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START-UP BUSINESS SERVICES VS. ACQUISITION OF GLOBAL HIGH-TECH PLAYERS: MISSION IMPOSSIBLE OR SOLVABLE CHALLENGE FOR A SCIENCE AND TECHNOLOGY PARK MANAGEMENT TEAM?

PARALLEL SESSION 2

Choosing your target companies: a strategic decision

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Executive Summary

Managing of a Science and Technology Park (STP) is a complex challenge. The diversity of tasks requires a highly qualified management team with a range of different skills and considerable experience. The STP's management strives to attract new customers in order to foster regional economic growth in collaboration with its partners from science and business. This paper serves to illustrate the interaction of the various stakeholders in Germany´s largest Science and Technology Park in Berlin Adlershof and outlines its strengths and weaknesses. Building on the Adlershof experience, this article sketches out four basic hypotheses that other STP management companies, confronted with similar challenges, might find instructive.

Introduction

Berlin Adlershof - the City of Science, Technology, and Media - is an outstanding development project located in the heart of Europe. Sixteen renowned research institutes, more than 1,000 companies with 15,000 employees, and 8,500 students jointly create an inspiring atmosphere in which innovative ideas flourish and are transferred into new services and products.

The era of advanced technology in Adlershof began as early as 1909 when the area became home to the first airfield for motorized aircrafts in Germany. The German Testing Institute for Aeronautics was founded in 1912. After World War II, the Academy of Sciences of the GDR set up its natural science institutes in Adlershof. After German unification, those institutes were transformed into 10 newly founded institutes of the large German non-university research associations. This research potential was further enhanced when the renowned Humboldt-University of Berlin relocated its six natural science institutes to Adlershof at the turn of the millennium. Lastly, the impressive range of technology-oriented companies founded and developed in Adlershof contributed significantly to its successful development as a region for new technologies, industry, and economic growth. The main areas of research, development, production, and business services in Adlershof are optics and microsystems, materials science, IT and media, biotechnology and environmental technology, and renewable energies. Our technology centers provide science and business active in those clusters with a unique high-tech infrastructure.

With regard to its R&D basis, technology focus, economic development as well as real estate opportunities, Adlershof is capable of covering the whole life cycle of high-tech companies. Providing efficient support during all phases of business development is a highly ambitious challenge for the management company of a Science and Technology Park (STP). The tasks range from simple rental services or business plan consulting to the supervision of complex high-tech or real estate projects (Figure 1). This includes the capability of communicating with inexperienced entrepreneurs as well as high potential executives of global enterprises.

How can all these challenges be addressed by a single management team considering their complexity? Which talents, skills, and qualifications are necessary to meet the task? How can high service quality be ensured? Is it possible to manage the development of technology fields and real estate projects simultaneously - despite the differing requirements? How does one attract the right companies that fit the profile of the technology park and have the potential to help shape its future?

Adlershof has much experience and knowledge in managing the complex development processes of an STP. Over a period of 20 years, many businesses with very different strategic goals have been founded

and established here. The lessons learned in the process have helped us to find answers to the questions above which are reflected in the following hypotheses.

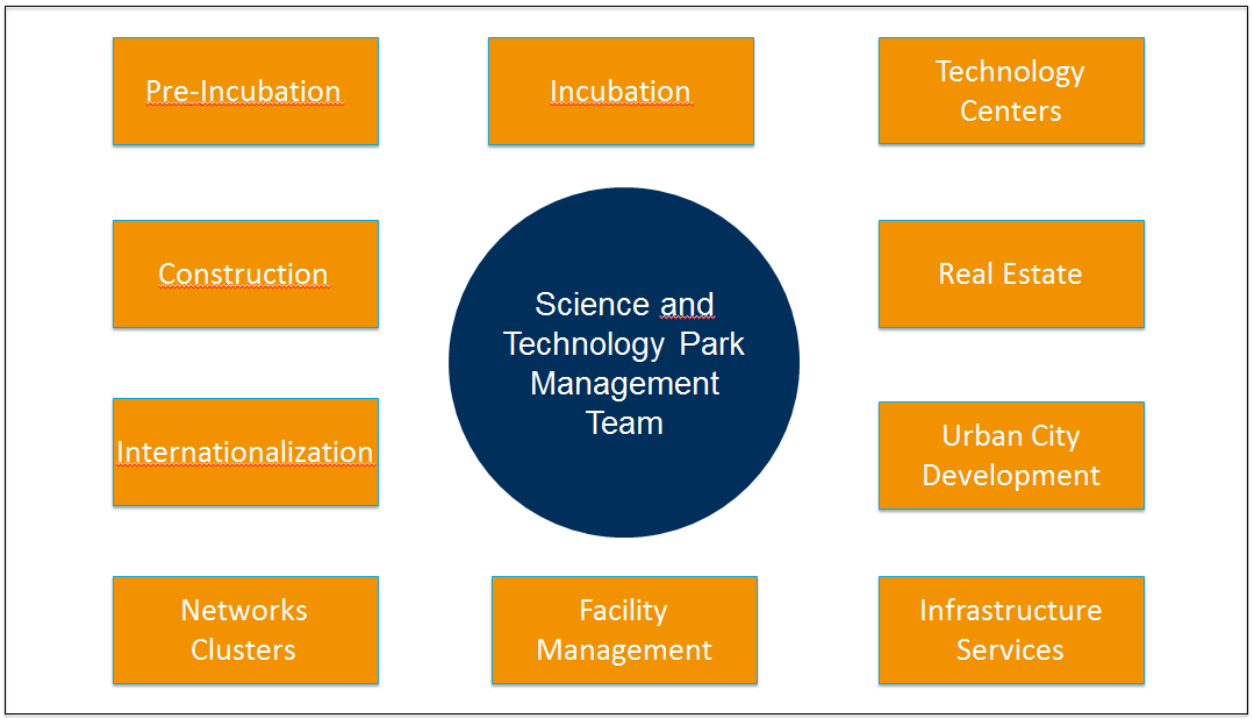

Figure 1: The diversity of tasks for the technology park management

Hypothesis 1: An STP's strategic profile should be based on science and technology rather than the requirements of urban development or policy

The formation of most successful technology parks can be traced back to a certain kind of "nucleus". If one or more university or non-university research institutions or a large company with a clear focus on technology exists nearby, there is a strong incentive for creating start-up and technology centers in their immediate vicinity. Their profile is aligned with the key research and development areas of this nucleus. Moreover, the nucleus is the pivot point for technology transfer, collaborations, spin-offs and new companies. Making full use of existing resources is essential: knowledge, skilled staff, and infrastructure. The technology centers and technology parks have to be linked into the existing value chains of the nucleus in order to define and develop their capabilities. The equipment of these centers is determined by the technology park's profile and the customer's needs.

The implementation of a technology park without a nucleus, however, will only have limited success. Strong political commitment alone or an intention to advance regional urban development will not suffice to bring the science and business communities together in one location. Though it is fair to say that it is an option to make use of a strong political commitment to attract a large institute or company to a place with potential for development and to create the required nucleus artificially.

The development of Adlershof into an internationally acclaimed science and technology park began after German reunification in 1990. However, the nucleus of this development had to be created first because the previous institutions such as the Academy of the Sciences of the GDR had been closed down. Following an evaluation by the German Council of Science and Humanities of the Federal Republic of Germany, the most capable scientists and research groups of the Academy were taken over by the newly founded institutes of the German Research Associations which had been set up in Adlershof. This

development determined the STP's scientific and technological profile and the requirements to infrastructure and resources related to it. Building on these initial developments, further institutions, particularly technology companies, settled in Adlershof and profited from local networks and collaboration. The STP management company provided the necessary infrastructure including start-up and technology centers and properties that allow for growth and project development. This potential was eventually complemented by the element of teaching and training when the natural science institutes of Humboldt-University of Berlin were relocated to Adlershof. (Figure 2) This also created another important pillar for the founding of new, technology-oriented companies.

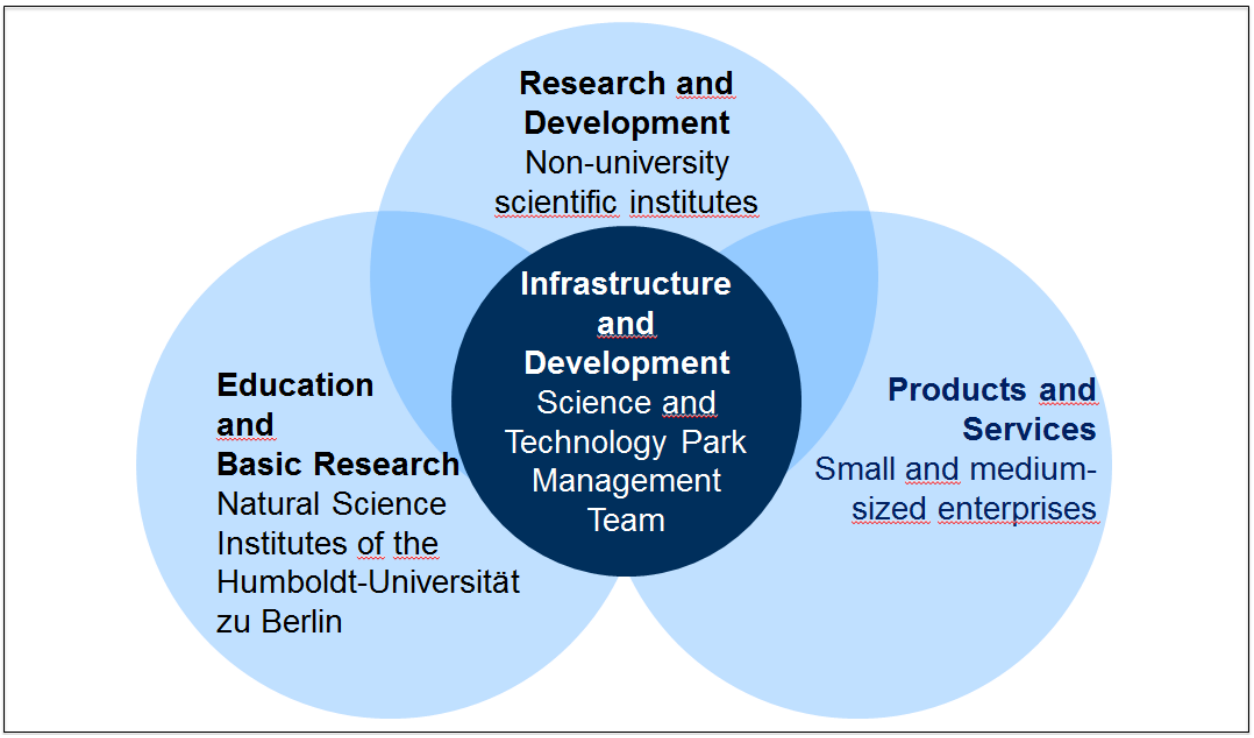

Figure 2: The design of Science and Technology Park Adlershof

Hypothesis 2: The technological profile of a STP has to be updated consistently

Technology centers and technology parks usually develop a more or less distinctive focus on one industry or sector. Either the nucleus has already set strong priorities, which are reinforced, or, through networking and the closing of value chains, certain fields become formative for the park in the course of time. It is important that these key areas are identified by the park's management and supported by activities such as networking opportunities, cooperation events, presentations, exhibitions, or network organizations and transfer centers. It is a great advantage if the managers of the technology centers have a subject-specific background and are able to communicate in the "insider language" and to influence the site's scientific development.

The benefit of focusing on key technology fields is twofold: first, it facilitates "internal networking" between the partners on the site and fosters their development. Secondly, it helps to bring together a critical mass of key players which increases the outward visibility and attractiveness of the technology park. This, on the other hand, enables management to attract new partners and companies to the park.

However, the focus on key areas has to allow for enough room to be able to follow new technology trends that arise from developments in science and technology or on the global market. Identifying new topics, bringing stakeholders together, initiating activities, and adjusting the local infrastructure are therefore

essential tasks of the park's management. By doing this, it is possible to balance the profile of an STP between continuity and innovation and to ensure a permanent brand presence on the international market.

A question that is often subject to controversial debate is the number of key areas a technology park should focus on. Parks designed as a monoculture often develop considerable strength and international visibility. However, often they are very prone to economic slumps when their key industry experiences a crisis. Moreover, it is difficult to establish new fields next to the existing "bolides". An exceedingly large number of key technologies increase the risk of an arbitrary and interchangeable profile which harms the outward perception of the park. Of course, every region has to find its own mix of key areas depending on individual framework conditions (policy, science and business, other centers and parks, strategies for regional development).

The establishment of its nucleus led Adlershof to focus on the fields optics, environmental technology, IT and Media as well as microsystems and materials science. In the course of establishing and developing the technology centers, it turned out that biotechnology/life sciences companies started to make great use of the newly developed infrastructure. These fields had meanwhile acquired a much greater visibility than environmental technologies.

Staying in the environmental area, the field of renewable energies has experienced strong growth in the last ten years. This can be accredited to the political framework in Germany, on the one hand, which subsidized economic activity in this area considerably. On the other hand, Adlershof initiated new research projects, particularly in the field of photovoltaics, which created university-industry cooperation and new companies. The park's management reacted to these developments by setting up the "Center for Photovoltaics and Renewable Energies" and provided a high-quality infrastructure including space for laboratories, offices, workshops and manufacturing for small and medium-sized companies of that industry.

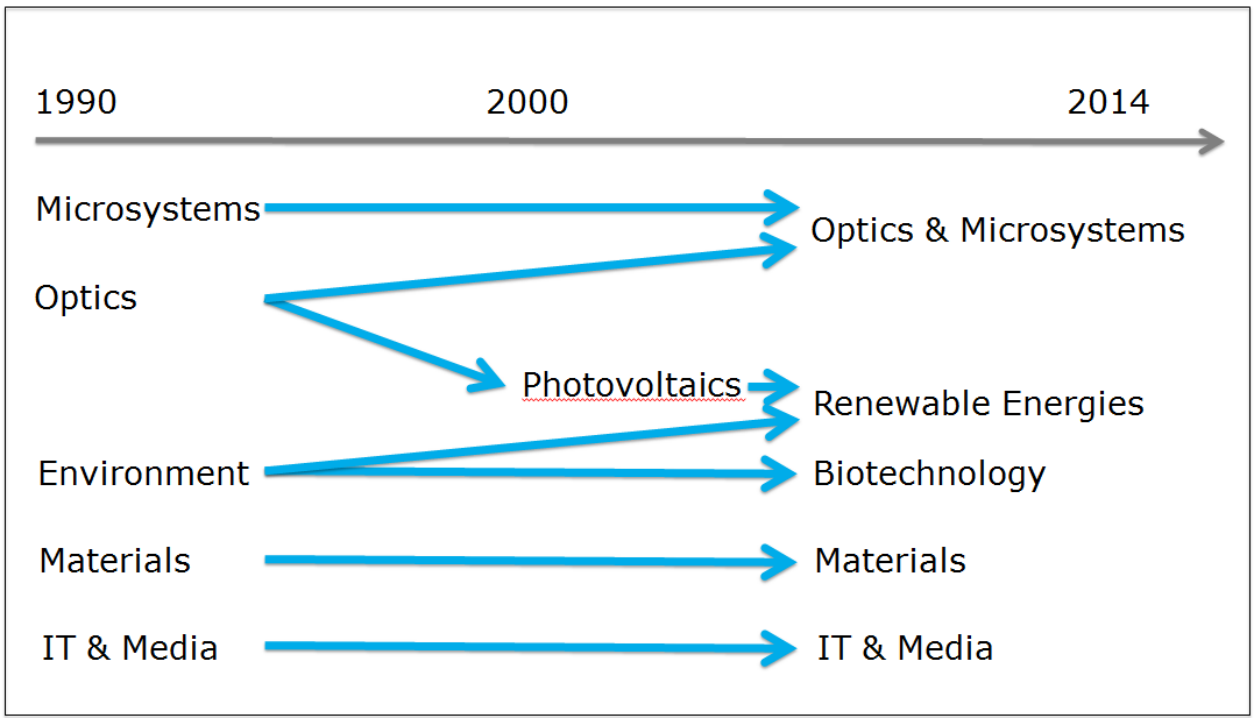

Figure 3: Development of key fields of technology in Adlershof

The fields of optics and microsystems technology have interpenetrated more and more in recent years. The regional stakeholders reacted by increasing networking through joint events and projects. Correspondingly, the Science and Technology Park Adlershof has brought together the two technology centers for optics and microsystems technology more closely with regard to content and administration. The site's profile then was significantly enhanced by way of reshaping of a core competence cluster.

The activities described above enabled Adlershof to secure a permanent and growing international presence in key future fields of technology (Figure 3).

Hypothesis 3: Start-Ups vs. Global Players: The proper mix of companies generates innovation, growth and jobs

Technology centers and technology parks have the task of producing a fruitful environment for founders in order to create new companies, jobs and economic growth. However, this aim can also be reached - much faster for the most part - by attracting large, international companies. There is also high potential for synergies between both approaches because small and medium-sized companies, on the one hand, and large companies, on the other hand, can mutually enrich each other. Small companies benefit from acting as subcontractors to the large companies as well as providing them with research and development, while the latter seek the flexibility and innovative capacity of small technology-oriented firms.

It is therefore an advantage if the park's management can appeal to both types of customers. This requires an infrastructure which enables new companies to start up and grow. Furthermore, real estate is necessary to allow for expanding headquarters and production facilities. Moreover, the management staff has to be capable of appealing to and supporting both clientele. The basic principle, explained in our first hypothesis, by which one must be able to speak the "insider language", also applies here.

The Science and Technology Park Adlershof has been successful in meeting this challenge. It is capable of reflecting and supporting the entire life cycle of a company (Figure 4).

The Humboldt-University of Berlin runs a so-called "spin-off-zone" in Adlershof which provides company founders from universities with the possibility of using a workplace for a period of one year in order to develop their ideas together with experienced start-up advisors and to assess their feasibility. The national and international start-up centers provide an infrastructure that supports start-ups in finding suitable premises. They receive additional start-up service support by the management team such as business plan support, office services, and building new contacts.

During their growth phase, companies can rent larger, more specialized spaces in the technology centers of Adlershof which offer laboratories well-equipped with operating media that reduce the companies' investment costs and allows for a swift transition between development, pilot production and manufacturing. At this point, the companies are also assisted by experienced center managers who provide support particularly by adjusting the technical infrastructure to the needs of the companies, building co-operations and networks, and advancing internationalization.

Lastly, Adlershof has large expansion areas at its disposal which are available for the implementation of real estate projects planned by the companies. In recent years, more and more technology companies have left the centers in order to move into their own headquarters. By making these investments after an initial phase of public funding by the Technology Park, the companies contribute significantly to a development which provides a foundation of private investment for Adlershof. This trend is advanced by numerous project developments of private real estate investors who provide for further areas for rent. The transition of companies from the technology centers in this direction is increasingly successful. Moreover, it makes the site more attractive to large, international companies. Because of this, the Technology Park is continuously evolving into a system which combines temporary support for companies in the start-up and initial phase of growth with a well-directed transfer into a real estate market based

on free competition.

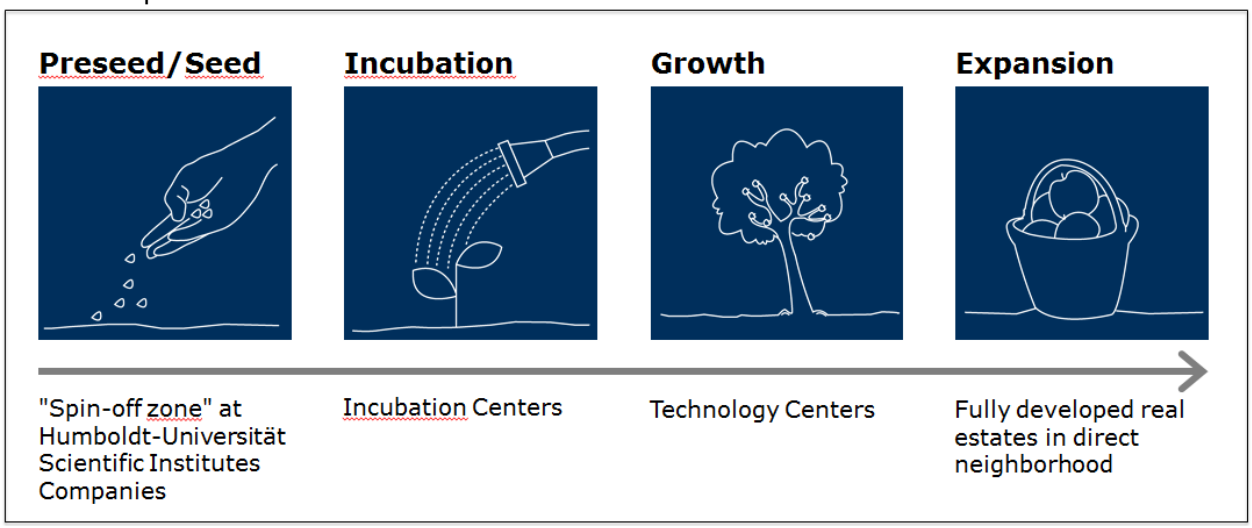

Figure 4: The Adlershof "Life Cycle Model"

Hypothesis 4: The STP management team has to be organized in specialized units according to the STP's strategy

In accordance to our first hypotheses, a Science and Technology Park's profile is the decisive factor affecting its design and development. A crucial element of STP management is the range of functions that the technology center managers are responsible for. Many essential tasks run together here: marketing and sales of the park, initial customer contact, rent and sale, adjusting and arranging the infrastructure including real estate, initiating cooperation and networks, as well as developing technology fields. These standard tasks make a high level of professional expertise in technology and business management necessary on the part of the managers. They have to cover the whole range from supporting young start-up companies to appealing to large, international companies. When supporting start-ups in specialized centers, it is often an advantage to use separate, specifically qualified teams who have start-up experience and considerable expertise with regard to writing business plans, to financing and accessing venture capital.

This organizational aspect of a technology park's profile entails that cross-sectional tasks such as construction and facility management are taken over by auxiliary service units. The competencies required for these tasks can be provided by professionals. However, direct coordination with the managers of the technology centers is crucial to be able to react to customer needs in a fast and well-directed way.

The aspect of urban development is of particular significance to larger technology parks. This aspect includes tasks such as infrastructure and neighborhood development, their functional and architectural design, communication and coordination of the technology park's expansion with regional and political decision-makers. Again, as we pointed out in the first hypotheses, "form" follows "function". This particular business unit requires professionals with excellent communication skills and good connections to decision-makers on a political level in order to further the technology park's strategy in the urban context.

Since 1991, WISTA-MANAGEMENT GMBH has been the operating company and development agency of the Science and Technology Park Adlershof. Its tasks are to establish, rent out and operate modern technology centers, makes properties available for sale, support start-ups, advise companies, promote networking between science and business, encourage national and international cooperation, and to handle PR for the entire development area.

The company is a subsidiary company of the State of Berlin. Since the year 2000, after some initial funding, WISTA-MMANAGEMENT GMBH has been independent and is financed through income from rent, land transactions and - to a lesser extent - projects. The Supervisory Board consists of representatives of the State of Berlin as well as executives of external companies and scientific institutes. The Advisory Board of Adlershof consists of representatives from Adlershof companies, from the Humboldt-University of Berlin, from the non-university research institutions, and the municipality. It provides input for the further development of the site.

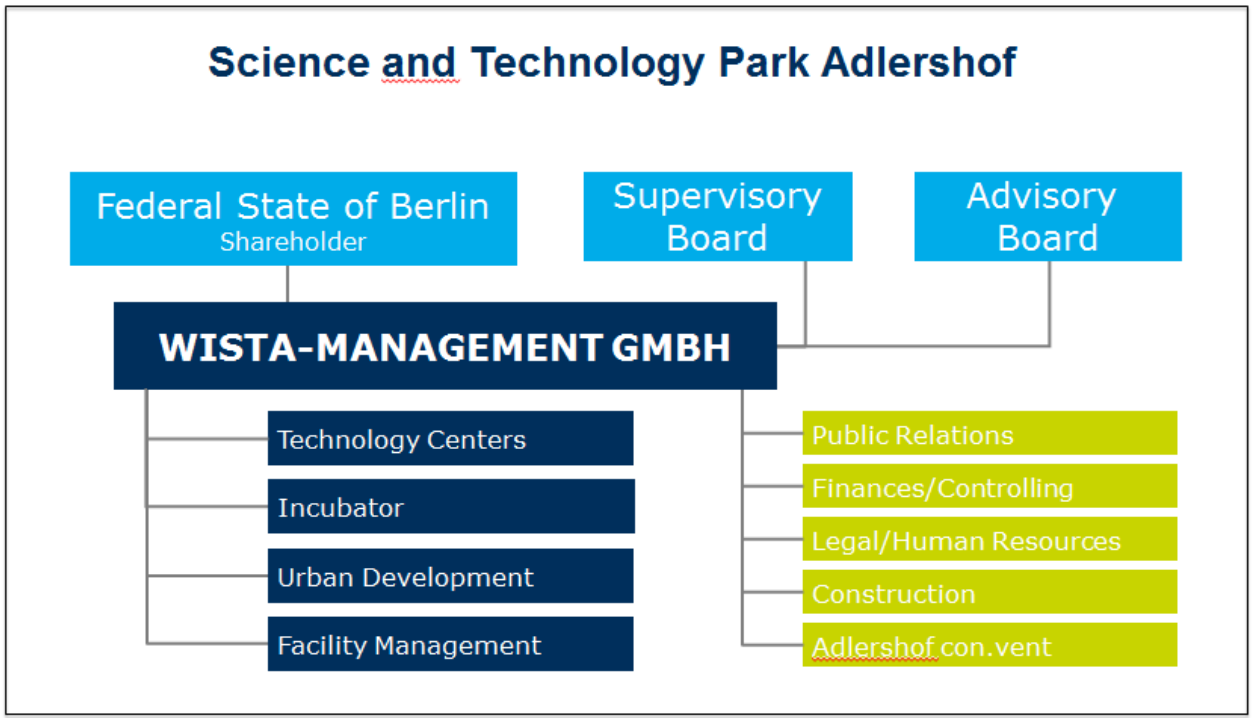

Figure 5: Organization chart Adlershof

Specialized business units include the company functions such as “Technology Centers”, “Start-up Support”, “Urban Development” and “Facility Management”. They are supplemented by service units including “Communication / Public Relations”, “Planning / Construction / Infrastructure”, “Controlling / Finances” as well as “Human Resources / Legal Department”. The event management team “Adlershof con.vent” hosts a wide variety of events for site partners and external customers in the innovative environment of the technology park which serves to enhance sales and marketing (Figure 5).