30th IASP World Conference on Science and Technology Parks, 2013

Managing STPs and areas of innovation

WORKSHOP 4 - Unusual experiences in clustering science and technology initiatives

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EXECUTIVE SUMMARY

In line with the overall theme of science parks shaping new cities, this paper and presentation will particularly address the third theme; Managing STPs and areas of innovation. Swedish STPs have taken an embracive approach to science parks; (re-)organization, branding and the geographical place. With collective efforts many Swedish STPs tackle the challenges with dismantling the physical and mental barriers between the STPs and the city region, with the aim to develop a better integration and to spur innovation whilst optimizing the attraction of certain geographical areas as well as of Sweden as a country. This paper will account for the tangible manners of how this task was addressed by SISP, the Swedish member association of Swedish science parks and incubators, along with substantial support from participating STPs.

FULL PAPER

The new role of STPs

STPs along with incubators, clusters and other areas of innovation are increasingly becoming more urbanized and integrated with cities and regional districts. Hence STPs need to fully understand the changes taking place and how they need to build capacities to secure an influential and sustainable role within the future regional innovation system.

In order to strive at such position, STPs firstly need to recognize and address the changed conditions they are operating within, but also how that have affected and shaped a new potential role for the STPs, as well as bringing new stakeholders with new needs to address. It has become evident that with the shift in clients as well as in offerings the role of STPs has extended. The new role of STPs has in effect become more and more of a unifying platform for various growth-oriented incentives, development projects, programs, processes (e.g. incubation, innovation) and methods within the region – the coordinating node in the regional innovation system.

For STPs aspiring on the role as nodes in an effective regional innovation system will benefit from focusing on the following:

1. To have a well-integrated, extended network with actors in other sectors and/or places in the value chain, as well as other authorities and organizations countered for in a quadruple helix approach. A network that may also stretch over regional and national boundaries when so needed, for creating favorable and attractive conditions for business development and innovation processes. Every STP needs to consider when it is beneficial to open up and work with resources and parties outside their own organization and possess the ability and necessary network to do so.

In today´s globalized world, the ability to create critical mass and tap into global value chains becomes crucial, especially for STPs located outside major conurbations or for multi-site STPs with embranchments into smaller communities lacking a more organic concentration of strong industry and research fields. However, even STPs situated and operating within larger city areas need to consider the ability to open up and tap into the resources and knowledge of others, if wanting to stay relevant and sustainable in a volatile market.

2. To understand the complex mechanisms of place management and place branding to enable a proactive handling of the associated challenges with these new city strategies.

In our globalized world countries, cities and regions all have to compete with others for people, resources and business, the cornerstones of economic growth. The increasing competition requires new approaches of identification, image communication and coordination of relevant variables that have an impact on the regional image, such as social infrastructures and a vast diversity of stakeholders e.g. organizations, companies and authorities within the region.

As a trustworthy and neutral arena, strategically positioned in-between the industry, academia, public sector and community, and therefore the optimal meeting place for ideas, innovations, entrepreneurs, talent, investors, research and knowledge intensive companies, the STPs gain new relevance in the positioning and brand building of the region. When adding their knowledge about business and innovation development and strong track record as “growth-engines” it becomes

evident that STPs possess great abilities to be explored as regional, and national, platforms for creating regional attraction, economic growth and job opportunities.

However, taking on the task of being the regional platform for innovation-driven growth is easier said than done. As of now, several Swedish STPs are recognizing the importance to fully identify and embrace the new role and to build the necessary capacities in terms of organization, market complementary offerings and networks to secure an influential and sustainable platform within the future regional innovation system. In some parts of Sweden the STPs have already been granted the official mandate as the coordinating platform of the regional innovation system, hence comparisons between regions can be made. It has then become evident that regions where the STP has obtained the official mandate as the central node of the regional innovation system have a more efficient collaboration, coordination and communication between academia, industry, public sector and the surrounding community, which potentially leads to more attractive and prosperous regions.

In order to meet these new demands of integration and enabling a continued strong position for the Swedish STPs in their respective regional districts as well as on a national level, the Innovation Excellence project was launched in January 2012.

Innovation Excellence project
The project is managed by SISP; the national member-based association of Swedish science parks and business incubators, and is partly state-funded[1]. It aims at developing and spreading knowledge, experience and structural capital in forms of processes, methods and tools for Swedish STPs to become influential and integrated regional nodes in an effective Swedish innovation system. The project uses a systematic approach influenced by EFQM Excellence Model[2], aiming to find a homogeneous way to describe the processes and practices of STPs and thus make it possible to develop a peer review process. The methods chosen constitutes of peer reviews along with various workshops and systematic exchange of experience and "best practices" as well as creating role models and mapping tangible examples of how science parks actively can become more integrated into the local innovation system and systematically contribute to the city/region´s attraction as well as economic and social growth - in other words becoming a significant part of the region´s narrative.

The project runs from 2012 to 2014 and consists of two parallel parts:

1. *Organizational development and management of 'STPs 3.0'*
The scope: Organizing and developing "the new and 'excellent' science park" and its extended market complementary offerings. Adjust and implement the management framework of EFQM Excellence Model. Create a common toolbox for quality assurance, management system, key performance indicators (KPI) and self assessment.

2. *Science park as central and coordinating nodes within the innovation support system*
The scope: regional system development - explore, develop and evaluate the role of STPs as strategic operative platforms within the regional innovation system.

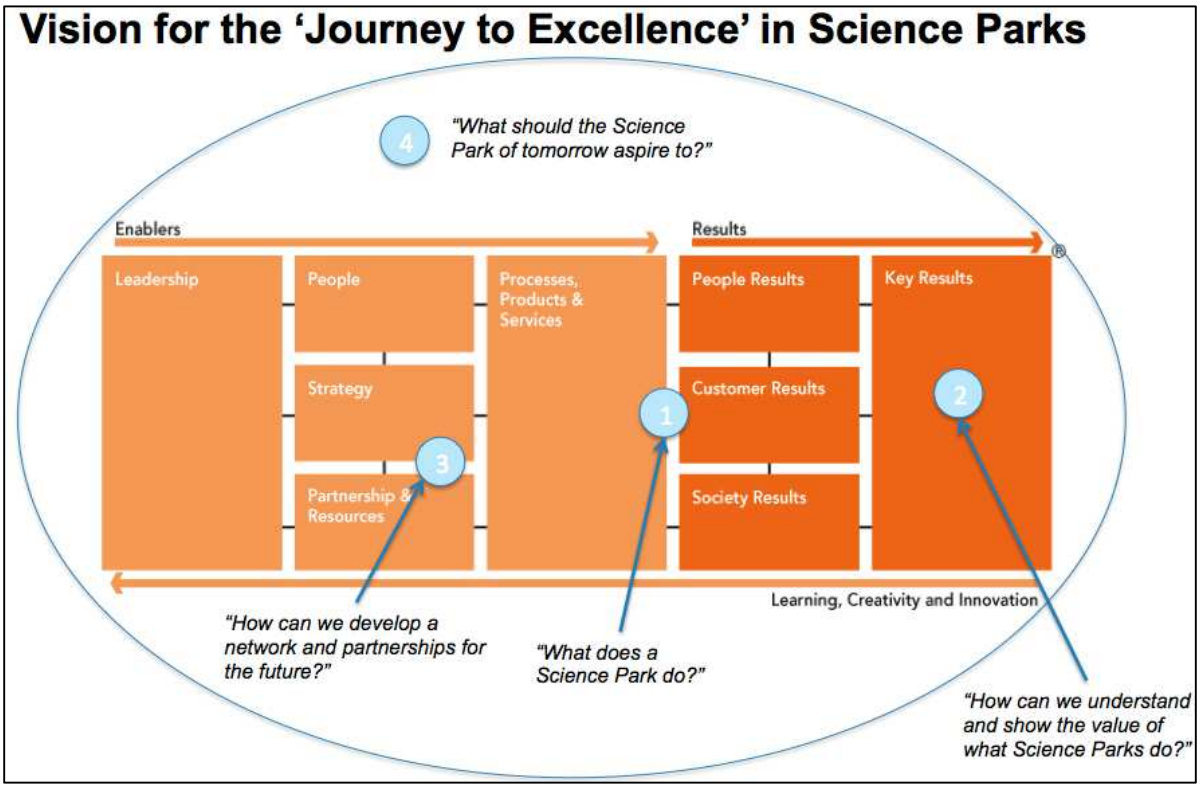
The EFQM framework as starting point
The project draws upon the systematic non-prescriptive management approach of EFQM Excellence Model but adjusted to industry specific conditions and challenges as well as the general maturity phase of the Swedish STPs as organizations. The use of EFQM framework is widely spread in public as well as private sectors throughout Europe.

The model is designed to help organizations regardless of size, sector, maturity or structure becoming more competitive through the use of an appropriate management system and is viewed as a practical tool for organizations to measure where they are at and where they want to go and help the organizations detect and understand the gap in-between as well as finding stimulating solutions.

[1] Partly funded by VINNOVA, the Swedish Governmental Agency for Innovation Systems. Read more at http://www.vinnova.se/en/
[2] Read more at http://www.efqm.org/en/?TabId=132

Applying the EFQM framework on an entire industry provides a common language and toolbox for self-assessment and benchmarking, enabling the exchange of experience, information and ideas, both within and between the organizations. It also provides the organization with a basic structure for management system, facilitating the integration of activities and by so, improving the organizational efficiency.

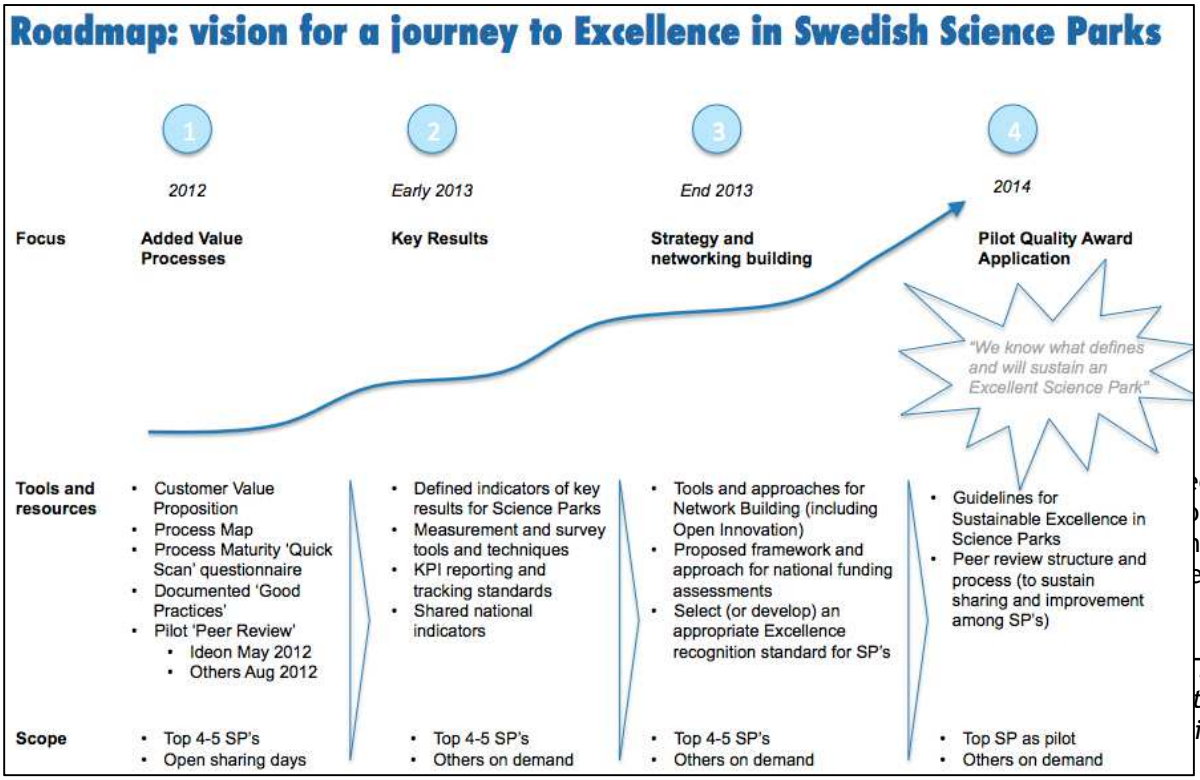
The basics of EFQM Excellence Model can be explained by following diagram.



The model can be explained as a nine box "cause and effect" diagram, consisting of five "enablers" and four "results". Easily put the enablers cover what an organization does while the result boxes show what an organization achieves. The logic behind the model is that to improve what the organization achieves, the results, it must improve what it does – cause and effect.

Within the concurrent project the model is tackled in four overlapping steps, addressing 1. the scope and extended offerings of a modern STP; 2. quality assurance and assessment through the use of a new set of key performance indicators corresponding to the new scope, organization and offerings; 3. exploring, testing and evaluating new forms of networks and partnerships appropriate for meeting the current and future conditions and challenges; 4. developing and establish definitions and guidelines for sustainable excellence in Swedish STPs as well as settling a systematic shared peer-to-peer process for reaching and maintaining excellency through constant improvement and sharing of knowledge and experience.

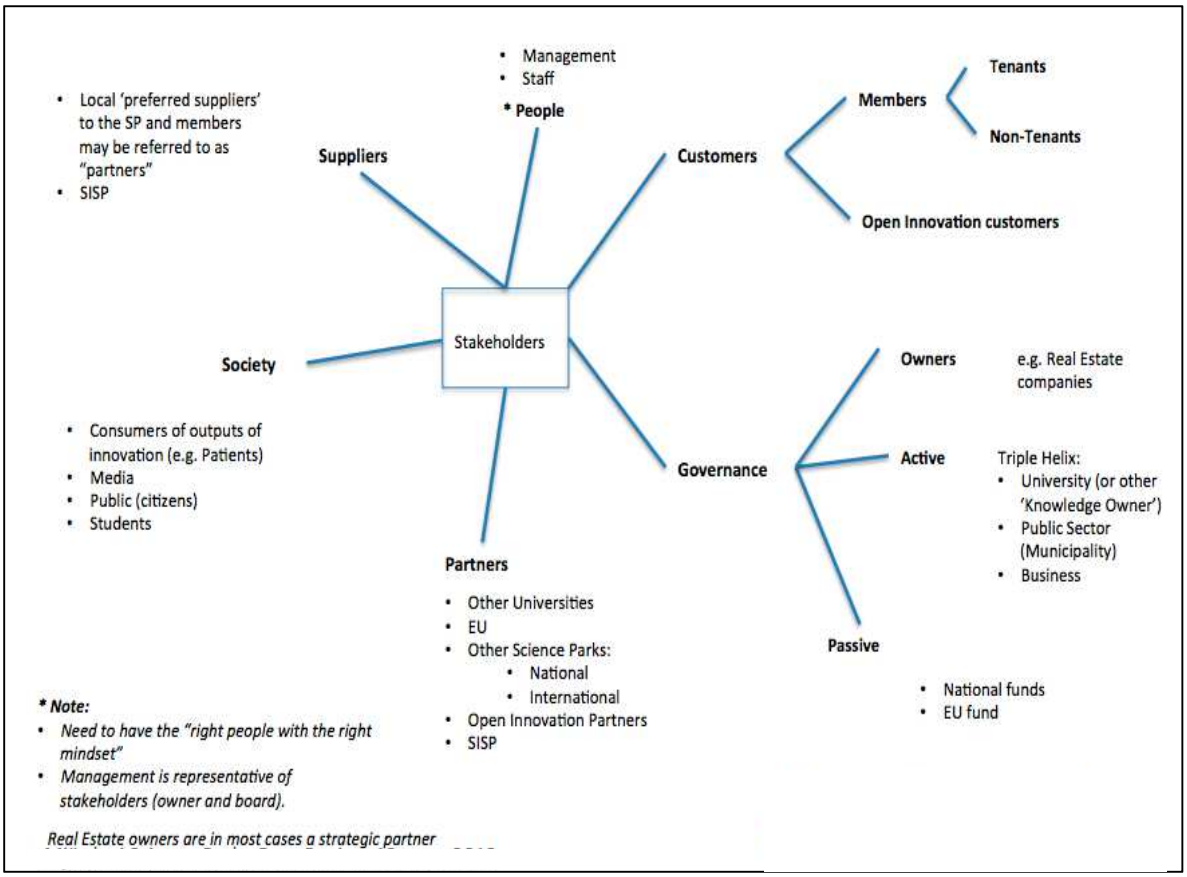
The “roadmap to excellency” in Swedish STPs is schematically illustrated below:



The STPs of Sweden, as in many countries, have for the last three decades undergone substantial changes in surrounding conditions, in public acceptance and not least in scope and organization. In the beginning emphasis was placed on the geographical location and physical facilities close to academia, later shifting towards the importance of business development processes, mainly for knowledge-based startups and spinouts. Then again focus shifted, this time towards the necessity of creating and maintaining the surrounding ecosystems and networks. With yet new conditions, opportunities and challenges caused extensively from globalization as well as the extended societal understanding of ‘innovation’ and its suggested role as the answer to all major societal challenges such as a growing and ageing population, finite resources etc., the emphasis and scope of STPs are yet again changing.

Thus far, the Innovation Excellence project has developed generic process descriptions for science parks starting at the very beginning with answering the question “*What is a STP?*”; redefining and contemporizing the term “science park”, its activities and its areas of innovation. Further, STPs’ core and support processes have been redefined in the light of the new challenges STPs worldwide are now facing.

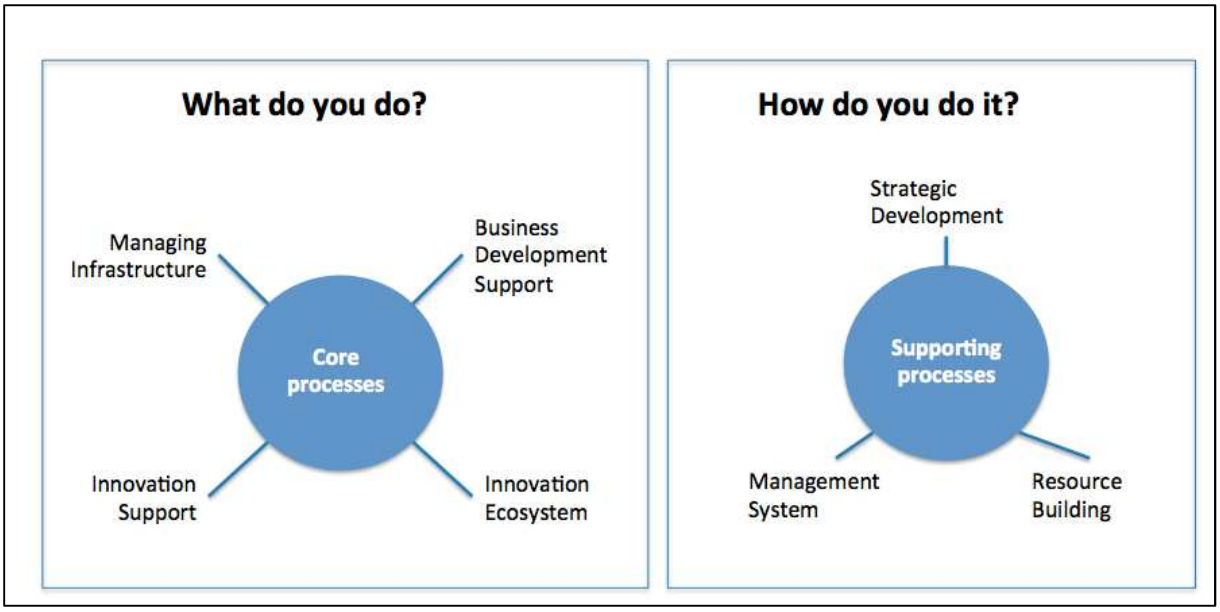
By mapping all stakeholders of the Swedish STPs one can clearly see how the scope and relevance of the modern STP has extended:



A widen scope leads to an extended network of stakeholders. What also becomes evident is the arrival of a new type of customer, that is nor member of the STP network and surrounding ecosystem nor tenant at the physical facilities. What is illustrated here is the opportunity of a new offering and business model for facilitating open innovation in existing companies. In a volatile market the product life cycles have become shortened whilst many R&D teams have become more narrowly focused and sometimes, even downsized to a slim minimum. Organizations, both private and public, now often find themselves with less inhouse R&D capacity but concurrently; a more open approach to innovation processes is spreading.

Meanwhile, Internet has rapidly broken the knowledge monopoly as well as made it possible to perform many qualified and knowledge intense tasks regardless of geographical matters. The conclusion is that the most talented people probably work elsewhere, and that many organizations are probably not innovation-capable enough for today´s competition. By exploiting STPs network of talented people within various areas of smart specialization, their knowledge of development processes and methods as well as their position as neutral arena, they can, offer business and innovation development to already existing organizations, i.e. open innovation market complementary support.

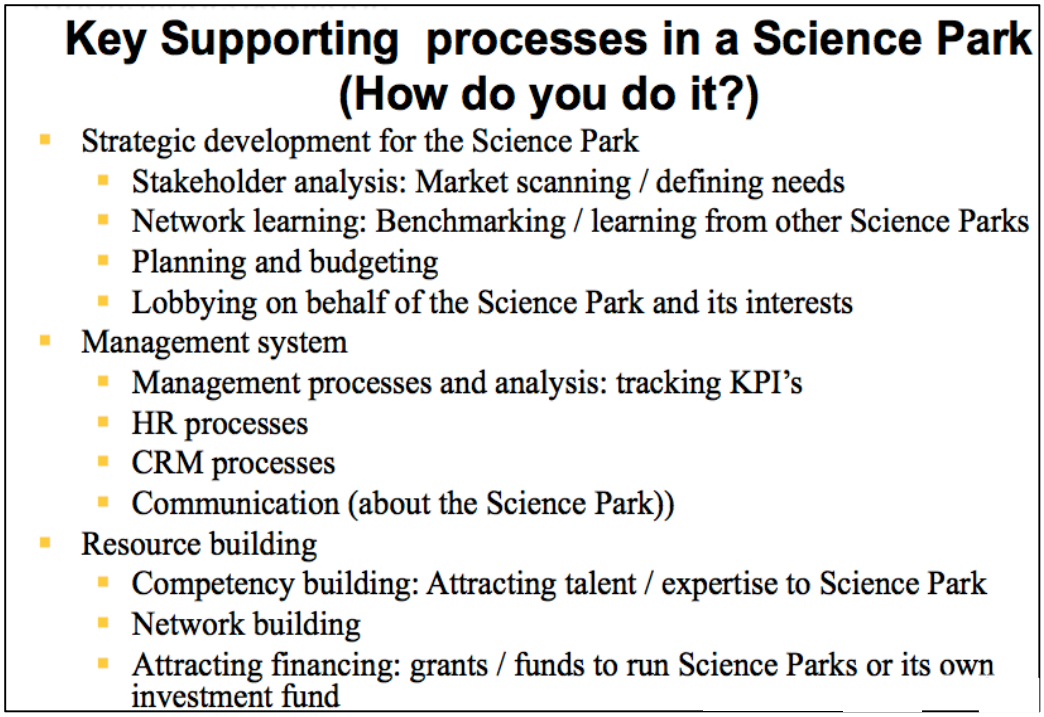
As discussed, the scope of the modern STP has extended beyond previous definitions and standards. When discussing what a modern STP do for its customers and other stakeholders we came up with the following generic description of what a science park do, its core- and support processes:



These 9 main processes can then be broken down to underlying processes:

Key customer processes in a Science Park (What do you do?)

- Managing infrastructure (offices, labs, IT, services)
  - Acquisition / selection
  - Maintenance
  - Commercialization
- Innovation support (Accelerator / Scaling / Renewal)
  - Building pool of talent and trusted network
  - Running Open Innovation Arenas
  - Facilitating Open Innovation processes
  - Test beds (shared testing and demonstration facilities)
- Business development support
  - Support of start-up companies
  - Networking and events (seminars)
  - Training (e.g. springboard)
  - Financing (facilitating financing for members)*
- Innovation ecosystem:
  - Communication (marketing and brand management) and education (informing authorities, communities) on behalf of customers
  - Regional development support (marketing the region, attracting companies and investment to the region and clustering)



After discussing, dissecting, analyzing, redefining and contemporizing the scope – as a starting point for the further development of the generic model - of the modern STP and its extended offerings the term science parks was defined as:

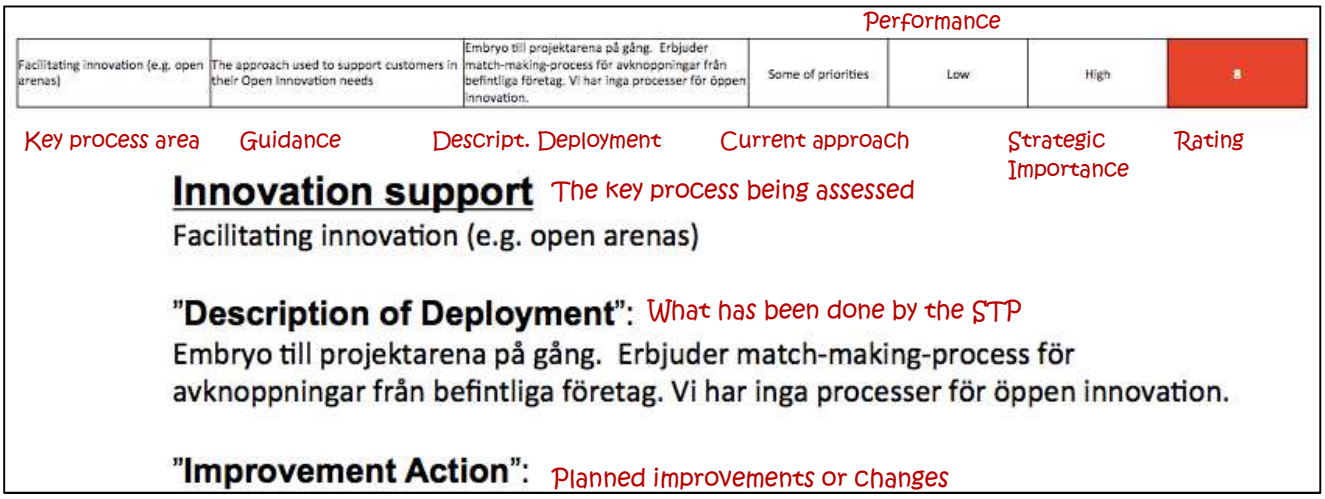
A Science Park facilitates the acquisition of knowledge and other resources for innovation-led growth, provides facilities that are adapted to growing companies and coordinates interactions between relevant actors in the innovation environment (typically including academia, the business community and the public sector) for the purpose of creating economic and public value for their customers and for society

Worth notifying is that the processes of redefining and contemporizing scope, offerings and stakeholders are ongoing, the world around us is in constant change leading to constantly changing conditions for the STPs. However it was necessary to go through the process for the participating STPs to have a common understanding and language in the proceeding of the project.

Peer-to-peer learning
When the basic understanding of what a modern STP constitutes of had been reestablished, the project continued with developing and testing a knowledge platform as well as well as a structure for how to benchmark between STPs through peer-reviews.

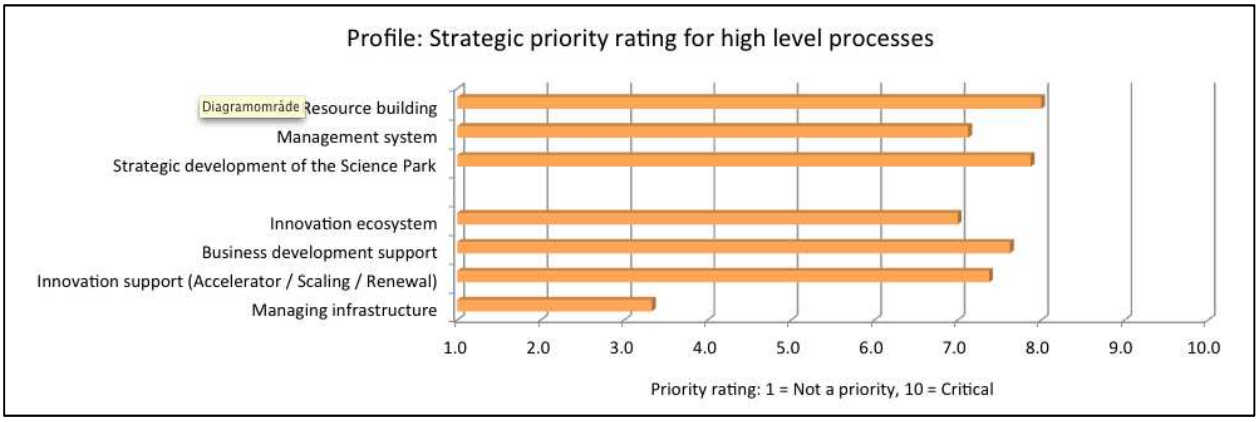
The peer reviews are organized into groups of four STPs with it's CEO and one strategic colleague, where the participating parks each get a day-long review session performed by the other parks as well as additional experts. The peer reviews are organized and facilitated by SISP. SISP has, together with EFQM consultants, developed a self-assessment scheme called Quick Scan. Based on the nine core- and support processes and its underlying processes the STP perform a self-evaluation of where they are at and what actions they are planning to take in order to become 'excellent'. The quick scan tool then come up with a list of priorities; what is crucial to do next, what can wait and what is already good or excellent as of today. Worth notifying is that is strictly a self-assessment tool, and not for comparison with other STPs. The Swedish STPs differ in size, maturity and resources hence a comparison between organizations is not meaningful or anything SISP recommends at this point.

An example of how the Quick Scan tool works:



An example of what The Quick Scan priority list can look like:

Key process area	Maturity	Rating
Managing infrastructure	3.3	Low priority
Innovation support (Accelerator / Scaling / Renewal)	7.4	Important
Business development support	7.6	Important
Innovation ecosystem	7.0	Important
Strategic development of the Science Park	7.9	Important
Management system	7.1	Important
Resource building	8.0	Highly important



Outcomes: part 1

Benchmarking between STPs has contributed to a well-integrated network for the participating STPs; creating great opportunities to strengthen relationships, foster collaboration and extending the participants' networks. It has not only led to new opportunities of collaboration between participants, a real increase in the amount of collaborations and exchange between the participating STPs have been noticed, based on both regional and/or industry ties. The feedback received supports this notion, several of the STP management teams witness about the benefits of discovering that they are not alone, that others struggle with the same challenges and that getting to know others with the same professional role makes it easier in the future to initiate common projects or to ask for advice.

Equally important, it has helped the participating STPs to develop its distributed and professional level of operations and has by participating STPs been regarded a valuable tool for organizational development. It has also been a valuable source for raising awareness of challenges ahead and putting place branding, open innovation and other related initiatives on the every day agenda. The benchmarking activities have shed light over and facilitated the interpretation of societal movements and trends leading to a more proactive approach from participating STPs as well as increasing involvement from local and regional stakeholders.
a perceived sense of sharing mission and professional role within the management teams.

Thus far, the overall conclusion is that the project have led to a new sense of sharing an overall mission as well as professional roles, which implies that participating STPs start to regard themselves as part of a larger network. Even if they differ in size, resources and maturity they still have much in common. Increased ties, experience- and resource sharing and new collaborations leads to the creation of critical mass, inevitably important for a small country as Sweden as well as in today´s globalized world and volatile markets. In order to make Sweden more attractive for talent, resources and business, the STPs and other actors within the national innovation system need to accumulate strength. With a new feel of unity spurring tangible collaborations, resources sharing and synergies, such as common soft landing offerings or shared innovation processes, therefrom, the Swedish STPs have found a sustainable way to take the position as interconnected nodes within the innovation system.

This project has also been an important input to a new initiative where the national science park-associations in the Nordic countries will cooperate more in development, attraction etc.

Role model learning
Current Swedish national politics is encompassing innovation more than ever. Commercialization of research and innovations in general and focus on the publicly financed innovation support system is high and new innovative methods and solutions are sought for. Hence the second important leg of the Innovation Excellence project is based around role model learning.

Through various ongoing pilot projects mainly based on specific challenges for the Swedish STPs in their aspired role as nodes in the regional innovation system, new methods and strategies are evolving. The first implemented pilot within the Innovation Excellence project is based around an open innovation platform named Ideon Open[3] and managed by Ideon, Sweden´s first STP, that in new ways took advantage of its broad network by offering existing companies facilitation of structured open innovation processes, and are now repositioning itself as a global innovation hub and tangibly boosting the region´s attraction and economic growth.

Ideon recognized that already established and mature companies were in desperate need of boosting their R&D abilities. As a mature STP with well-functioning business and innovation development processes Ideon also realized that these were applicable on established organizations as well as start-ups. Within the pilot project Ideon systemized and adjusted the existing processes to fit the new purpose, and created a market complementary offering for commercial organizations. The offering was based around their knowledge and experience of business and innovation development, their extended network and their position as a neutral platform within the innovation system. As a neutral actor with a relevant network they could select a great number of talented people and ensure them, as well as the potential customers, that all potential IP and other legal matters would be handled carefully and thereby act as trust-warrant. One of northern Europe´s largest window- and door makers signed up as pilot customer. After having completed a structured business development process called “compete and incubate”, facilitated by Ideon, 15 new ideas turned into six intern projects whereof three are, one year later, ongoing as separate spinouts going through Ideon´s incubator process.

Another example is the pilot Katalysator, managed by Sandbacka Science Park situated in northern Sweden, where Sandbacka integrates cluster processes and takes advantage of its central position within their region to make a rural area more attractive for talent, resources and business. Smaller cities and regions outside major conurbations around the world struggles with emigration to the larger cities, increased unemployment, decreasing educational status and other related challenges.

[3] Read more at http://www.ideon.se/en/ideon-open/

Hence these regions or cities must actively create appealing values and find strategies to revitalize in order to boost its attraction.

Sandbacka has taken an actuating and coordinating stance in this work by developing a model and action plan for strategic collaboration with the aim to boost the regional development work. The project aspires to coordinate innovative initiatives from regional clusters as well as other important actors on the innovation arena.

An upcoming pilot idea focusing on regional internationalization, aims at describing how to market a region´s USP to attract foreign investment and establishment of international companies in the region; e.g. the well-known international company Facebook decided to open up a server plant in the smaller northern town Luleå due to its cold climate and steady supply of hydro-power. However, Facebook would probably not had discover Luleå if it was not for a major joint effort by the local STP, the municipality and the university who set a common goal to deliver an appealing "package" to foreign companies. This example shows the importance of close collaboration and a shared vision of all triple helix-actors within a region - and the difference it can make to boost regional economic growth. It also demonstrates the optimal strategic role of STPs in coordinating such efforts as well as the follow-up actions. In the case of Luleå, the establishment of Facebook meant the start of a new industry within big data, and the local STP have now taken the reins in the joint quadruple helix effort of creating a surrounding ecosystem of suppliers and skilled employees which will be further explored in the upcoming pilot.

Outcomes: part 2
These pilots among others summarize the aim of developing new exciting methods for strengthening the STP´s role within the regional innovation system whilst integrating multiple actors and authorities contributing to an attractive and competitive region.

As of today more than two thirds of the Swedish STPs are involved through peer reviews and/or pilots addressing specific challenges and opportunities of the new role as central node. Of the yet not participating STPs several are planning to become involved, mainly through peer reviews, during the upcoming fall.

A change of attitudes and approach can be discerned within the Swedish STP network; systematic processes and methods are applied in new settings, quality assurance through common, and coherent, management system and key performance indicators applicable on both regional and national level as well as a perceived sense of sharing mission and professional role within the management teams. Several of the participating STPs also attest stronger incentives for collaborations and sharing of business opportunities, resources and front-edge competence, which hopefully will contribute to a sustainable and enhanced position of the Swedish STPs and strengthen the attractiveness of both individual STPs and geographical areas, as well as the nation.

SISP on the behalf of the Swedish STPs would appreciate the opportunity of IASP 30th World Conference to share the Swedish strategies and good examples on how STPs worldwide can not only overcome but actually benefit and excel by capitalizing on the challenges caused by the new world context. SISP sincerely believe that the strategies, tools and attitudes developed within the concurrent Innovation Excellence project could be applied in other countries and regions as well as in cross-national collaborations.