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STP and Collective Thinking in health

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STPs and Areas of Innovation: collective thinking

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Executive Summary

Collective thinking and collective intelligence are certainly core aims of a STP to boost international growth of its companies and science-business collaboration. Tallinn Science Park Tehnopol in Estonia has chosen health as one of its three focus areas. We have clearly acknowledged that it cannot be done just serving our tenant clients and just doing events for them. Therefore we have initiated a Connected Health Cluster that brings together all relevant partiers from whole Estonia. This is a relevant method to create collective thinking and intelligence among the cluster partners, raise their satisfaction and success and through it connect them into STP community and also attract companies to stay at STP or become STP tenants. The paper describes a set of different collective thinking techniques we have used. Cluster works well to promote STP activities upwards to the city and state and also get international acknowledgement.

Collective thinking and collective intelligence are certainly core aims of a STP to boost international growth of its companies and science-business collaboration. In addition more and more we understand and can also execute client and need driven innovation instead of technology push. That demands not only collective thinking among R&D and entrepreneurs but also users need to be tightly involved. Our challenge is how to accelerate collective thinking without "killing" individual.

Collective thinking versus individual:
„Some would argue that collective thinking has the advantage of utilizing the skill sets of all of its members, while others would argue that individual thinking is a tool that can be used to promote personal expression and creative ability. It is rational to accept the fact that it is all about personal preference. One may be better for an individual. Independent thinking is the desire and ability to convince ourselves that the information being presented is true or reasonable. Independent thinkers have the need to make sense of the world based on personal observations and experiences rather than just going along with the thoughts of others.

Collective thinking is a hindrance to an individual's personal growth and achievement potential. Individual creativity, uniqueness and independent thinking are compromised when group cohesiveness is placed at the forefront. Members of collective thinking groups are likely to avoid promoting their own point of views. There are several reasons for this. Many members within a group tend to avoid singling themselves out for fear of being viewed as foolish. They also may have a desire to avoid embarrassing or angering the other members of the group. Group thinking drastically alters the ability to think independently. The society in which we grow up in has great influence on the person we become. If it is not carefully managed, humans have the tendency to take on the traits of those around them. They act and do as those around them act and do. Sociology is just one science that primarily focuses on social behavior and human groups. It studies social relationships and how those relationships influence people's behavior.

It can be argued that collective thinking is of great benefit to the member involved in the group. Group thinking allows you to draw on each group member's knowledge and different perspectives. Groups are great for motivation as well. They force you to be responsible to others, allowing you to do more and better work on a project than you can do when only responsible for yourself. Group thinking is effective at problem solving by incorporating the collective effort of the entire group. Some of our greatest achievements in history have been made by a group of people. As one person has an idea, another person can add to it, until it is the best idea it can be. Everyone has strong points and weak points. By being in a group atmosphere, your weak points can be strengthened, and your strong points can be shared.

At the end of the day there is no clear cut winner. There are only those that prefer one or another."[1]

Tallinn Science Park Tehnopol in Estonia has chosen health as one of its three focus areas. We have clearly acknowledged that it cannot be done just serving our tenant clients and just doing events for them. Therefore we have initiated a Connected Health Cluster that brings together all relevant partiers from whole Estonia: companies (startups, health IT, biotechnology, medical technology), R&D partners and need partners, i.e. hospitals, general practitioners, big pharma, spas, sportsmen, etc. This is a relevant method to create collective thinking and intelligence among the cluster partners, raise their satisfaction and success and through it connect them into STP community and also attract companies to stay at STP or become STP tenants.

Estonia is a small country with just 1.3 million people and 3379 hospital beds and 263 GP practices. We've got around 100 companies with its own product in health domain. But being small can also be an advantage. So internet access is considered to be social right for everyone and 99.8% of bank transfers are performed electronically. We have introduced an electronic ID-card in 2002 and now nearly everyone has got it and has access to his/her data using that card. The data also includes his/her health data in the central patient portal. In numbers over 90% of hospital discharge letters are sent electronically, e-prescription covers 97% of issued prescriptions and about 50% of all ambulatory case summaries are sent electronically. There is also a gene bank with access to more

[1] http://ccpsoc101.blogspot.com.ee/2011/10/collective-vs-individual-thinking.html

than 60,000 samples that can be used for further research especially well due to the Estonian state wide e-health system and high trust level of people towwards their government and e-services.

The disadvantage of being such a small country is that we have got nearly no home market for high-tech health products but that makes our companies think and act global from day one. Therefore the focus of our Connected Health cluster is to support collective thinking towards global markets. In 2015 81% of the Connected Health cluster members already export their product and services and all companies have a goal to achieve export in the near future. The ambitious aim of our companies is to double their export turnover by 2018.

Connected Health Cluster has been using several tools for accelerating export of our member companies. Cluster partners and cluster management team members visiting health conferences, fairs and making target market visits create memos with ideas, trends and new contacts for all cluster partners. We gather market information from different sources, like events, network sites, international partners to our joint repository. We arrange seminars where our partners share their honest experiences accessing new markets with their health products and services and joint business missions with matchmakings to the chosen target markets. The cluster partners who have got good foothold on a target market in several cases are happy to help others to follow one by one with concrete insight, contacts and even promoting their products in case there is a good complementarity.

Estonian Connected Health Cluster itself is actively participating in chosen international networks. The most valuable for us have been European Connected Health Alliance and ScanBalt BioRegion. The generation of the ECHAlliance extensive ‘intelligence network’ aims to maximise healthcare resources and drive mutually beneficial strategies. A collaborative partnership with more than 320 member organisations, 15,000 profiles and a presence in 25 countries, the ECHAlliance is a powerful force for change, whose combined knowledge, expertise and connections, can speed up progress in the delivery health and social care. ScanBalt is a not for profit association connecting the ambitions of the Baltic Sea regions and the regional networks. Tallinn Science Park Tehnopol is also actively collaboarting with IASP members that are active in health domain and are interested to find new partners for their client companies. All these networks have also got internet based tools to facilitate companies and institutions to share equipment, services, facilities and the skills & knowledge of personnel, gather market information and build global communities.

During last six months four of thirty seven Estonian Connected Health Cluster companies have entered a new market and 14 have found a new cooperataion partner. Most of these cases have happened thanks to the help and support of the cluster personnel, cluster members helping each other and international partners of the cluster. All the Estonian Connected Health Cluster members belong also to Tallinn Science Park network, i.e. are its clients, and through the collective cluster tool science park increases the export and competitiveness of its client companies.

In order to smooth access to European markets for Estonian health companies the cluster has decided to work collectively toward digital single market in Europe in health. This involves mostly legal and technical agreements but also a shift in the mind set of users of healthcare, both medical personnel and patients, people. In the present conditions it is more attractive for our health companies to target US.

We have arranged an international workshop with European Commission, Estonian high officials being responsible for this field and involved stakeholders from several European countries participating. The workshop concluded to proceed initially with a core group of some most advanced e-health countries in Europe, i.e. Scandinavian countries and Estonia. We did have a meeting of health IT architects from Estonia, Finland, Sweden and Denmark in Helsinki in January to understand approaches and close-by ambitions of these countries. The involved countries have started from different angles and achieved success differently. The advantage is that we can learn from these different approaches and do not need to invent the wheel all over again. Estonia and Finland decided to build and launch first cross-border e-health services, such as patient summary and e-prescription starting already in 2016. Sweden and Norway are launching their patient portals that are open for all people to insert and handle their health data and offering also private companies a smoother access to its citizens. Estonia is eager to learn from them and implement it in the near future. Denmark and Sweden have set a goal to bring together all medical, genomic and lifestyle data into one system to be used for research but also for building new products. Estonia is considering the opportunities to

join. That would be a considerable regional collective thinking task brining benefits to all our health companies and also to all our citizens and the state health care system.

Connected Health Cluster has got a team of seven health IT companies, larger companies and startups, and public sector stakeholders to work our how we can connect health and medical data or our people to make it easier for our citizens but also health care service providers and of course companies. This has been a process of series of workshops were IT architects from our member companies and public sector have been collectively working on technical, organisational, juridical and psychological issues. It has been an initiative from bottom up by the companies and the Connected Health Cluster has just been the facilitator to get it started and provide the circumstances. There are additional parts added over time and additional companies join to develop the new parts and that shows the importance of the topic and value to a larger number of member companies.

The work in the cluster community is based on the following tracks: individual communication with all cluster members, initiating and supporting joint developments, organising several round tables, workshops, "world cafes", need based hackathons and seminars based on the needs and opportunities of the cluster members, meetups to share target market intelligence, hosting foreign delegations, introducing interesting technologies from Estonia for multinationals, branding and marketing the cluster globally and building, keeping active relations with international partners.

On top of face-to-face meetings some IT tools are used to support it, like Dropbox for storing valuable materials for cluster members and google community for sharing news and opening discussions for wider community. A lot of information goes through usual e-mail and homepage but we also have a monthly e-newsletter with relevant events from all over the world and selection of news in the domains of our cluster members. On top of that we are creating an outwards monthly e-newsletter to tell stories about our members and their products to the global arena, i.e. a large pool of international partners. We believe that face-to-face meetings build always the core of collective thinking but IT tools are practical means to support and share.

One topic that has appeared through the face-to-face meetings and workshops is effective health communication to attract people to get involved and initiate long term behavioural change in the users concerning their lifestyle for better health. Based on the needs of our member companies and public sector stakeholders we have proceeded topic by topic from there to open new methods and practices for our members that they can use. We have gathered expertise from all Estonian universities and arranged a couple of workshops around certain techniques to achieve effective health communication and behavioural long term change. International articles have been gathered from the web into our web based cluster storage for all members to use. The next layer is to invite best professionals and successful company cases from Europe to present their methods and lessons learnt to our Connected Health Cluster members.

„Health care is ailing and in need of help. Although medical treatment has made astonishing advances over the years, still the packaging and delivery of that treatment are often inefficient, ineffective, and consumer unfriendly.

The well-known problems range from medical errors, which by some accounts are the eighth leading cause of death in the United States, to the soaring cost of health care. The amount spent now represents about one-sixth of the U.S. gross domestic product; it continues to grow much faster than the economy; and it threatens the economic future of the governments, businesses, and individuals called upon to foot the bill. Despite the outlay, more than 40 million people have no health insurance.

Such problems beg for innovative solutions involving every aspect of health care—its delivery to consumers, its technology, and its business models."[2]

As science parks are meant to be the initiators and accelerators of innovation and collective thinking, we are also trying to give our best contribution to help health care to become more efficient, more

[2] https://hbr.org/2006/05/why-innovation-in-health-care-is-so-hard

predictive and also more user friendly. Our task is to educate, motivate, facilitate collective thinking and creation and accelerate the growth.

Therefore we have taken the challenging task to create new useable, useful and desireable products and services for health care personnel and final users, i.e. patients and people still healthy. There are many applications and lots of data already available but it is much more complicated to build value creating services on this data. To facilitate a better understanding of the real needs and user habits the cluster uses several tools. We gather the good examples from the world about product and services that have created huge value and made a difference to the present practice in certain health domain. We arrange visits to chosen hospital deprtaments to get an insight about what is their everyday procedure like and where the issues lay and find out where the largest amount of time and money goes and brainstorm how it can be arranged to save considerable amount of time or money. As one example, then in Aalborg University Hospital, a new way was created to handle their garbage, and that saves 200.000 € per year for the hospital. We also arrange workshops with all involved stakeholders, including patients, around one issues, e.g. HIV, to get a deep understanding of the issue, the needs and habits of all stakeholders and largest issues and bottlenecks. Our task is to transfer the understanding to the innovators and technology developers and process designers to build solutions that make a difference and crack the problem in a new way. For that purpose we arrange hackatons and provide longer term one-to-one coaching for the teams to get the product to the market, build an international company, raise investrment and achieve a growing turnover.

In close collaboration with health care service providers we are also planning an innovation umbrella to support them to gather and evaluate the usefulness and business potential of ideas from personnel working in health care. In Estonia innovation is still something quite wierd for the hospitals, therefore they are not ready to have their own innovation departments, but they already are ready accept us to provide the support and spread the word to their personnel to participate. The plan is to launch it with a hospital hackathon based on NHS exmaple from the UK and build the systematic approach form there on starting with the first ideas from that event. We have gathered best parctices mostly form Scandinavian countries to become our role models and also introduced our hospitals to those.

On top of new product and services to be developed, and health care providers to become more open we need to increase the knowledge of information technology among health care people and vice versa. To achieve it we are investigating both target groups and developing experimental and practical training programmes on the results. The first programme is planned to target mostly innovation purchasers and implementors in health care organisations and the program is planned to be built around a new innovation to be implemented in Estonia, e-referral letter that in reality should smooth the entire process from a health issue of a patient to having him/her hailed.

We have learned that the cluster works if the cluster manager and the whole team is active enough to initiate new topics and events and takes time to meet its members individually often enough to know their needs and communicate the opportunities properly. It is also very important that the cluster manager knows its members personally and understands their products and can support their business development, so the quality to its members can be kept high.

Connected Health cluster sees it essential to work in international consortiums to facilitate collective thinking and intelligence not only inside Estonia but also internationally. The main networks that are helping to accelerate our global breakthroughs are IASP being worldwide, European Connected Health Alliance and ScanBalt BioRegion. These networks arrange face-to-face meetings for cluster coordinators, international joint events and business missions but also have initiated internet based tools to allow companies and institutions to share equipment, services, facilities and the skills & knowledge of personnel, gather market information and build global communities.

Cluster with all its collective forces is not only a good way to connect companies and R&D partners with a STP but its works well to promote STP activities upwards to the city and state and also get international acknowledgement. Thanks to the cluster activities Tallinn Science Park Tehnopol has got media coverage in Estonia to the rate nearly once a week and invitations to all important related conferences in the region to present and a place in all relevant advisory bodies of Estonian state related to health to represent the opinions and opportunities for companies. The success in health will be followed in the smart city domain by my colleagues at Tallinn Science Park Tehnopol.