable in identifying problems, learning about research strategies and gaining new motivation to continue.

The panel discussion was the starting point of a diversified program dealing with financing strategies as well as management topics. Anselm Bilgri, co-founder and partner of the Anselm Bilgri Center for Business Culture, elucidated the Benedictine rules, deducing from them some principles for successful business. In contrast, Prof. Gunter Dueck,

Chief Technologist, IBM Global Technology Services Germany, challenged some popular (mis)conceptions about business culture and the promotion of innovation and leadership with considerable humour and self-mockery in his „dinner speech“. In addition, he provided some valuable insights into the organization of a global technology leader.

The positive response of the participants to all parts of the workshop showed that the concept of the event was spot on and that there is a demand for further meetings. Ascenion and Max Planck Innovation are therefore pleased to invite all entrepreneurs and scientists planning to found a company to the second Biotech NetWorkshop at Ringberg Castle above the Tegernsee from 13th–15th February, 2008. The invitation is primarily intended for founders and managers of spinouts in the life-science sector associated with the Helmholtz- or Leibniz Association or with the Max Planck Society. Other interested individuals may also make a reservation in the event that additional places become available. Invitations and a preliminary program are expected to be sent out in autumn. Please mark your diaries!



Please contact Dr Isabel von Korff at Ascenion: korff@ascenion.de

AUTM meeting in San Francisco: Ascenion presents two innovation showcases

The Annual Meeting of the Association of University Technology Managers (AUTM) in the US provides a premier platform for education and networking with technology transfer experts from around the world.

“It’s great to meet US colleagues in person at last”, Isabel von Korff, representative of Ascenion, says.

“Up until now we have only had telephone contact with many of our US colleagues, for instance to discuss IP and commercialization strategies for inventions that were jointly made by a US institute and one of our partners.” Moreover, this year’s meeting offered special business-oriented sessions to put technology transfer managers in direct

contact with business developers. In a session called “Innovation Showcases” a total of 20 selected partnering opportunities were presented to international industry representatives. Just three projects from Europe were included in the session and two of those were presented by Ascenion



Dr Sabina Heim, Technology Manager, Ascenion

on behalf of its partners the DKFZ (German Cancer Research Center) and the HKI (Leibniz Institute for Natural Product Research and Infection Research). The first project concerned compounds for the treatment of neuroblastoma, a cancer of the nervous system, which is particularly common in children. The second introduced a range of small molecules with broad antibacterial activity, even against multi-drug resistant pathogens such as MRSA that cause serious infections for which there is currently no effective treatment.

Forum Science & Innovation in Berlin

On the conference organized by the Friedrich Ebert Foundation, policy makers, representatives of research organizations, entrepreneurs and technology transfer managers met in Berlin on 17 November 2006 to discuss how to improve the interfaces between science, business and policy in order to better exploit Germany’s excellent scientific output. In a panel session the participants Edelgard Bulmahn, Prof. Arndt Bode, Dr Christian Stein and Günther W.O. Mull agreed that a combi-

nation of different approaches to technology transfer would be ideal to meet the demands of various research organizations in Germany. Prof. Arndt Bode, Vice-President of the Technical University of Munich (TUM) introduced the regional approach taken by TUM-Tech GmbH, a technology transfer agency serving TUM as well as other Bavarian universities across all scientific disciplines, while Dr Christian Stein, CEO of Ascenion GmbH, presented the company’s sector-specific approach to technology transfer.

Prof. Bode pointed out, that TUM-Tech, among others, is ideally positioned to help integrate entrepreneurial thinking into the education of scientists. Ascenion, however, with its dedicated, sector-specific expertise and network, is a perfect partner for life-science institutions or life-science departments of diversified research organisations. “Both approaches can work, sometimes even complementarily,” commented Dr Christian Stein. “But, regardless of their approach, tech-transfer organisations should strive for critical mass. Only a broad client base and a substantial IP portfolio enable us to work efficiently and gain adequate visibility in industry.” It is also essential, Edelgard Bulmahn, Chairwomen, Committee on Economics and Technology, of Deutscher Bundestag pointed out, that the tech-transfer organizations become an indispensable link between research institutions and industry to guarantee a successful co-operation”.



From left to right: Prof. Arndt Bode, Edelgard Bulmahn, Ursula Weidenfeld (Moderator/Tagesspiegel Berlin), Dr Christian Stein

News in Brief

Ascenion expands team further

Ascenion welcomes three new team members to the Munich office:

- Medine Kurucam, Office Manager, previously with Price Waterhouse Coopers
- Petra Jakob, Accountant and Controller, previously accountant with Constantin Film AG
- Susanne El-Gogo, Manager General Affairs, PhD in biology

These three new colleagues complement Ascenion's interdisciplinary team of scientists, lawyers, management consultants and analysts.

Sartorius to commercialize new system for perfusion culture of mammalian cells

The idea of using a hydrocyclone for mammalian cell retention in perfusion cultures originates from the Helmholtz Centre for Infection Research (HZI). Through centrifugal forces, mammalian cells are retained within the system while metabolites can be continuously harvested from the overflow. As was demonstrated by HZI researchers, the system is very robust, efficient and can be easily scaled up to sizes typically required for commercial use. These features make it highly attractive to industry, for instance for the production of therapeutic or diagnostic proteins. Ascenion approached Sartorius Biotech GmbH as a potential partner and negotiated a licence agreement on behalf of the HZI. Sartorius will now commercialize the system for use with traditional as well as disposable bioreactors.

First alliance closed for the Hanover Medical School

With the help of Ascenion, a co-operation between the Hanover Medical School (MHH) and an international pharmaceutical company has been initiated. The partners will

evaluate growth differentiation factor GDF15 as a potential diagnostic marker in cardiovascular disease. GDF15 expression can be significantly up-regulated during heart injury and the idea is that a new test for GDF15 could help physicians and patients develop an appropriate therapeutic strategy following a heart attack.

GSF joins forces with UGT in environmental biotechnology



The GSF – National Research Center for Environment and Health operates almost 48 lysimeters: stainless steel cylinders 2 m high that are filled with soil and inserted into the ground in order to study the behaviour and transport of substances in soil. While GSF researchers use them to explore the effects of global climate change and pollutants on soil and ground water, there are many more potential applications of industrial relevance. Mediated by Ascenion, GSF therefore closed an alliance with the environmental technology company Umwelt-Geräte-Technik GmbH (UGT). The partners have jointly developed a new device that allows large-volume cores of earth to be removed from lysimeters without destroying the existing stratification and structure of the soil. Based on Ascenion's recommendation the device was patented on behalf of GSF and UGT and a licence agreement was structured allowing UGT to market the system to commercial users worldwide. The device has already been used successfully by one of UGT's clients for the analysis of soil contamination.

Supporting biopharmaceutical research and development

Over the last few months, Ascenion has closed a series of material transfer agreements on behalf of the Hanover Medical School (MHH), the Bernhard Nocht Institute for Tropical Medicine (BNI) and the Max-Delbrück-Center for Molecular Medicine (MDC). Based on these agreements, global pharmaceutical players as well as smaller national companies have obtained the right to use various antibodies or animal models as research tools, mainly to explore biochemical pathways that are relevant to major human diseases such as hypertension or inflammation. In addition, the Leibniz Institute for Age Research (Fritz Lipmann Institute) agreed with Jena Bioscience GmbH to provide the company upon request and in return for a fee with the human Ab (1-40) peptide as well as polyclonal antibodies against human proteins S100 and PML to be distributed for research use.

Editorial

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