

***e*Tampere: Building an electronic pathway
to the future?
Evaluation of *e*Tampere**

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Foreword

The Nordic countries are today faced with the challenges brought about by the social, economic and technological changes that are part and parcel of the emergence of the 'Information Society'. The concept itself has been attributed with a variety of different meanings, ranging from the competences of individual citizens and their ability to take part in civil society, to the means by which regions transform their economy and ensure an industrial renewal process that typifies the "New Economy". What makes the Information Society particularly interesting, as an area of research is its potential to host a new socio-economic and technological paradigm. In theoretical terms such a paradigm is increasingly sought after in order to better understand the multi-faceted forms of technological change, knowledge diffusion and innovation in light of the simultaneous changes in the role of the citizen in society in general and in the public sector in particular, often denoted by the term *eGovernment*. In many cases such changes are accompanied by new policy instruments and initiatives, as is the case with the *eEurope* initiative and its local and regional variations, such as the *eTampere* programme evaluated in this project.

eTampere is a five-year development project whose main objective is to promote the development of Information Society through activities in the areas of public online services, the research and training knowledge base, and new businesses. The evaluation reported here was commissioned by the city of Tampere, and its goals were to answer the following questions:

- How is the *eTampere* initiative organised, administered and utilised in the area of developing ICT technology and content? How is it positioned vis-à-vis other relevant development policy initiatives?
- How does *eTampere* rate in terms of Nordic/European comparisons? (benchmarking)
- What has been the impact of the initiative thus far, and in order to further improve its impact, what are the main areas that should be dealt with?

Kaisa Lähteenmäki-Smith and Jon Moxnes Steineke were responsible for the drawing up of the project. They were helped by the interviewees and by the contact persons involved in programme implementation, all of whose insights were greatly appreciated.

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1. Introduction: *e*Tampere in a European context

1.1 The objectives and methodology of the evaluation

The *e*Tampere initiative is a five-year development project that seeks to promote the development of the Information Societyⁱ through measures targeting the following focus areas: the availability of public online services to residents; the strengthening of the knowledge base of research and training; and the generation of businesses related to the Information Society.

This evaluation project undertaken by Nordregio has sought to assess the organisation, impact and relevance of the *e*Tampere initiative in a local, regional, and a European context. The questions addressed in this evaluation can be divided into two sets: general research questions and programme specific ones.

The research questions addressed in the evaluation included:

- How is the *e*Tampere initiative organised, administered and utilised in the area of developing ICT technology and content? How is it positioned vis-à-vis other relevant development policy initiatives?
- How does *e*Tampere rate in terms of Nordic/European comparisons? (benchmarking)
- What has been the impact of the initiative thus far, and in order to further improve its impact, what are the main areas that should be dealt with?

The analysis was based on comparative methodology, viewing the *e*Tampere programme in the context of other similar policy activities (both *e*Europe and national policy instruments and initiatives within the Information Society sphere). In order to place it in the appropriate policy context, evaluators relied upon their accumulated expertise of the other evaluation projects they have undertaken; in particular the mid-term evaluation of the Centre of Expertise programmeⁱⁱ and projects on Nordic ICT policies in general and broadband technology in particularⁱⁱⁱ.

Specific focus was put on identifying actions or measures that could be undertaken in order to improve the programme's effectiveness and governance structures. The most important primary data sources used included the survey undertaken in May-June 2003 (reported in chapter 3) and the interviews conducted with the key stakeholders and programme management team undertaken in June 2003. In addition a wide variety of secondary sources were used, ranging from strategic documents on the regional, national and European levels to previous studies on Information Society policies and innovation policy. Statistical data was also extensively used, specifically in relation to the state of the art of Information Society today (in Tampere, Finland, the Nordic countries and Europe) and in connection to the Tampere Regional Innovation System (RIS, e.g. innovation and clustering within the ICT field in Tampere).

While the main emphasis was placed on the over-all functioning of the programme, each of the modules or sub-programmes of the programme were also addressed separately through documentary-sources, project information and interviews undertaken as part of the evaluation. The role of the sub-programmes in improving the impact and efficiency of the programme was also addressed in the survey. The main aim of the

interview and survey sections was to get a better idea of the over-all governance model of the initiative, how it is perceived to work in its current form and how it should be developed in order to implement the strategy and better achieve the goals set during the remaining part of the programming period. The interview section also addressed the perceptions of some of the key stakeholders as to the future challenges and possible pathways to be taken after 2005.

1.2 The European context: *eTampere* within *eEurope*

European societies are today faced with the dual challenge of addressing the competitive challenges to their economy and the social and political challenges brought about by the transformation of the global politico-economic constellation. The changes that are taking place are quite drastic in their implications, as they change the way in which production; manufacturing and services are organized, steered, administered and consumed. While patterns of production are transformed as a result of industrial and technological change, so are the patterns of consumption and identity-building, as consumers adopt new ways of consuming and of using services through new technological applications. These changes require new policy responses and the Information Society as a whole thus becomes an area within which both national governments, regional and local authorities and supra-national entities seek to make their mark. In this context, *eTampere* provides an interesting case study of such a local initiative, in particular when it is assessed against the backdrop of its European predecessor, the *eEurope*-initiative.

The European Council held in Lisbon in March 2000 set the objective of making Europe 'the most competitive and dynamic economy in the World'. As if this was not ambitious enough, it was also linked to goals in the area of Information Society, as it was seen that the latter forms a prerequisite of the former. It was further recognised that Europe needs, as a matter of immediate concern, to fully exploit the opportunities of the new economy and in particular, the Internet. The meeting thus invited the Council and the Commission to draw up '...a comprehensive *eEurope* Action Plan using an open method of co-ordination based on the benchmarking of national initiatives, combined with the Commission's *eEurope* initiative as well as its Communication "Strategies for jobs in the Information Society." ' These actions followed the introduction of the *eEurope* initiative by the European Commission in December 1999 with the objective of 'bring[ing] Europe on-line'. Complementary to *eEurope*, the Commission also presented a Communication on 'Job Strategies in the Information Society' in January 2002. The Broad Economic Policy Guidelines provided the economic policy context in terms of innovation policy and stressed the need for well functioning capital markets and more competition in product markets in order to foster innovation. Subsequently the Commission adopted a draft Action Plan on 24th May 2000, which was developed further into the action programme accepted under the Portuguese Presidency (CEC 2000 and 2000a). Behind the introduction of this initiative aiming at the development and promotion of Information Society there are national and European processes and challenges at work, as well as regionally specific circumstances and policy contexts, though they are not particularly visible in the European documents that tend to concentrate specifically on the national level and draw on comparisons between the member States. The benchmarking exercise presented in chapter 2 will address some of these differences and similarities.

In general, *eEurope* initiatives are adopted to increase regional competitiveness, while the implementation of Information Society initiatives have more re-distributional aspects in mind (Tsipouris 2003). As such, *eEurope* is a political initiative aimed at ensuring that the Member States and the European Union benefit fully from the changes that Information Society brings. These changes are perceived as both social and economic, and cultural and technological, and are often perceived as being the most significant transformative processes since the Industrial Revolution. It is important to emphasise that though technology is one of the most important and visible meeting points of these changes, the current on-going post-industrial revolution does not merely concern technology alone, but rather the broad understanding of Information Society referred to above should be used. In the original strategy document for *eEurope* the challenges were outlined as follows:

... the changes the Information Society is bringing[] will affect everyone, everywhere [...] Bringing communities, both rural and urban, closer together, creating wealth, sharing knowledge, they have huge potential to enrich everyone's lives. Managing this transformation represents the central economic and social challenge for the Union. It will impact profoundly on European employment, growth and productivity for the next five years and for decades afterwards. *eEurope* is intended to accelerate positive change in the Union. It aims at ensuring this change towards the Information Society is cohesive, not divisive. Integrating, not fragmenting, an opportunity not a threat. In essence, *eEurope* aims at bringing the benefits of the Information Society to the reach of all Europeans. (CEC 2000, 1-2)

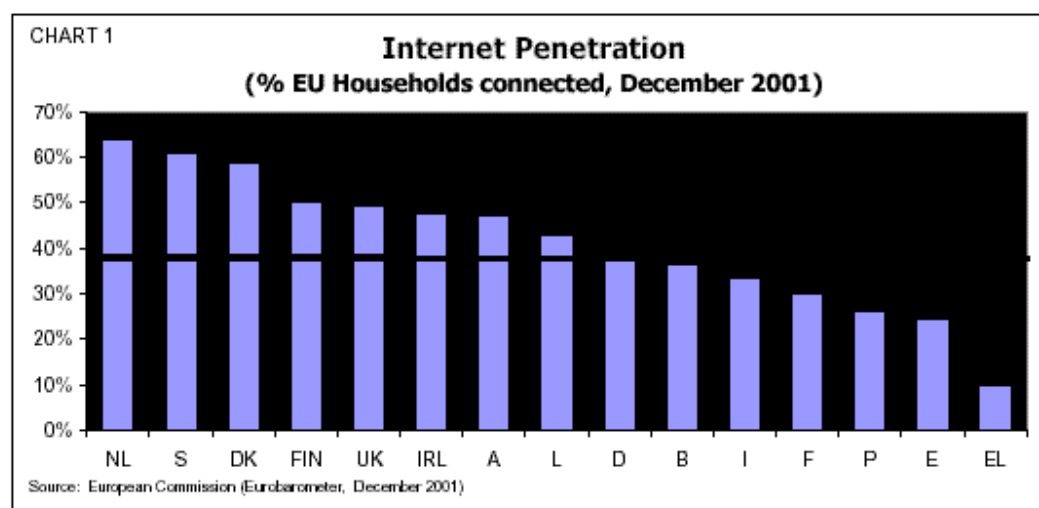
These discourses were also very much to the fore in the *eTampere* discussions and documents, and it can be argued that the strategic concerns fit well into the corresponding European debates. Bottlenecks exist in both cases and it has been acknowledged that there remains a long way to go in order to fully develop the Information Society in the EU framework, and that a concerted effort is needed. In the *eEurope* strategy the bottlenecks have been identified as including expensive, insecure and slow access to the Internet and *e-commerce*; an insufficient digitally literate on-line population; the lack of a sufficiently dynamic, entrepreneurial, service-oriented culture, and a public sector which is not playing a sufficiently active role in enabling the development of new applications and services. In order to target these weaknesses more specifically, a number of focus areas of action have been outlined. These include those areas where the EU could make a specific input and where a European 'value added' was seen to exist. Such areas included targeting the largest group of potential Internet users and at the same time those who will in the future determine how far the Information Society will be developed and used as a part of the every-day life of European citizens, i.e. the European youth ('bringing them into the digital age'); Cheaper Internet access; Accelerating *E-Commerce*; Fast Internet for researchers and students; Smart cards for secure electronic access; Risk capital for high-tech SMEs; *eParticipation* for the disabled; Healthcare online; Intelligent transport; Government online. (CEC 2000, 5). These areas were then developed further into an operational action plan (CEC 2000a) within which specific activities were identified for the Member States, for public authorities and businesses, as well as for EU institutions. Specific reference to 'the regional dimension' was however made in only a few cases, mostly in relation to the need to address social cohesion needs through Information Society actions, in addressing market failure in the remote and less developed areas and in ensuring that the citizens of such regions enjoy equal access to the modern communication networks, e.g.:

Ensuring that less-favoured regions can fully participate in the information society is a priority for the Union. Projects encouraging up-take of new technologies must therefore become a key element in regional development agendas. Public investment in information society infrastructure in less favoured regions may be justified in cases of market failures, where private investment alone cannot be profitable. These investments must be made in a way that does not distort competition and is technologically neutral. Investments must be determined by each region and on the basis of their particular economic and social structure. The Commission has undertaken to increase priority of information society related projects within the structural funds. A similar revision of priorities has been announced by the European Investment Bank (EIB). (CEC 2000a, 7).

Specific policy areas were identified as particularly relevant for the development of Information Society from a regional perspective, such as primary and secondary healthcare (the need to ensure that the care providers have health telematics infrastructure in place including regional networks) and transport (the needs of urban areas were particularly referred to here, in particular in relation to intelligent transport systems.)

The actions and policy areas that need to be addressed were further elaborated upon in a series of benchmarking exercises (e.g. CEC 2002), where the current state of affairs as regards the development of the Information Society in the Member States was analysed. Some of the results were related to the picture of national Internet penetration, Internet availability in schools, public services available on the Internet and other similar traditional IS indicators, where Finland as a whole rates quite well.

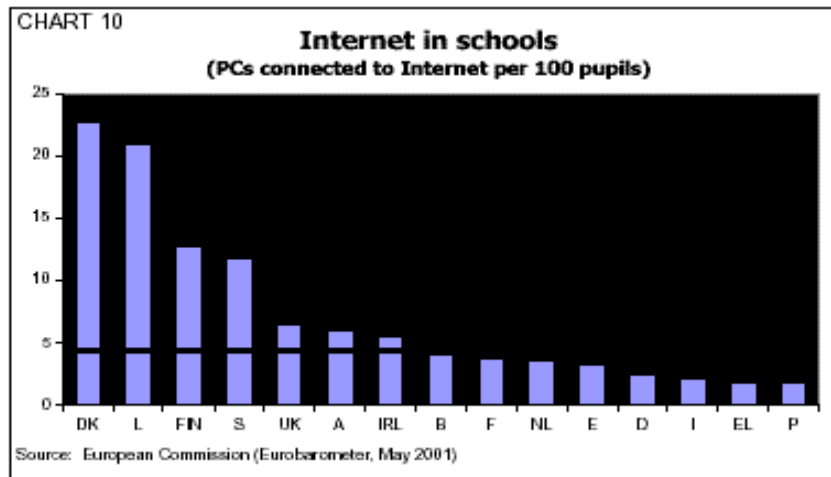
Table 1.1 Internet Penetration



(Source: CEC 2002, 7)

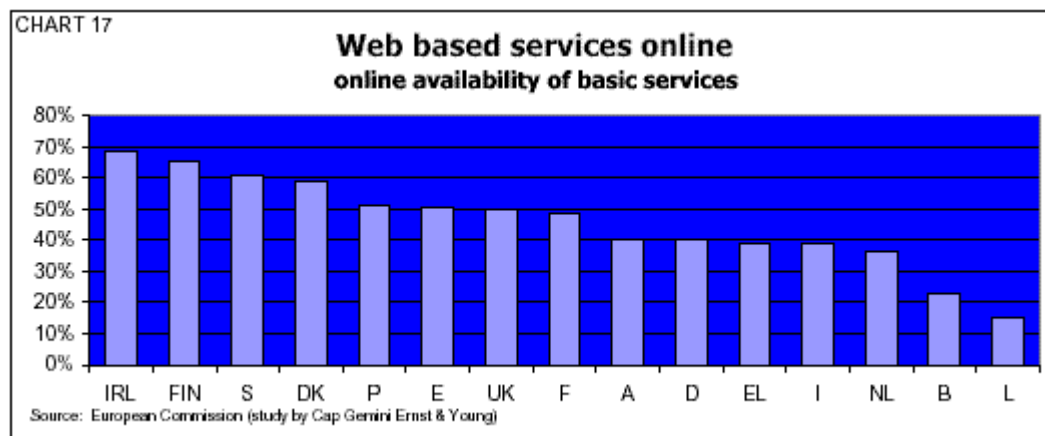
Some examples of these indicators are shown in the attached tables.

Table 1.2 Internet in schools



(Source: *Ibid*, 11)

Table 1.3 Web based services online



(Source: *Ibid*, 17; for more information on the specific policy areas and benchmarking see http://europa.eu.int/information_society/europe/benchmarking/index_en.htm)

In the case of Tampere Internet penetration, utilization etc. have also been monitored on a regular basis through surveys (undertaken by *Taloustutkimus Ltd.* For the City of Tampere; Hänninen & Ryypö 2002). Though of course this single survey only provides a snapshot of how the situation was at a specific moment, the possibility of repeating the survey allows us to potentially see the situation's gradual development and hence the dynamics of IS development. The 2002 survey indicates that 69 % of respondents have access to a computer at home, approximately a half of these are also work users and over half of those with e-mail (approx 69 %) use it daily or almost daily. Moreover, the visibility of *eTampere* seemed relatively good, as 64 % of respondents had heard of the programme (in relation to the 81 % of Internet-users who had visited the homepage of the City of Tampere this could be seen as quite a high number). There seems to be little difference between age groups when it comes to awareness of the programme, though awareness is highest in the groups 35-49 and 25-34 and lowest in the age group 15-24. This is not surprising if one considers that the youngest age groups are unlikely to need public services independently of their parents and are statistically most unlikely to be interested in public policy or politics (we shall return to these questions in section 2.5). On the other hand measures involving

and activating youth and building their possibilities and capability to engage in activities such as *eTampere* may in light of the strategic goal-setting require more active consideration.

It thus seems fair to argue that Tampere has traditionally been viewed as a national forerunner of information Society development. To widen the perspective one needs to consider the uniqueness of Tampere in a wider European perspective. On closer analysis of *eTampere* and its strategy it soon becomes apparent that the areas identified in the *eEurope* documents are also those most specifically targeted within the *eTampere* initiative. (This is a point that we shall return to later in connection to the strategic analysis section.) Finnish national strategies for developing the Information Society emerged in the late 1990s, with a particularly central role being played by SITRA (the Finnish National Fund for Research and Development), which is an independent public foundation or 'think-tank' functioning under the supervision of the Finnish Parliament. In launching this debate Sitra's publication of the Finnish National Information Society Strategy: 'Quality of Life, Knowledge and Competitiveness' (Sitra publications n. 206) in December 1998 was particularly central. This strategy identified a number of 'Spearhead Projects' ('Kärkihankkeet') to be developed into Spearhead Programme Areas for the future development of the Finnish information society (from content industry to *eBusiness*, *eLearning* and local information Society). This Information Society network instrument ('Spearhead Network', see www.karkiverkosto.fi) was recently merged with the *eTampere* sub-programme Information Society Institute, which can in itself also be taken as an indication of the centrality of *eTampere* in the Finnish information Society debate.^{iv}

The national differences in Information Society development have been of interest to researchers in recent years and the Finnish case has often been used as an interesting case study in this respect. It has been presented as an example of the ways in which modern Western societies can best find ways of adjusting to current economic challenges through the manipulation of technological 'know-how' and adjustability, largely based on some of its historical characteristics and their unique conjuncture. The case has been explored and made internationally interesting in particular in Castells and Himanen's analysis (2001), which basically sees the Finnish way of adjusting to the technological breakthrough and expertise within the context of a model that is both technologically advanced and socially progressive. Interestingly enough the analysis underlying their work offers up the Finnish example as a demonstration of the fact that the development of such global technological advances and of the global Information Society that accompanies it (with its sub-systems on the national and macro and micro regional levels) does not automatically imply the exclusion of a large part of the society. This notion is however accompanied by the belief that the Finnish case may be rather unique, or at least the conclusions drawn from it are limited, as the characteristics are necessarily limited to some types of social systems with highly egalitarian values, though also perhaps with the potentially somewhat more negative aspects of the small introverted society within which this small export economy success story is embedded. In any case it seems clear that the unique combination of the dynamic economic growth experienced in the latter part of the 1990s, together with technological optimism and public policies conducive to developing Information Society through broad-based cross-sector efforts have been both an indication of the general willingness to pursue active Information Society policies and a success in achieving a certain policy consensus for this pursuit. There is however at

times the nagging suspicion (at least as regards international comparison) that exclusion may be a more prevalent problem than the Finnish case would otherwise suggest, even though there are aspects of exclusion and limitations on accessibility in the Finnish Information Society model also, as will become apparent in the survey reported in chapter 3.

1.3 Tampere and its Regional Innovation System (RIS) as a starting point

1.3.1 *eTampere and innovation policy*

Technology applications provide the basis upon which the services within *e-learning*, *e-government* or *e-health* can be embedded. As such, Information Society is developed in close relation to innovation policy and the interlinked nature of the two is never more apparent than in the case of Tampere. Some comparative remarks are thus in order here, in particular relating *eTampere* to the wider innovation policy field in the Tampere region and in the context of a specific example of this policy, namely the Centres of Expertise programme, as implemented in Tampere region, since 1994.

The development of some of the key clusters between 1998 and 2000 is presented in the table below.

Table 1.4

Businesses in 2000	<10	10-49	50-249	>249	Total	Change 1998-2000
Staff						
ICT	807	1 961	2 172	4 243	9 183	+ 30 %
Health tech-	737	283	*	*	1 631	+ 8 %
nology						
Communi-	1 876	2 677	1 857	963	7 374	+ 13 %
cations						
Turnover (share of total, 1 000 €)						
ICT	3 %	8 %	6 %	84 %	3 793 636	+ 247 %
Health tech-	38 %	16 %	* %	* %	143 893	+ 14 %
nology						
Communi-	21 %	38 %	23 %	18 %	902 231	+ 24 %
cations						

(source: CoE mid-term evaluation, Ministry of the Interior 2002)

Cluster development between 1995 and 2002 is presented in the following chart (source: CoE mid-term evaluation, Ministry of the Interior 2002). Based on these two pictures it seems justifiable to argue that while the immediate growth potential has been clearest in the ICT sector, health and communications seem also to display an emergent growth potential that is however yet to be fully capitalised upon.

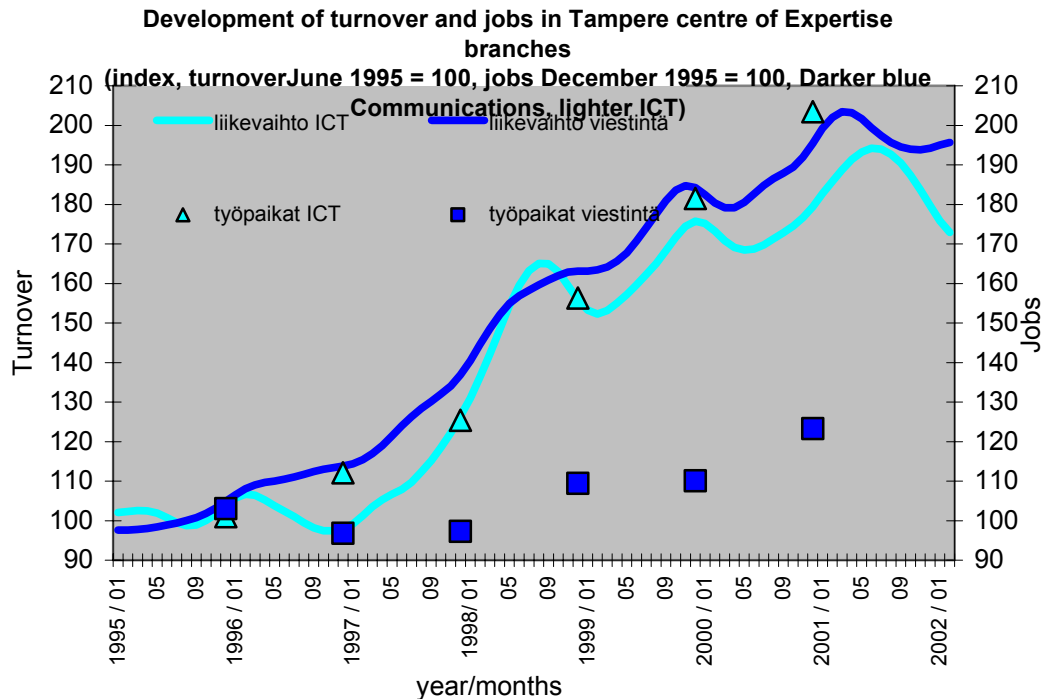


Figure 1.1 Development of the ICT/Infocom cluster

The evolution of the Tampere ICT sector is based on various factors. O’Gorman and Kautonen (2001) argue that firms specialising in software development have less growth-driven strategies than software firms do in other Finnish cities. This issue is currently being addressed by the stimulation of local demand in initiatives such as that of *eTampere*, where public procurements play a role in stimulating and advancing local demand in a more systematic manner. This may naturally also offer some alternatives in times of economic recession, enabling the ICT cluster to be kept up and running.

Some of the main issues identified in the analysis of Tampere CoE are presented in the SWOT table below. On closer analysis it is quite easy to draw out the similarities between the CoE and *eTampere* programmes, as the main issues of strategic importance relate to the Tampere Regional Innovation System as a whole.

Table 1.4 SWOT table

Strengths	Weaknesses
• Creation of genuinely new co-operation structures (CoE more than just a collection of projects) • Statistical analysis and monitoring of RIS and cluster development • The role of the technology centre as a co-ordinator of the programme allows for synergy^v • Role of CoE as a strategy-builder: awareness of the process of building a RIS and the need to co-ordinate all the available policy instruments • Successful marketing and visibility • Well developed resources and infrastructure, committed personnel and leadership • Positive image of Tampere • Positive innovation environment and good will of the city of Tampere • Analytical resources for the development of Regional Innovation Systems locally available (University of Tampere and its research units)	• Internationalisation not fully developed^{vi} • Wide spectre of ICT and electronics R&D, not enough production • Commercialisation of innovations for the research community not fully developed • Programme in itself not particularly well known, operationalised through concrete projects
Opportunities	Threats
• Project activities across the branches/areas of expertise still not fully developed, more theoretical than real • Internationalisation • Development of competitive networks • Networking with other CoE's in other regions • Commercialisation and product development of the existing expertise • Active development of start-ups (eAccelerator!)	• Enlarging the centre geographically may weaken the strategic effectiveness and synergies • Lack of public venture capital

The very reason for the effectiveness of Tampere's innovation policy strategy lies in what could be called its 'consensual aspects.' That is to say, in the fact that regional innovation and cluster policies are implemented across the board. Indeed there seems to be a particularly deeply felt agreement on this being at the heart of strategic thinking in and for the Tampere region (this became apparent both in the CoE and the *eTampere* surveys). Thus the rather *apolitical* agreement on innovation strategy has been identified as one of the strengths of the Tampere Centre of Expertise (CoE). While the connections between the two are indeed very close, as are the working methods, the funding structure naturally differs, as in the CoE, basic funding only

amounts to a few percent (less than the 6 % average of all CoEs) while the share of business financing is by far the largest among the Centres of expertise as a whole (over 50 %). The analysis of strengths and weaknesses of the CoE programme and its methodology is actually quite revealing of the *eTampere* experiences as well: while the main ‘value added’ in bringing together and creating networks and project co-operation between different types of actors, the main challenges are perceived as being the still limited internationalisation (especially in terms of international technology financing, hence the focus of Framework Programme during 2003). As far as ICT is concerned, there is quite a well-developed knowledge cluster in terms of education and research (with a special focus on bringing together or seeking to bridge social science and technology), though significant room for improvement, in terms of the actual productive capacity and manufacturing, remains.

1.3.2 Partnership-based Regional Innovation System (RIS)

The advantage of broad-based co-ordination and steering applies to both CoE and *eTampere* while expertise is accumulated through tight networking of the key stakeholders. As networks and networking does not happen without encouragement it is important to have the right type of facilitators for these different types of co-operation. In most cases the main facilitator function is played by the programme management team (both in CoE and *eTampere*). This is where the attempt to bridge the different sides of the *triple helix* come into play, with research, public authorities and businesses being targeted equally. The main question of strategic importance here thus becomes one of personnel, as those acting as successful facilitators within the triple helix constellation necessarily need to have strong backing from their stakeholders, and need also to have access to credible and broad-based networks, both locally, nationally and internationally. While in the CoE context the main issue is one of having credible presence in both the business and the research communities, as well as functioning contacts to the public sector, it seems that one of the main issues within the *eTampere* context is that of finding personnel that have genuinely managed to bridge the gap between technology and the social sciences/humanities. As co-operation between these two areas has only begun to be seriously developed in recent years such persons tend to be few and far between. By strengthening the image and attractiveness of Tampere as a university centre however, *eTampere* has contributed to ensuring that suitable human resources are available for recruitment.

There are however a number of potential weaknesses within the broad-based co-operation structures and networks that provide the close links between the CoE and the *eTampere* initiative. On the one hand it became quite clear in both the survey and in the interviews that the polytechnics (and for that matter other educational establishments other than universities) are essentially absent from the *eTampere* networks and partnerships. Yet they could be used in project activities and also as a means of bridging more efficiently other than university educated citizens into the different Information Society interfaces. On the other hand *eTampere* is clearly a strategy for Tampere municipality, not Tampere region more generally (the functional regional around Tampere including the neighbouring municipalities). This may help to keep the initiative better focussed, though it may also mean that some co-operation embryos or potential measures for strengthening the Information Society and innovation strategy further are left unexplored.^{vii} However, regional spillover may be ensured by the involvement of stakeholders that are located on premises beyond Tampere itself, such as TUT and UTA.^{viii} This could ensure that some of the lessons drawn locally in

Tampere are better diffused by institutional means to other smaller urban centres across Finland.

The Centre of Expertise in Tampere has based much of its success on the strategic branding of areas of expertise and on the broad-based steering group that allows key stakeholders to come together on a regular bases. In many cases the same stakeholders are also central to the *eTampere* partnership, as the partnership ranges from the R&D sector to businesses and public authorities (especially in the areas of R&D and technology development).^{ix} In synergy terms *eTampere* can be seen to be one of the meeting points of CoE policies, as much of its activity involves many of the areas of expertise included in the CoE programme. Examples of such cases are part of the Tampere CoE brand, such as for instance Tampere Media City or Finn-Medi, which can be even more actively used to promote *eTampere* and CoE strategies and images as inter-linked wholes.

In addition to regional and local stakeholders there are a number of important actors, organisations and innovation resources that provide an interface between the Information Society (for the citizens) and the RIS (for the businesses and R&D sector). In this regard one could mention TEKES (the National Technology Agency), whose technology programmes are of specific relevance here (e.g. Oesch, Varesmaa, Nummenpää, Vuorimaa 2003).

The regional partnership model or cluster that *eTampere* encompasses is described below.

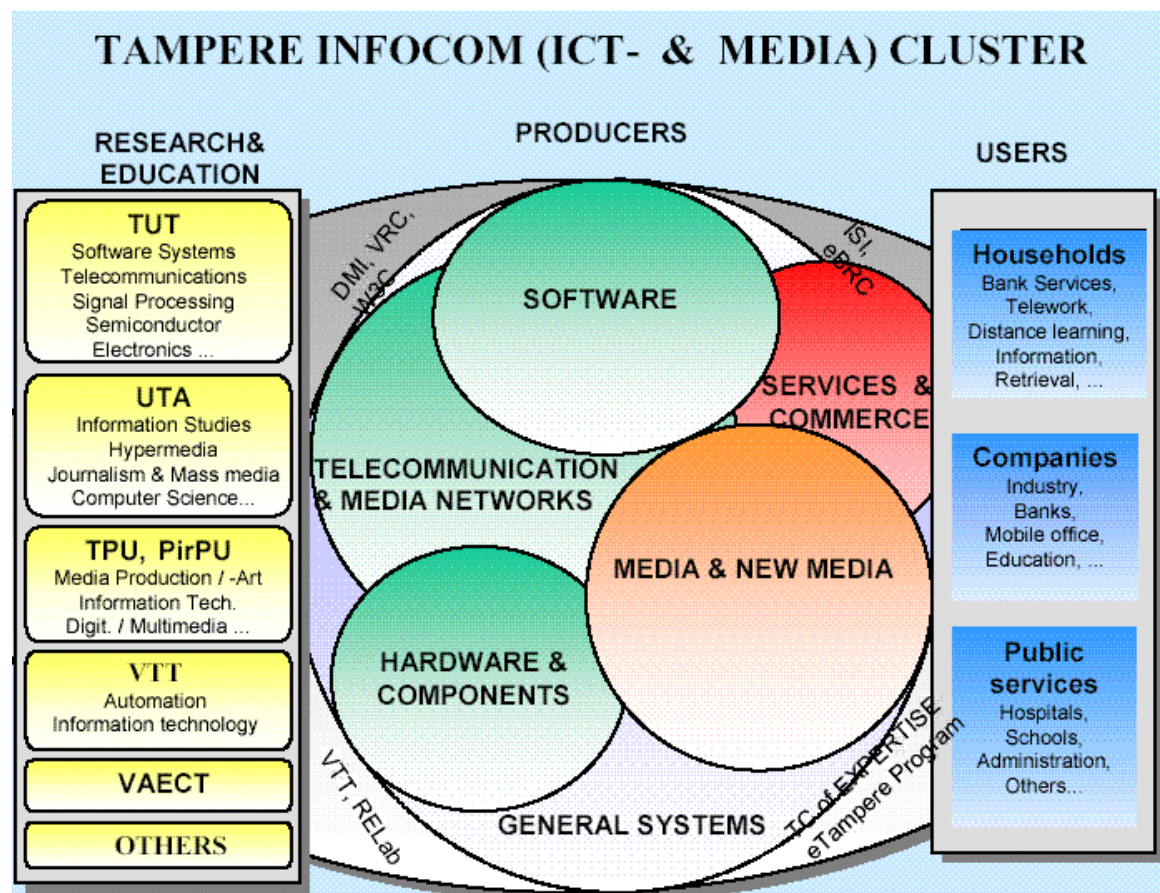


Figure 1.2 Tampere Infocom Cluster

(Source: eTampere)

The cluster picture is naturally strongly influenced by the available R&D resources and their utilisation, which are particularly instrumental in developing two of the eTampere core areas, namely e-commerce, technology development and the applications of the Information Society within eTampere. Here the evaluators have used data from LOGREGIS in order to chart the development of Tampere in relation to R&D and e-commerce, together with statistical data from Statistics Finland relating to R&D activity. Additional data relating to the distribution of financial resources between the different sub-programmes was provided by the eTampere office. Based on these sources we will make some tentative conclusions as to how the programme may influence the R&D sector, and what implications this impact may have for the Tampere RIS.

1.3.3 eTampere and the development of the R&D sector

The inventory of Information Society projects available through the LOCREGIS database (www.locregis.net) demonstrates that eTampere is one of the many current local initiatives to improve regional development by means of probing and introducing ICT measures in regional policy and related initiatives. The University of Tampere, Tampere University of Technology, Tampere municipality and Tampere Technology Centre Hermia hold positions as the principal partners and IS project owners, indicating that R&D-based activities remain at the core of Pirkanmaa IS activities.

The Locregis database provides data on 119 IS projects undertaken both in the 1994-1999 Structural Funds programming period and of the current 2000-2006 programming period in the Pirkanmaa region. For most practical purposes, this is more or less identical to that of the Tampere region as this is where most IS project owners have been and are currently located. From the sample of projects registered in the database, the focus of Tampere IS projects appears to maintain a strong focus on e-commerce/business life and on e-learning/vocational training in ICT applications. It should however be noted that the Locregis project inventory is not completely up to date, as registering new projects is voluntary.

R&D projects are in particular being undertaken in partnership with other academic institutions outside of the Tampere City region. Indeed, R&D partnerships see the Helsinki University of Technology figuring most prominently. IS-projects thus contribute to a deepening of the relationships between major academic institutions in Southern Finland.

These opportunities to provide for the cross-sectoral fertilisation of business ideas and knowledge diffusion are essential in improving the institutional thickness of the Tampere region, a regional associative trait that has been much lauded abroad (Antiroiko 2000, Kostiaainen et al. 2002, Martinez-vela et al. 2002, Schienstock et al. 1999). The eTampere initiative carries the strategy of building institutions and social capital one step further, although the node functions are still delimited to a selected few core R&D institutes and HEIs.

Both the ICT and the communications clusters in Tampere have seen a significant broadening of their membership base in the last five years. From 1998 to 2000, the

ICT cluster gained some 2000 employees, while the communications cluster gained some 130 employees (Statistics Finland, Ministry of the Interior 2003). Most of the new firms that entered the local clusters were small enterprises. From 1998 to 2000 Tampere gained some 80 ICT firms with less than 10 employees, while the number of ICT firms with between 10 and 49 employees increased by 21.

Similarly, the number of small firms in the communications industry (viestintä) increased by some 100 enterprises, while the number of firms in the communications industry with between 10 and 49 employees increased by 10.

Thus, in the three years from 1998 to 2000 the Tampere ICT and communications clusters experienced a net gain of almost 250 enterprises.

Much of the growth in these industries emanates from increased R&D activities. The growth in the ICT and communications industries correlates with a significant increase in the level of local R&D spending in the same period. In 1995 some 189 million € was spent on R&D in Tampere (Ministry of the Interior 2003). Five years later, R&D expenditures in Tampere had more than doubled to some 606 million € (nominal values). The relative amount spent on R&D in Tampere compared to the total national spending on R&D at the same time increased from 8.7 % of the Finnish total to 13.7 % of the Finnish total. Thus, Tampere is slowly moving towards a more central position in the national innovation system.

Perhaps even more significant has been the recent development of Tampere economic region's (seutukunta) share of patents in the ICT and electronic components sector. In 1998, 15 % of all such patents issued in Finland were issued to patent holders in Tampere (ibid). Two years later, this share had increased to 19 % of all such patents issued. Clearly, the combined ICT and Communications cluster is gaining a stronger footing in this Finnish inland city.

1.4 Description of the *eTampere* model

1.4.1 Background

The partnership model described above is indicative of the triple helix dynamism behind the initiative and also of the close connection between the Tampere innovation system (RIS) and the information society. Another way of describing the initiative would be to re-construct the story of *eTampere*, which in itself is indicative of the high awareness of image aspects of the activities involved and the need to brand Tampere region. The development of IT capability is also of interest here, helping us to think of the objects or recipients of policy measures in novel ways: not only servicing businesses or providing services to the citizens of Tampere, but also seeking to address both business-to-business and business-to-consumer service needs, while connecting more closely the societal and business/technology aspects of service provision. This is in the view of this evaluation also where the main challenges lie: striking a balance between these different sides is still not an easy task.

Though we can see that there is a certain degree of symbolic politics being played out here^x, the story behind the introduction of the *eTampere* initiative is however one of strategic planning and far-sightedness that cannot be denied. The initiative was in the early stages strongly clustered around some of the key persons involved in the overall development of the Tampere RIS. As was indicated by many interviewees during the

interview phase of the evaluation, there was a feeling of a certain pressure to 'do something big' in order to make Tampere more successful as an ICT-oriented urban centre. As is often the case, the tradition had been to build infrastructure and buildings that would somehow symbolize the on-going dynamism of the urban centre. Yet this was seen as an insufficient approach to reflect the needs of the ongoing 'paradigm shift' from growth aspirations within traditional industries and from a strict technology-society division into a more integrated or holistic way of thinking. Thus it was seen as necessary to 'build something that would invest in people's minds' and to allow for a holistic approach to strategic planning. Political commitment (on the part of the city of Tampere and its key decision-makers and civil servants) was perhaps the most decisive factor in the early stages, as a virtual network is unlikely to be able to finance such a vision and therefore the commitment and financial backing of the city became decisive in order to get the programme 'up and running'. It can of course be asked whether at a later stage the share of public funding should be diminished and external private funding should be made available to take its place. We will return to this question in the conclusions.

The story of *eTampere* as it was told by the actors involved in the early stages and even those who had become involved in the programme implementation at a later stage was full of enticing metaphors, ranging from buildings (*ice-hockey rink*, *sauna* or even a *Guggenheim museum*) to a vehicle (to get to a new place in terms of citizen involvement in IS development). One additional metaphor that comes across very clearly as the organizational model is analysed more closely is that of an umbrella, as this is how *eTampere* and its sub-programmes are organized in a more or less loose network of actors and activities under the shelter of the common umbrella. Hence to understand the story and where it is taking those involved (and how it can be better steered in case the direction moved along is not the desired one).

Behind the launch of the *eTampere* initiative in 2000 was the realization that some type of a new policy initiative was required in order to strengthen the positive development of the Tampere ICT cluster and to ensure that technological development does not bypass the citizens. The initiative came from a variety of sources, as a result of a number of brainstorming sessions between some of the key stakeholders in the Tampere ICT cluster.^{xi} It is obvious however that there are longer-term forces at play behind the programme set-up, such as for instance the whole innovation policy focus that became crystallized in the introduction of Tampere Centre of expertise in 1994, as well as the planning process for the renewal of the old industrial premises in the Finlayson area. When the *eEurope* initiative was launched this type of approach was quickly seen as one way of introducing new aspects of ICT development into the region, with special focus on citizens and on the need to bridge the technology side of ICT with the social and societal aspects of the Information Society. The initiative was also seen as a possible boost to the attractiveness and competitiveness of Tampere region, which was felt to be still suffering from its 'traditional' industrial image. (The different priorities and goals are returned to in connection to the survey results.) The programme was thus drafted with the support of Tampere City, which was willing to provide the major share of funding (770 million FIM for the period 2001-2005).

This equates to a funding commitment of € 650 per inhabitant for the 5-year period. This is a level equal to similar IS projects funded by ERDF and ESF in previous and

current Finnish and Swedish structural fund programmes (www.locregis.net, Tsipouris et al. 2002, Tsipouris 2003).

eTampere was thus organised as a programme focusing on three main themes, ranging from technical capabilities and access to more content-related issues:

1. The availability of public online services
2. Strengthening of the knowledge base of research and training in the ICT-related fields;
3. The generation of new business related to the Information Society

In order to pursue these policy goals a set of modules or sub-programmes were launched that attempted to bridge the technological and social sides of the dynamism providing a basis for developing on-line services based on existing research and innovation activities. The sub-programmes included: Information Society Institute (ISI); *eBusiness* Research Centre (*eBRC*); Research and Evaluation Laboratory (RELab); *eAccelerator*; Technology engine programs; Infocity and *eTampere* office. We will return to each of these in the next chapter on the governance of *eTampere*.

As the activities of the sub-programmes vary in the pursuit of the common strategy, it is important to identify and promote priority areas that can potentially bring the sub-programmes closer together. The focus areas for 2003 have been identified as:

- Active, participating and influential citizenship (i.e. Increasing opportunities for influence and participation, *eTampere* card, New possibilities for communal spirit and operation).
- Developing expertise and business development (i.e. *eTampere* business service, Mobile technologies, services and content).
- Development of service innovations (i.e. Support for and development of service processes with information and communication technologies; Customer-oriented approach, active customer base, multifarious production).
- Increased in-depth international cooperation (i.e. Sixth Framework Programme; St Petersburg cooperation).

The idea of having focus areas in order to follow strategic development more closely and to address specific needs that can be shared by the different sub-programmes seems to be positive. In the survey and interviews the focus areas were not identified as particularly central to strategy attainment however, though the themes as such were seen as important.

One of the focus areas within the implementation of the initiative during 2003 has been that of internationalisation, which is pursued in close co-operation with the Tampere EU-office. The extent to which internationalisation has been pursued as a horizontal theme throughout the initiative will be one of the main questions addressed by this evaluation, as well as addressing the specific measures targeted at internationalisation, outlined in the strategy for 2003. As the indicators for internationalisation were quite general (visibility, evaluation, international projects), suggestions will be made as to a more systematic monitoring of the degree of internationalisation.

The objectives set for 2006 need to be evaluated as to their feasibility. These more long-term goals on the macro level have been identified as:

1. Creation of 20 new enterprises with net sales of FIM 1.5 billion, 1,500 personnel, and external capital of FIM 300 million
2. Lowering the city's unemployment rate by five percentage points
3. Multiplying the number of jobs in the ICT cluster by 2.5 and in the communication cluster by 1.8
4. Obtaining international visibility for Tampere as a recognized and appreciated centre of research and teaching in the field of Information Society and *eEconomy*.

The four objectives set for 2006 are pitched at the macro level. A direct and immediate causal relation between the project results of particular *eTampere* project activities and overall regional performance, as set out with these objectives cannot as yet be anticipated, given the general nature of the long-term goals. At best such relations can only be expected to appear with a time lag and indirectly.

As such, a number of problems emerge that should be dealt with during the next few years of programme implementation. The fact that indicators such as those set here cannot be assessed in an interim evaluation is clear enough and the quantitative impacts of the programme should be addressed after programme implementation has concluded (i.e. in 2007-2008). We would also like to consider the need to identify such indicators for the sub-programmes and the entire initiative that would better reflect the impact of the governance model based on the thematic sub-programmes. Instead of macro level indicators a more micro-level approach would perhaps be more useful, especially if one wishes to develop evaluation and monitoring as an internal learning process, as was indicated in many of the interviews.

When considering the impact of the *eTampere* programme, the indicators used by the programme co-ordinators themselves will be used as the starting point, though the project will also aim at identifying new innovative indicators for the future. The results of the 2001-2002 period were identified in the programme reports as:

Number of projects: 11

Total volume of these projects: €19 million

- Financing from City of Tampere: €5,63 million

Projects in preparation:

- 11 proposals to the FP 6
- Other proposals: 3
- Pending funding decision: 2
- Total volume of project in preparation: €45 million

Partnerships:

- Project co-operation with all EU Member States
- Geographically evenly divided project portfolio, most popular partners Germany, Spain and Italy
- Co-operation with the following accession countries: the Baltic states, Czech Republic, Poland, Hungary, Bulgaria and Cyprus and non-EU countries (Norway, USA, Russia, Japan)
- Visits etc. more informal forms of co-operations with South-Korea, Singapore, New Zealand, India etc.

If one of these results or achievements should be identified as a specific priority area, this would undoubtedly be internationalisation and partnership development. Though *eTampere* can improve the visibility of sub-programmes and by so doing improve the possibilities for obtaining funding for projects and thus increasing the project portfolio and activities further, it became clear in the evaluation that most of the R&D activities would have taken place even without *eTampere* and the main 'value added' is thus to be found in the concrete ways in which the projects are implemented and in the fact that *eTampere* has created a new atmosphere for co-operation, a virtuous circle of partnerships and a new understanding of the necessity to achieve cross-sector co-operation and closer ties between the technology and the humanities and social sciences.

1.4.2 The eTampere governance model and organisational structure

The governance model of *eTampere* in itself provides an interesting case study of differentiated policy measures under the umbrella of a local initiative most actively promoted by the City of Tampere. The City of Tampere clearly has a special position, though it is also worth noting that the centrality and complementary role of the various sub-programmes become obvious in the analysis of financial resources available for *eTampere*, as well as in the nature of the project activities themselves. Ideally the different sub-programmes would work in unison and address similar policy goals through differentiated means and this in fact largely seems to be the case, based on the evaluation presented here. While for instance the business accelerator sub-programme is instrumental in attracting private capital to new enterprises, the *eBRC* provides those essential settings that are required to promote IS-initiatives, which stem from both the social and the natural sciences and where such shared projects then can meet and prosper. ISI on the other hand seeks to promote research into the Information Society almost through a programmatic and broad-based research approach on the various attributes and side effects of the Information Society. What is at the core of the programme is the need to accumulate and utilise systematic and reliable scientific information on the development and the different aspects of the information society, and this is where the different sub-programmes meet. Some sub-programmes may be bodies needing such information to identify the main needs of citizens in the face of the drastic changes currently unfolding in society and in the so-called New Economy (e.g. Infocity), while others may be seeking to influence the economic trends in the IS sphere through business promotion needs (*eAccelerator*) or testing concrete technology applications (*ReLab*) and thus seeking to follow the latest development in technology without which the more normative and political aspects of the Information Society would not find concrete form. The way in which these different aspects come together is through the project orientation of the programme.

The organisation of *eTampere* is influenced by the fact that the City of Tampere has such a central role, as well as by the fact that the co-operation and co-ordination of the two universities involved determine much of the organisational structure. Project culture is also strongly present and as is the case with similar initiatives elsewhere, also in Tampere the typical programme model today determines a great deal of programme management practice. The project cycle methodology consists of the six-step structure described below.

The six stages of a programme cycle:

1. *Programming*: Setting the priorities, timetable etc.

2. *Identification*: Problems, needs and interests of stakeholders are identified for further appraisal (of feasibility, relevance etc.)
3. *Appraisal*: Relevance, feasibility (re:financing)
4. *Financing*: Decision made on project (/programme) funding
5. *Implementation*: Mobilisation of resources to implement the plan and seek to achieve the goals set
6. *Evaluation*: assessing the results, success rate and impact (in order to reach a decision on what to do next; i.e. whether to continue, rectify or stop a project/programme) etc.

As the programme has been developed at least for the time being as a 'one off', the project cycle model is not immediately visible, though it seems to have influenced the set-up of the programme. The fact that the beginnings of the programme were not started with programming, but rather with a more general exercise of identifying the needs and identifying potentially relevant activities and policy models made the planning quite different from the basic programming model. As the willingness or the initiative really came from the City of Tampere, the specific point where financing was identified was also unusual. In the future more attention could be given to the project cycle model, however and the fact that evaluation exercises are undertaken in different forms is in itself an indication of this. The project cycle is of no intrinsic value rather its instrumental value lies in the sharper focus and attention given to strategic thinking and long-term planning, as well as the need to develop efficient monitoring mechanisms that can then be useful for the further implementation of the strategy.

Not only is the initiative a case in point as far as project culture is concerned, but it is also a good example of a co-operation and cross-sector initiative. This is also visible in its governance structure, which has undoubtedly contributed to the most important advantage of the programme: namely that a stable co-operation culture can be said to have evolved among the institutional stakeholders, independent of the sub-programme to which they belong or are responsible. This may be the most positive long-term investment made. In addition, Tampere has come some way to developing a high-level knowledge society. Here the co-operation aspects are also important, as it seems that changing institutional behaviour has been instrumental in breaking down sector barriers and developing IS. In almost all the interviews carried out the value added of enhanced co-operation and the central importance of 'everyone knowing each other' and what could be termed, social capital, was brought up. Institutional thickness and social capital resources can however at times be accompanied by problems of institutional stickiness, with 'everyone knowing each other' thus allowing for relatively little leeway in terms of breaking old behavioural patterns or creating novel problem solving mechanisms.

Here also the issue of funding comes into focus. The proliferation of the project culture within the R&D sector in general and universities in particular have had a major impact on the ways in which universities work. The funding models have however not always reflected the perceived need to achieve cross-sector or barrier-breaking funding models and new ways of thinking also among the funding institutions. While traditional universities, such as Tampere, receive a large share of their research funding from the Academy of Finland, the University of technology and VTT receive their funding from TEKES, making it rather difficult to achieve the interdisciplinary working mode desired in funding terms. As such, there is a strong need to break with this

pattern. It was argued by many of the interviewees that this is however not as yet the case. It was further argued that when applying for EU funding the *eTampere* 'label' is an asset, while with TEKES it is best to keep a lower profile. It would seem that though it is indeed a long process to promote inter-disciplinary co-operation forms between technology sciences and social sciences/humanities, the co-operation efforts are further dampened by the attitudes of the funding institutions. (Some indications of change in this respect are emerging however, as for instance a recent TEKES report would tend to suggest, Ahlqvist and Honkanen 2002).

Programme level organisation involves three main units or entities: *Steering committee*, *working group* and the *eTampere office*.

The task of each of these governance units is related to the way in which contacts are created between the programme and its sub-units, as well as to the triple helix mode of organisation. While the steering committee has representatives from the R&D sector, businesses and public administration, and has a more strategic role in setting priorities and providing guidance, the role of the working group is more 'hands-on', with managers of the sub-programmes being involved in the work. As the working group meets once a month, its members also have the advantage of being able to keep up with the developments in the other sub-programmes through the regular meetings that take place. The reliance on key personnel however is obvious, since the *eTampere* office has a small staff responsible for various co-ordination functions. As they act as a link between the sub-programmes, as well as providing the programme with an identifiable face to the outside, their role is important especially in terms of facilitator and communications functions.

1.4.3 Sub-programmes

The form according to which the governance of *eTampere* is organised necessitates close and actively pursued co-operation between the different sub-programmes. Yet it also makes it difficult at times, as the organisational structure is deeply embedded in the existing institutional cultures and barriers (this issue will be returned to in the survey section). The organisational model of each of the sub-programmes is briefly introduced in the following, with some observations as to how these organisational models have presented themselves in the evaluation.

In terms of the project portfolios and funding profiles the whole programme did better than the set objectives in 2001-2002. Some quantitative indicators as to project portfolios of the respective sub-programmes are also provided in what follows. These are based on the monitoring system provided by the *eTampere* office.

Information Society Institute (ISI)

The Information Society Institute (ISI) is a joint effort by the University of Tampere and Tampere University of Technology. The University of Tampere however has operational responsibility, as the unit is placed 'under its wing', in line with the contract establishing the institute between the University of Tampere and the City of Tampere in spring 2001. There is a board of directors whose task it is to steer the institute, with approximately 10 members; its membership predominantly represents the two universities involved, though there are some key external stakeholders (from the business world). The central function of the Institute is to conduct and promote research on themes related to Information Society and to pursue collaborative efforts between the two universities. It also has a role in prioritising the different research themes around

IS development, especially through its flagship project selection mechanism, which allows for concentrated efforts in some selected priority themes rather than scattering the resources too thinly.

The mission statement of the institute clarifies the objective of the institute as being, 'to promote the construction of an Information Society based on active citizenship through multidisciplinary research and development activity and through education and training' (ISI 2001).

One of the central aspects of the Information Society Institute is the Information Society Observatory (ISO), which is a research unit launched by the Information Society Institute in June 2002 with the financial support of the City of Tampere. The main objective of the Observatory is to promote and conduct systematic social research related to the Information Society and information technology. The question of scales or levels of analysis is particularly central to the Observatory's work, just as it is to our evaluation exercise. This is quite easy to understand when one considers that Information Society, just as with ICT and technology development, not to mention policy instruments addressing citizen participation, are necessarily local, regional, national and European, as well as global (though more indirectly in evaluation terms naturally).

The ISO has a layered structure divided into three main components: education, research and network, where the network is the interdisciplinary national network of researchers representing several institutions from various geographical locations and with different research interests. The ISO promotes the co-operation of these units by developing forms of co-operation such as knowledge exchange, by creating joint funding applications and organizing meetings in scientific seminars. In addition to the networking aspects of ISO's work, it also engages in education and knowledge dissemination activities, organising masters-level thesis seminars in co-operation with a number of different University departments from the faculties of social, information and administrative sciences, as well as seeking to identify and develop both the more traditional means of knowledge dissemination, such as printed publications, books and journal and novel forms of communication such as web-portals and e-broadcasting.

- Basic funding (2002): 189 000 €
- Terminated projects (2002): 7 projects, with a total budget of 335 892 €
- On-going projects: 35, with a total budget of 4 531 270 €

eBusiness Research Centre (eBRC)

The task of the eBRC is to bring together the two universities in Tampere, as it was co-founded by them and as such, eBRC functions as a joint venture that is expected to bring 'value added' to both of the partners (and to the external stakeholders).

eBRC seeks to turn e-business related research and development ideas into new knowledge, with its mission being outlined as

... to generate relevant new knowledge on selected business phenomena related to the e-business, which can be utilized in the education and research activity by the partner universities and in the business practise by the businesses participating in the underlying research projects. The objective of eBRC is to become one of Europe's leading e-business researcher centres by 2006.

The method by which this task is achieved is through matching the interests of the different stakeholders from the academic community with various industrial partners, with a view to moving from domestic co-operation partners to international ones. The model has been called that of a ‘matchmaker’ or facilitator and is also more generally typical of the kind of initiative that *eTampere* encourages.

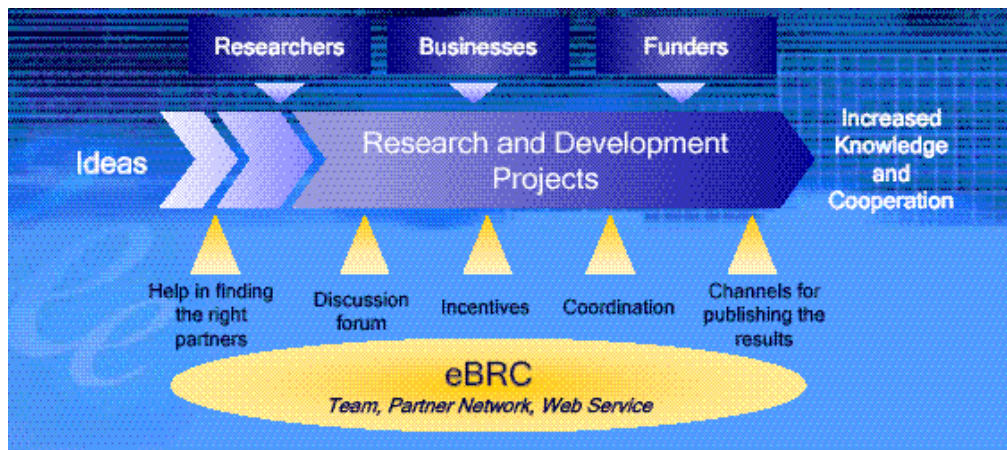


Figure 1.3 eBRC working model
(Source: eBRC)

The organisational structure is also similar to the other sub-programmes, with a broad of directors responsible for strategic steering, two programme managers (one from each university) being responsible for the every-day functioning of the centre and being assisted by a small staff of project managers/assistants. The light organisational structure again here seems to be an advantage, though it does also put more pressure on key personnel, making it necessary to consider ways of improving organisational learning that would allow for knowledge to be more successfully embedded in the organisational structure, rather than relying on the personal contacts and the accumulated knowledge of the key personnel.

- Basic funding (2002): 420 470 €
- Terminated projects (2002): 6 projects, with a total budget of 716 973 €
- On-going projects: 25, with a total budget of 2 070 541 €

Research and Evaluation Laboratory (RELab)

RELab (Research and Evaluation Laboratory for Intelligent Services) is a laboratory and testing environment situated in Tampere, which has been included as a sub-programme in the eTampere programme. The responsibility for RELab lies with the Tampere premises of VTT, the Technical Research Centre of Finland. The fields of activity include services for mobile users; risk management of future services; human-computer interaction and road-mapping new and emerging technologies. The future direction of RELab lies in particular in international collaborative projects such as those within the EU's Sixth Framework Programme.

- Basic funding (2002): 252 282 €
- Terminated projects (2002): 2 projects, with a total budget of 269 000 €
- On-going projects: 13, with a total budget of 2 274 139 €

eAccelerator

The eAccelerator Programme is located at the Tampere technology Park (Hermia), where it aims to incubate and 'hatch', by 2005, a total of some 20 companies as globally successful technology companies. The quantitative goal set consists of personnel

growth in these companies to 1500 employees and turnover figure of 250 Meuro. It is the objective of the programme that each year 5-6 new companies join *eAccelerator* through the national search programme.

- Basic funding (2002): 336 376 €
- Terminated projects (2002): 1 project, with a total budget of 4250 €
- On-going projects: 3, with a total budget of 5 859 376 €

Technology engine programmes

Technology engine programmes are co-ordinated by the Digital Media Institute at the Tampere University of technology. The mission of these programmes is to create knowledge and expertise in the Tampere region in the areas of adaptive software components, user interfaces, the perception of information, 'neoreality' and broadband data transmission. Each field is managed by a programme manager, who seeks to create new projects in his or her area of responsibility, in close co-operation with specialists in the field working in business or research.

The goal of Technology engine programmes during the programming period of *eTampere*, i.e. by 2005 is to have a project portfolio totalling a turnover of 19 million euros, and with approximately 100 researchers working in these projects in Tampere region.

- Basic funding (2002): 252 282 €
- Terminated projects (2002): -
- On-going projects: 28, with a total budget of 3 244 109 €

Infocity

Infocity is the one of the *eTampere* sub-programmes that is most visible to the ordinary citizen. The mission of the sub-programme is

...to develop the city of Tampere into a model of Information Society by offering its citizens practical online services and by improving their network skills.

This mission is implemented through the active development of digital services provided by the City of Tampere to its citizens. In addition to generating digital services with practical applications, the Programme aims at providing every resident of the City with access to these services. The Programme is an open cooperation project within the public administration as well as between the administration, private operators and the third sector. Perhaps the best-known project within Infocity's portfolio is that of the *eTampere* City Card, which seeks to develop a multi-application, dual interface smart card system providing key Informational Society services. The project is co-ordinated by Access International Consulting Oy Ltd. VTT (Technical Research Centre of Finland) is providing additional technical consultant support. The pilot project was run during the first half of 2003 with a 'test-bed' of local students. Gradually the smart card will be offered to all citizens, with the distribution goal being 100 000 units, or 50% of the city's population.

- Basic funding (2002): 1 025 946 €
- Terminated projects (2002): 13 projects, with a total budget of 209 767 €
- On-going projects: 22, with a total budget of 1 016 696 €

2. Strategic analysis and benchmarking: Integrating urban ICT policies with Information Society initiatives

2.1 Introduction

The implementation of new technologies may be regarded as an effort in terms of municipal policy to involve citizens in the working of the city and to promote the local economy. Information Society initiatives can be used to project a vision of socio-economic change in order to mobilize the available local resources using existing and emerging social networks. Quoted in van den Besselaar et al. (2000), the 1996 mayor of the French town of Parthenay put it this way:

The challenge of the digital city is to reinvent the city. It is a fantastic opportunity to propose new public services, to promote a new and creative partnership among local actors and reinvent the governance of the city for a better democratic public sphere in the city.

When *eTampere* representatives say that the aim of the initiative is to eventually rid the projects of their *e-* prefix, this signals the same attitude. The Information Society provides the means and the context for accomplishing a profound change in the fabric of Tampere's society such that it can accommodate a more robust regional development. The new technologies provide the means, but introducing innovative ICT applications in public administration and civic society are not objectives in themselves.

2.2 Perceptions of urban ICT policies

Tampere is not the only European city seeking to reinvent itself by merging industrial and innovation-promoting initiatives. Van der Meer and van Winden (2003) recently published a study of urban ICT policies in the European cities of Barcelona, Eindhoven, Manchester, The Hague and Venice. All of these cities are regional centres, though none of them are national capitals. Adding Tampere to this list the evaluators have used the questionnaire responses in order to interpret the governing content of the *eTampere* initiative. The cities differ significantly in their priorities in improving electronic service provision. To put it crudely, in this particular yet limited field the *eTampere* initiative best resembles the policies of The Hague.

Table 2.1: Local ICT content policies in six cities

Governing content	Barcelona	Den Haag	Eindhoven	Manchester	Tampere	Venice
Bringing existing public services on-line	**	**	*	*	**	*
Create new integrated web products	**	*	0	**	0	*
Create mobile content	0	*	0	0	0	0
Create or promote local on-line communities	0	**	*	*	*	0
Help local SMEs with introduction of e-commerce	*	*	0	*	*	*
Implement e-democracy concepts	0	*	*	*	**	0
Help/promote grass-roots organizations to go on-line	0	*	0	*	0	0

Note: **: strong policy effort, *: modest policy effort, 0: no policy

Modified from van der Meer and van Winden (2003), table 2

As in the van der Meer and van Winden study, the evaluation here has based the assessment of the *eTampere* initiative on studies of policy documents, interviews with key policymakers and a questionnaire survey of a selection of local stakeholders.

Lately, numerous comparative studies of urban ICT policies have identified a city's position in the national urban hierarchy as being of significance in determining how local ICT strategies are constructed and maintained. Being a provincial and not a national centre makes a big difference when cities seek to develop an ICT clustering policy. The national capitals tend to take a national lead in the ICT industries for granted, and do not make systematic efforts to engage the public sector authorities in such an industrial development drive where private sector organisations are at the helm. In second-tier cities, such as Tampere or Oulu, identifying ICT-related activities as the foundation of municipal rebirth calls for the more concerted involvement of local and regional authorities. ICT clustering does not come automatically to such locations; rather it has to be effectively fostered.

This is particularly apparent in the Nordic countries. Van der Meer et al. (2002) dub this the 'Nordic capital growth model', where ICT clustering is characterised by an

initially strong development of industry champions. This is followed by a significant improvement of the ICT image of the national capital, followed by a third consolidation phase that attracts foreign investment as well.

These findings have recently been confirmed in several studies by Cohen et al. (Cohen, van Geenhuizen and P. Nijkamp 2001, Cohen and Nijkamp 2003, Cohen-Blankstain, Nijkamp and van Montfort 2003). In these related studies, Cohen and associates set out to describe and test the relationships between perceptions of the city, policy makers' beliefs about ICT and the associated urban ICT policies.

The cities can be arranged in several different clusters, depending on the predominating perceptions of the relationships in these four areas:

- Cities having many urban functions (provincial centres, university centres).
- Cities with severe bottlenecks (traffic congestion, housing shortages).
- Cities suffering from socio-economic problems (unemployment, industrial decline, ageing population).
- Cities where ICT will affect the future prospects of the city positively and significantly.

Building on a vast material base encompassing the perceptions and beliefs of the several hundred respondents involved in the formulation of urban ICT policies (urban 'front liners') in different European countries, Cohen et al. find that the respondents that perceive their city as having many urban functions (commercial centre, service centre, HEI centre) have a higher awareness of the various ICT tools than do those that perceived their city to suffer from major socio-economic problems. Respondents that believe that ICT will affect the city and its administration positively tend to attach a high municipal influence on ICT, and consider many ICT initiatives as relevant. In such a context, *eTampere* is an arrangement designed 'to take Tampere from c. to a. by way of d'.

Helten and Fischer (2001) report from the TeleCityVision project, where the perceptions and attitudes of administrative actors and urban politicians in 170 European cities were examined. For the 76 German cities in the sample, the highest levels of ICT acceptance were found for politicians and economic experts. Differences in the organisation of the professional *milieus* within the city administrations were also found to have an effect, as the different orientations concerning which type of ICT action to undertake to ensure a robust regional development is determined by the professional orientation of the urban decision-makers. In Germany, open-minded political visionaries have to combat normal administrators that are 'more sceptical of new ideas or of innovations' (Helten and Fischer 2001:3). Helten and Fischer also found it astonishing how seldom public private partnerships played a role in the implementation and funding of municipal ICT projects, although these groups are in the forefront of the information process.^{xii}

It thus seems that an inclusive approach to ICT is related to a positive vision of the city that incorporates private as well as academic stakeholders— an interpretation that can be drawn from the *eTampere* questionnaire survey as well (see chapter 3 for a more detailed presentation).

2.3 Local costs and benefits of IS initiatives

But then – which types of ICT measures should a municipality choose to apply in order to implement a successful ICT policy?

The potential costs and benefits of various IS initiatives have very different characteristics. Bauer et al (2002) have argued that some benefits, such as more effective procurement or reduced costs for health care services, are essentially private goods that can be fully internalised by the users. Other benefits, such as ICT services in business or science parks can be seen more as club goods that benefit only a selected few stakeholders and will only be supplied if that group acts collectively. Many of the R&D projects initiated within the *eTampere* programme have such characteristics.

Finally, some benefits may be thought of as pure public goods that accrue to the Tampere community as a whole. Attempts to integrate ICT applications in tandem with the imposition of increased *e-governance* in the city of Tampere have such characteristics.

Table 2.1: Cost-benefit profiles of various *e*-initiatives

		<i>Benefits</i>		
		<i>Local</i>	<i>Regional</i>	<i>Global</i>
Costs	<i>Local</i>	e-government	e-learning	e-learning
	<i>Regional</i>		Telemedicine	Telemedicine
	<i>Global</i>			e-commerce

Source: Bauer et al. (2002)

Overall, the *eTampere* IS initiative appears to focus on activities that have a predominantly local cost-benefit profile. In a questionnaire survey, the respondents rated Tampere's *e-government* initiatives to be relatively more advanced than the local *e-learning* and *e-commerce* initiatives when compared to other Finnish cities. Although several stakeholders have voiced strong motivations for probing projects that have more of a regional or even global cost-benefit profile, the legitimacy of the *eTampere* initiative is enhanced by maintaining the public sector, *e-governance* focus. This may also be the case in the early stages of the implementation, as *eGovernment* can be used as an instrument in rallying public support for the more specialised, expertise-driven Information Society measures. Indeed, decisions that are related to initiatives whose cost and benefits are local in scope, such as those related to *e-government* are most efficiently promoted by local stakeholders that try to co-ordinate their activities. *eTampere* may prove to be instrumental in such an effort by providing an arena for such integrative efforts.

In terms of the general level of local co-operation and innovation, several local studies emphasize the significance of proactive public authorities and efforts to brand the Tampere region as a knowledge-based economy (Schienstock et al. 2000, Kostiainen and Sotarauta 2002, Martínez-Vela and Viljamaa 2003). The systematic institutionalisation of the knowledge economy in Tampere is presented in Kostiainen and Sotarauta (2002: 22), who also pay *eTampere* a brief visit, identifying it as a development programme aimed at developing Tampere into 'the world's leading researcher, developer and applicator of the Information Society'. No minor ambition.

2.4 Positioning eTampere in a European context

Comparing the perceptions of ICT by 130 ICT ‘front- liners’ in 27 Dutch cities with 24 respondents involved in the eTampere programme, we can see that some significant differences emerge:

Table 2.3: Perceptions of ICT by urban ‘front-liners’ in the Netherlands and in Tampere. Percentage of all who agree or agree strongly with the statement

	Netherlands (2001) %	Tampere (2003) %
ICT will change the policy-making process in our municipality	92,8	56,5
ICT improves communication within our city administration	85,3	87,0
ICT improves the ability of our city administration to serve its citizens	96,9	91,7
ICT improves citizens’ access to useful information	99,2	79,2
ICT gives the administration better access to public opinion	83,8	66,7
ICT will increase citizen participation in the policy process	67,0	85,7
ICT increases the gap between rich and poor	50,0	19,0
ICT enables people to get better access to professional services without living in a city / central Tampere	91,3	65,2
ICT enables people to have better access to urban cultural life without living in a city / central Tampere	83,7	26,1

Dutch responses rate 1 and 2 on a rating of 1-4. Tampere: rates 1 and 2 on a rating of 1-5.
Modified from table 1 in Cohen, van Geenhuizen and Nijkamp (2001)

All of the respondents in the Dutch survey came from cities with more than 100 000 inhabitants. As the scales used in the two surveys differ with respect to the number of categories applied, the results are not directly comparable. One simple observation may, however, be drawn:

As evidenced in the table, in Tampere great expectations are put on the potential for ICTs to increase citizens’ participation in the (public) policy process. At the same time the Tampere respondents to a lesser degree expect that the ICTs will really change the policy-making process in Tampere. This could be interpreted to reflect the peculiarities of local policy-making in Tampere with stable political alliances and a selected few leading politicians who set the local political agenda. As such, although ICT may enable, it should not be expected to determine future policy-making.

In addition, service provisions are not expected to span the effect of physical distance to the same degree as in the compact-living Netherlands. In Tampere, access to services is still expected to be determined more by geographical proximity than by improved access and adoption of communication technologies.

2.5 The citizens' perspective and democracy

When we consider the nature of the role of the citizen and the ongoing changes to this role – in the light of ongoing technological innovation and more developed electronic methods for public participation – we must take note of structures (infrastructure, decision-making and governance models applied) and agency (the mobilization, motivation and activity of the citizens). The assumption here is that while technological advance may provide the citizens with new forms of mobilization and participation, it is up to the citizens themselves (and the decision-making methods and communication channels between the citizens and the decision-making apparatus) whether these are used. It can be argued that the structures are largely in place in terms of both infrastructure and legislation (e.g. Valtioneuvosto 2002, Ryyänen 2002, Heinonen et al. 2000), though the agency side of the coin does perhaps need more attention. The desire to strengthen democratic participation and decision-making through technological means is only one aspect of *eGovernment*, as the national (and local) politico-administrative culture plays a role.

Finnish political culture could perhaps be considered particularly consensus-oriented and mono-cultural, though some indications of more variations in terms of social movements or political participation models also exist. As an example of the small regional differences in citizens' participation we can however look at the voter turnout figures over the 1990s and into the early 21st century. Though there are traditionally minor differences across constituencies, in that rural areas have a slightly higher turnout, the changes in voting behavior both between regions and across the 10 years period are actually rather small. This could be taken as an indication of the fact that, as citizens, the Finns still follow quite traditional patterns, i.e. see political participation for instance mainly in terms of voting in elections.

Table 2.4: Voter turnout in urban municipalities in Finland

CONSTITUENCY	2003 TOTAL	URBAN CENTRES	1999 TOTAL	URBAN CENTRES	1995 TOTAL	URBAN CENTRES	1991 TOTAL	URBAN CENTRES
Whole country	69,7	69,5	68,3	67,6	71,9	71,4	72,1	70,6
Helsinki Region	73,9	-	70,3	70,3	72,7	72,7	70,6	70,6
Turku Region	70,7	69,9	68,8	68,0	74,1	73,7	73,1	72,0
Tampere Region	69,8	69,8	68,9	68,6	72,7	72,3	71,9	71,4
Jyväskylä Region	67,7	68,2	67,5	67,3	71,4	72,1	73,1	72,4
Oulu Region	67,9	67,2	67,4	65,6	70,5	69,9	72,9	70,3
Lapland	69,7	67,0	69,7	66,9	72,1	71,1	76,0	74,2

The survey section will return to the question of the possibility of changing decision-making structures and methods and will suggest that the expectations of achieving such changes through initiatives such as *eTampere* seem limited, even in the eyes of the 'technology elite'. Yet, there are indications that Tampere has put additional effort into creating new, Internet-based forms of participation and has aimed at thus activating the citizens. These themes are also visible in the published urban strategies (e.g. City of Tampere 2001), where the vision of Tampere again emerges as a City with a 'well-developed and sustainable Information Society as well as being a City of Expertise', the emergence of which is based on 'initiative, broad-based networking and regional co-operation'.

Tampere has been active in providing such portals and services on the Internet for the citizens that could engage them more actively in what could be called 'public minded activities' in electronic form.^{xiii} Nevertheless, the likelihood remains that these forms of participation are most often used by those who are also the most active users of other forms of electronic participation.

What is also relevant here is the availability of the electronic forms of participation available to the citizens. According to surveys undertaken in Tampere, both the local politicians and residents wish to see an expansion of these services, though at the same time it is acknowledged that there are a variety of such forms already available. The Infocity sub-programme was responsible for a three-fold survey of *e-government* and governance in 2002 (consisting of a survey targeted at local politicians, statistical survey and an Internet survey) and some of the key conclusions of the findings (Sepälä 2002) were identified as follows:

- 1-3 % of the residents of Tampere who visit the homepage of City of Tampere do this in order to influence public affairs.
- Possibilities of participating through the electronic services available are 'very' or 'quite' interesting to 36 % of all residents of Tampere in the age-groups between 15-74.
- Differences between age-groups in terms of optimism regarding the possibilities of influencing public affairs through electronic means was the highest in the youngest and oldest age groups.
- Utilising the possibilities for participation through electronic means in Tampere City predominantly serves the interests of those who are active Internet users, 25-34 years old and live in the centre of the city; Women are more interested than men.
- Internet users were most interested in contacting civil servants as a means of influencing public affairs, others believed more in contact with politicians.

These findings seem to support the assumption that those that use the Internet most actively tend also to be interested in forms of public participation through electronic means. Thus, in order to pursue a more broad-based policy for activating citizen involvement in electronic forms of participation the less Internet-literate groups may need more activation and attention. Making electronic forms of participation part of the every-day practice of citizens, de-mystifying it in the process is thus an important means to this end. Indeed, this has however already been addressed by creating public discussion forums and making the political decision-making process as widely available on the Internet as possible (Kivekäs et al. 2002). Electronic participation should

naturally not replace other forms of participation, especially as even those citizens who actively use electronic forms of participation and involvement in public affairs tend to see this as an additional form, not one replacing personal contact. The reasons for this are to be found both in the view that personal contact is valued for its own sake^{xiv} and in the fact that confidence in electronic forms of decision-making and participation is still lacking (e.g. Virtanen 2002, 39) Moreover, the survey results discussed in chapter 3 support this relative skepticism.

3. *eTampere* seen ‘from the inside’: the survey results

The evaluators posted a brief electronic survey to *eTampere* project managers and steering group members in June 2003. In total, 52 persons were sent a questionnaire consisting of nineteen questions related to current co-operation and contact patterns between the different *eTampere* modules and the centrality of various agents in setting programme objectives. In addition, the respondents were set several questions related to the perceived performance of the *eTampere* initiative thus far. They were asked to assess qualitatively a diverse set of statements related to the usefulness and impact of the *eTampere* initiative, as well as to provide the evaluators with some input on their opinions on various Information Society initiatives in general. In this way, the evaluators have sought to locate the *eTampere* initiative with respect too similar urban IS initiatives in Finland as well as abroad.

The questionnaire is enclosed as appendix A.

In total, 24 responses were obtained, yielding a net response rate of 46 %. The responses emanated from twelve informants working in institutions of higher education (HEIs), three representatives of local or regional public authorities, five representatives of the local business community and four employees of the *eTampere* administration itself.

The questionnaire responses were grouped into three different sets: HEI employees (twelve respondents), non-academic stakeholders (eight respondents) and *eTampere* administrators (four respondents). Rather than aggregating HEI and non-HEI responses for a simple and balanced comparative analysis, it has been deemed better to treat responses from the *eTampere* administrative personnel separately.

All *eTampere* sub-programmes were represented by more than a single questionnaire respondent. In addition, six of the respondents reported to be in a capacity to respond to questions on more than one module/sub-programme. Thus, the module input amounted to more than 24 respondents. The highest number of responses was received from *eTampere* representatives (employed or elected), while the least number of respondents were recovered from *eAccelerator*, *ISI* and *Infocity*.

Table3.1: Distribution of responses by module

Module	No. of responses
Technology engine programmes (TUT/Digital Media Institute)	7
Research&Evaluation Laboratory, RELab (VTT)	5
<i>eBusiness</i> Research Centre, <i>eBRC</i> (TUT, UTA)	6
<i>eAccelerator</i> (Tampere Technology Centre Ltd)	4
Information Society Institute, <i>ISI</i> (UTA)	4
<i>Infocity</i> (City of Tampere)	3
<i>eTampere</i> bodies	12

On average, the respondents claimed to represent 1,7 modules each (41/24), reports varying from being on behalf of one to on behalf of all modules.

3.1 The eTampere programme administration

The respondents were given a number of statements on the programme organisation and administration. Representatives of institutions of higher education (HEIs), the local business community and public administrations (Adm/Bus) provide similar assessments of the eTampere operations. Respondents from the eTampere administration (eTampere) identify only a few of the added value items as relevant for their own operations, or rather: they tend to disagree with many of the statements. As the subject of inquiry, this should come as no surprise.

Table: Proportion of respondents who agree with the statements

Statement	ETampere %	HEIs %	Adm/ Bus %	TO- TAL %
'eTampere is well administered'	75	75	75	75
'The administration of eTampere should be slimmed down'	none	8	13	8
'eTampere has created forms of useful co-operation that would not otherwise have taken place'	100	67	88	79
'eTampere has brought about quantitative changes that most probably would not have taken place without it'	50	50	63	58
'Most activities would have taken place even without the eTampere initiative'	none	25	25	21

The two last statements are pure contrasts, and graphically illustrate that the responses are consistent. Several other control statements that display the same consistency have been omitted from the display. See appendix A for a complete listing.

In the following, descriptive statistics are presented as the average ratings of eTampere, HEI and Business/Administration representatives. As several of the respondents were unable to rank statements, or did not respond at all to some of the questions, this means that group averages may have been calculated from as little as three respondents. Average values should therefore be treated as indicative, rather than as determinate and interpreted accordingly.

Those currently involved in the eTampere operations regard the initiative as well administered and as a contributing factor in new forms of co-operation. However, with such a limited number of respondents and such general statements the results should be interpreted as merely indicative. Complementary insights are provided by responses to the remainder of the questionnaire.

3.2 Co-operation and contact patterns between the sub-programmes

The respondents were asked how often they were in contact (formally or informally) with people from the different modules. Incorporating contacts within the same module as oneself, technology-oriented modules such as eAccelerator and TUT/Digital Media Institute are most central, while eBRC and ISI maintain a more peripheral role.

In the figure below, average contact frequencies are ranked with 1 being daily contacts and 3 being monthly/occasional contacts.

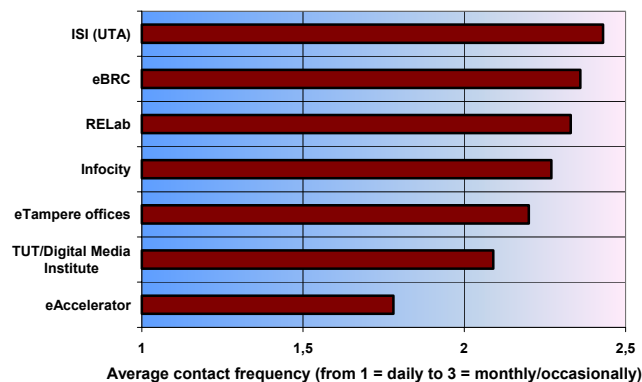


Figure3.1: Average frequency of formal/informal contacts with modules

In addition, the respondents were asked about which of the sub-modules they co-operated with the least and the most closely with. The respondents, and HEI representatives in particular, reported that they co-operated least with RELab, with *eAccelerator* coming a close second in this regard. *eBRC* and the *eTampere* offices were the least peripheral in this respect – no one indicated that they did not co-operate with these modules in one way or another. *Infocity* came out as being integrated close to the average.

On top of the ‘co-operation wish –list’ (which of the sub-programmes the respondents envisaged more co-operation with) were *ISI* and *Infocity*. Taking the number of respondents that mentioned the module as the most wanted (for future contacts) minus the number of respondents that mentioned the same module as the one they currently co-operate with the least provides us with a crude contact balance for each of the modules. If the balance comes out on the negative side, there is currently a low potential for integrating the module with other *eTampere* activities. If the balance comes out with a positive value, there is a significant potential for integrating the module’s activities with other parts of the *eTampere* initiative.

This crude balance yields that *RELab* and *eAccelerator* currently have a low integrative potential, while *ISI* and *eBRC* have the largest potential for activities as they are perceived as being beneficial to other modules as well:

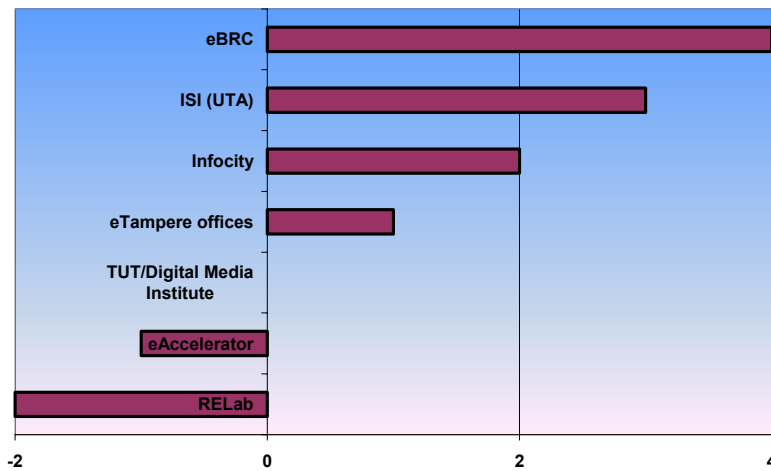


Figure 3.2: The current integration potential of eTampere modules

Thus far, we have presented the respondents' perceptions about the position and potential of other modules. At the institutional level, the city of Tampere and TUT are identified as the most central partners in the setting of the objectives of the eTampere programme, a second tier of institutions being made up of Tampere Technology Centre, UTA and VTT. Least central are the polytechnics, non-local centres of expertise and neighbouring municipalities. The respondents were provided with multiple-choice alternatives:

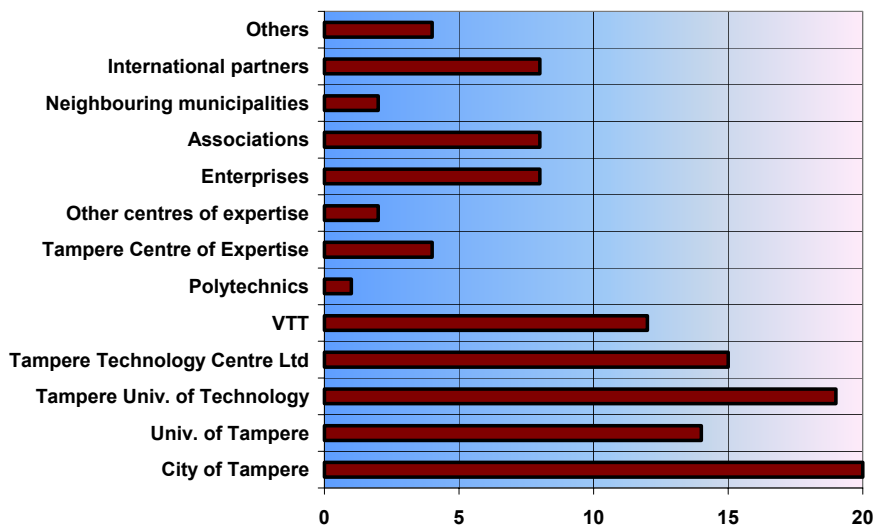


Figure 3.3: Most central partners in setting eTampere objectives by number of responses (n=24)

3.3. The usefulness and impact of the eTampere initiative

The informants were asked to rate the usefulness of the eTampere initiative on a scale of 1 to 5, where 1 rated eTampere as being very useful, and 5 rated eTampere as being least useful. On average, the usefulness rating recorded was 1,75 – a useful measure. An exception here were the eTampere administrators who univocally rated the usefulness at 1. Representatives of the local and regional authorities displayed a more sceptical stance, rating the initiative as 'average' in terms of its usefulness, with an average rating of 2,33.

Ranking the usefulness of various components of the *eTampere* initiative, the respondents were harmonious in identifying ‘improving co-operation between local institutions and organisations’ as the most enabling factor in determining the usefulness of the initiative. At the next level, there was some disagreement between the different stakeholder groups. HEI representatives identified improved national and international visibility as the second most important factor, while representatives of the local business and public sector authorities instead forwarded improved economic competitiveness as the more instrumental component:

Table 3.1: Most important factors for the usefulness of eTampere by number of respondents (multiple choice)

Statement	ALL	HEIs	Bus/Adm
Added quality and access to relevant information ...	9	2	3
Improved national and international visibility	13	7	3
(Improved) economic competitiveness	13	6	6
Making Tampere into a ‘model city of the knowledge society’	5	2	2
Improving co-operation between local institutions/organisations	19	8	7

In the table above, the difference between columns 2 and 3+4 is made up of the unaccounted for responses of the four *eTampere* administrative respondents in the sample. As can be gleaned from the table, they diverge from the priorities of the HEI and Bus/Adm respondents by putting a higher value on improved access to relevant information in electronic form.

The local stakeholders have a range of different means to meet the priorities mentioned above. When asked to rate three of the most important means, services and enabling official electronic transactions came out on top and were mentioned by half of the respondents. From a list of 14 different means no other factor was identified by more than eight respondents.

Overall, the respondents in the sample identified public interests/stakeholders as the beneficiaries of the *eTampere* initiative compared with private interests/stakeholders on a ratio 2:1. Within the different subsets, there were natural systematic differences. HEI representatives ranked public/private interests as the main beneficiaries on a 5:1 ratio, while the business and public sector communities held a more balanced 1:1 view on who eventually will benefit from the *eTampere* activities.

3.4 The qualitative and quantitative aspects of eTampere achievements thus far

In the figure below, the achievements are listed such that the achievement receiving the lowest appreciation on average (IS Observatory) comes on top of the figure, and the achievement receiving the highest average appreciation (and the lowest score) appears at the bottom of the figure. While there is strong agreement between the three groups (HEI, Bus/Adm and *eTampere* representatives in putting the IS Observatory as the least significant achievement so far, the three groups display some disagreement

as regards how to rate investments in the local business community. This appears to be less appreciated at the HEIs, who focus more on training initiatives.

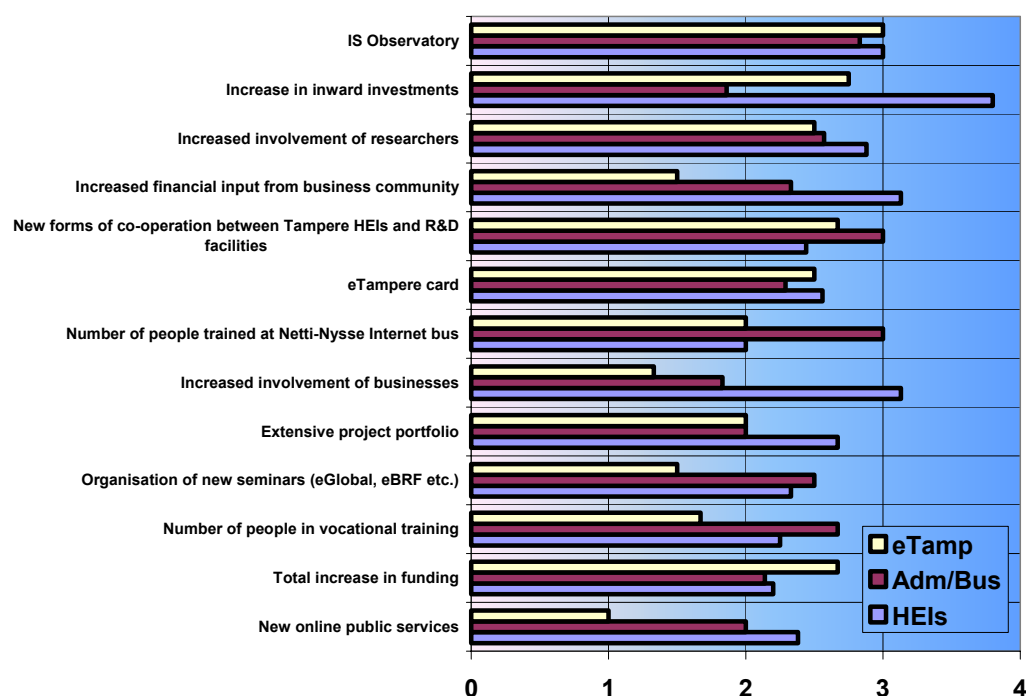


Figure 3.4: HEI, Adm/Bus and eTampere average ratings of achievements thus far (with 1 most important; 5 totally irrelevant)

In the above figure, the values of the horizontal line indicate the average rating of HEI, Adm/Bus and eTampere respondents. A low average value indicates a high rating, and vice versa. The lowest (e.g. best) score is achieved by the item 'new online public services/Infocity', followed by 'total increase in funding' and 'number of people in vocational training'/'organisation of new seminars'.

Rather than focussing on the absolute values, a better insight is achieved by focussing on the internal ranking of the various achievements in the three groups. The three groups diverge on which achievements are appreciated the most. At the HEIs, the number of people trained at the Netti-Nysse Internet bus is ranked as the most significant achievement followed by the total increase in funding and the number of people in vocational training. Representatives of the business and local/regional public authorities rank the increased involvement of businesses as the core achievement so far, followed by the extensive project portfolio and the establishment of Infocity. The eTampere administrative personnel correlate the top priorities with the businesses and public sector representatives rather than the respondents coming from the academic or R&D institutions.

3.5 General attitudes to Information Society initiatives in Tampere in particular

Out of the focus areas set for 2003, the respondents were asked to identify those areas that they perceived as being most important. The development of innovations in services and business development received most support, while attempts to promote activities in civic society and initiatives to promote international co-operation received less support.

When asked to identify the implications of the Information Society for Tampere, the respondents were confronted with various statements related to the introduction of eEurope, regional development issues and the Information Society.

The items on eEurope (4 statements) focussed on the economic growth potential of ICT under the general heading of e-learning, e-government, e-commerce and e-Europe, while Information Society items (3 statements) mentioned IS explicitly. Regional development items (4 items) did not mention hard technological issues, but were instead used to ventilate issues such as competence building and social security.

It is evident from the responses that in the context of eTampere, the regional growth aspect is in the forefront while socio-economic re-distributional objectives are deemed more or less irrelevant for the eTampere initiative. These can be found as the least significant implications at the top of the figure below. In the figure, moFc's is an abbreviation for 'most other Finnish cities'.

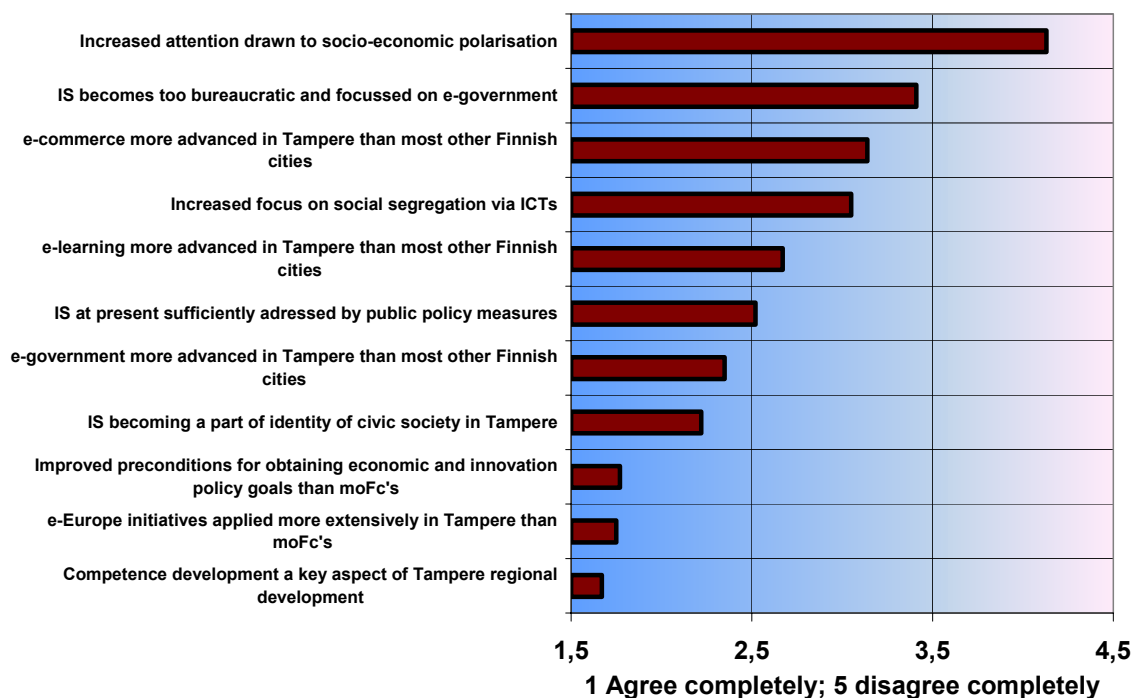


Figure 3.5: Implications of the Information Society for Tampere – rating the significance of statements on eEurope, regional development and IS

3.6 ICT cluster building in Tampere: obstacles in local implementation efforts

The respondents were asked to assess various statements related to the disadvantages of Internet applications. The statements focused on the administrative benefits for the city of Tampere (2 statements), and on the effect of the Internet on the functioning of civic society in general (8 statements).

Overall, making information more accessible and cost-saving aspects for the city administration were ranked as the most advantageous effects. While HEI and Bus/Adm were in unison on their ranking of the main advantages, eTampere personnel took a more positive civil society stance in identifying the Internet as instrumental in making

political decision making more transparent. In the figure below the statements are presented in increasing order of significance. Overall, least support was given to the civic society-statement ‘current issues can be discussed in more detail’, while the respondents agreed on ranking ‘information more accessible to citizens’ as most advantageous.

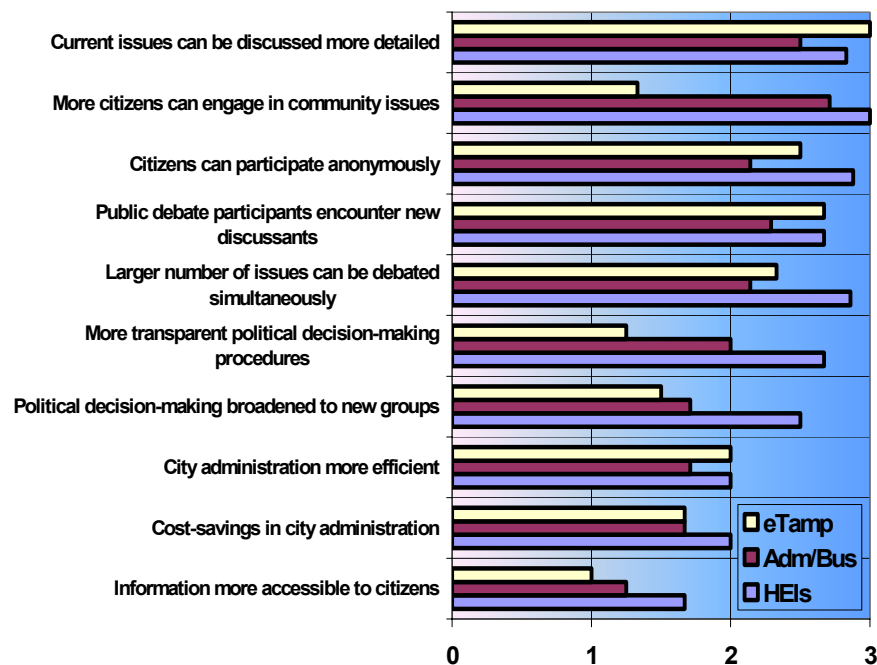


Figure 3.6: Advantages of Internet applications

The respondents were asked to assess various statements related to the disadvantages of Internet applications. The statements focused on the quality of interactions (4 statements), and on whether ICT enables new groups to take part in the public discourse (4 statements). The rapid pace of technological change was identified as the main obstacle by the Adm/Bus and eTampere respondents, while HEI respondents appreciated the superior quality of face-to-face interaction as the main disadvantage of communication over the Internet.

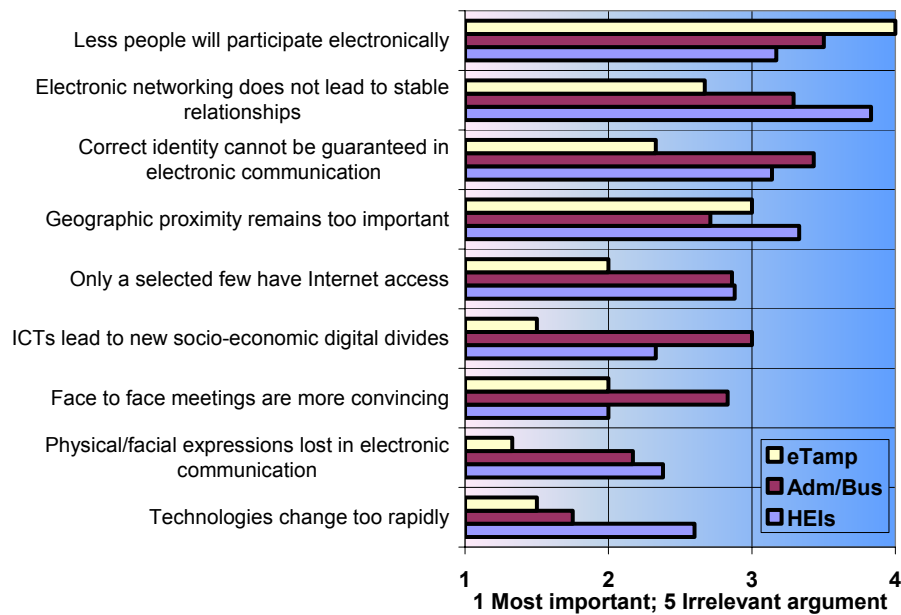


Figure 3.7: Disadvantages of Internet applications

All three groups had ranked statements related to both items (interaction quality, enabling dimension) among the three main hindrances to improved Internet applications.

In addition, all respondents were asked to assess various statements with respect to the role of ICT in local public administration (3 statements), ICT in the evolution of civic society (6 statements) and ICT and the development of public services (4 statements). These rankings confirm the general attitudes reflected in figure 3.8.

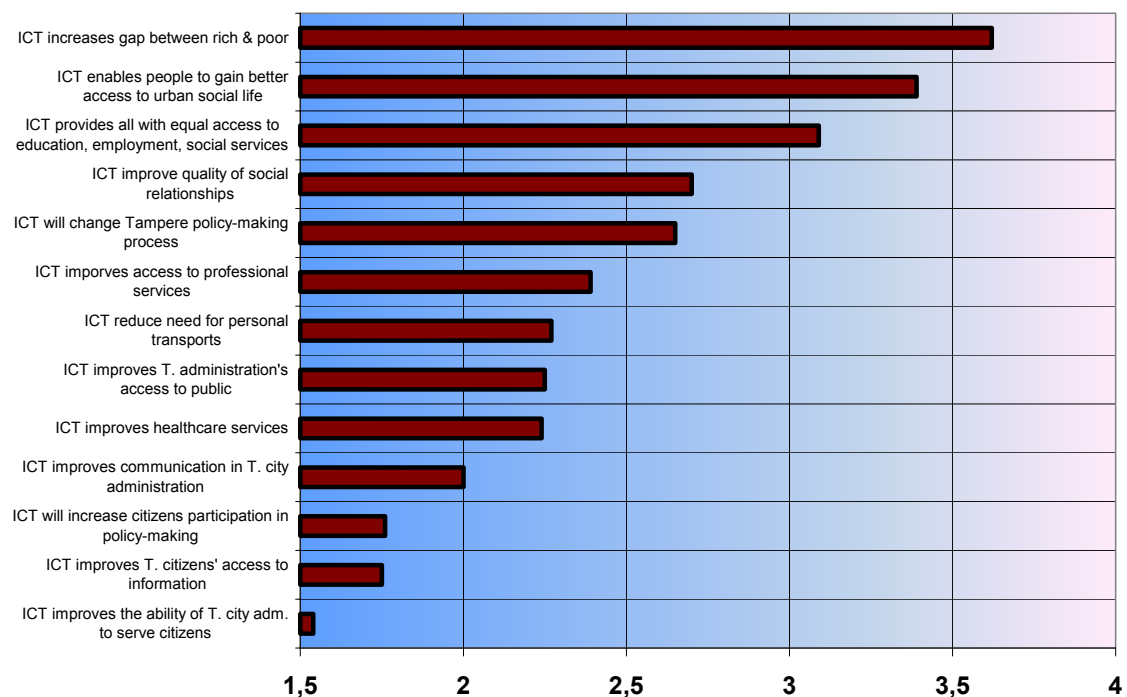


Figure 3.8: Personal opinions of ICT implementation in Tampere

While all three groups held strong views on the potential for ICT to improve the efficiency of public administration, HEI respondents were the only group that ranked the impact of ICT in improving public services as one of the main benefits. Overall, it seemed that the respondents held civil society issues to be more essential.

4. Conclusions and policy recommendations

Usefulness of the initiative

Conclusion

It can be argued on the basis of the evaluation presented here that, as a public policy initiative, *eTampere* has been successful in implementing the selected policy measures designed to achieve its goals. Goals that were set in accordance with the wider European approach (as outlined in the *eEurope* strategy) towards Information Society development. The key goals of (1) making municipal services available online and (2) ensuring that as many of the citizens of Tampere as possible have access to them, whilst also (3) developing the aspects of Information Society other than those attached to *e-government* i.e. strengthening the Regional Innovation System (RIS) within the ICT sector (ranging from the R&D sector to the businesses and the public authorities involved) is well under way, though the final outcome cannot be seen as yet. There are indications that *eTampere* has however now been successfully integrated into the wider sphere of innovation policy (e.g. based on survey results), though the clustering aspects of *eTampere* (i.e. the creation of new businesses, business ideas and applications for Information Society development) can only be seen in a wider perspective. As long as the monitoring system is not further developed in line with other policy instruments for the pursuit of similar policy objectives, it is difficult to assess whether certain developments within the urban region or the RIS are due to *eTampere* or to some other policy instrument addressing similar objectives.

Recommendation

The monitoring system of the RIS should be developed side by side with the monitoring of *eTampere*'s project portfolio, and such indicators should be developed that better reflect the needs and successes of the micro level (/sub-programmes). Indeed, this should take precedence over concerns with the strategically important though essentially vacuous macro programme level. This can best be achieved in close co-operation with Hermia, Tampere's technology Park, which has significant experience with similar monitoring issues.

Value added for networking and co-operation

Conclusion

The Tampere region seems to be well endowed in social capital and networking, as well as in the institutional thickness that makes networking both easier and more stable. Yet *eTampere* is not the only policy instrument that has ensured the proliferation of different co-operation forms and therefore it may be useful to ask what makes *eTampere* special and what exactly is its value added in relation to other local and regional innovation policy instruments in the region. It is argued here that this value added is most visible in the interdisciplinary aspects of *eTampere* and in the gradual paradigm shift that this may entail (towards a more holistic and multi-disciplinary approach to Information Society).

Though the interdisciplinary and cross-sector 'value added' is seen as one of the main advantages of the programme even now, these themes are to be pursued further. The interface between the technological sciences and the humanities and social sciences should be developed further. Ideas such as the creation of Tampere business school or perhaps some closer constellation of the two universities, even going as far as a

merger, or alternatively the setting up of a faculty combining technology and the social sciences, should all be seriously considered. Social technologies, applications within medicare (eHealth etc.) are particularly interesting in this respect. ISI seems to be a particularly useful tool in developing this interface further. The role of the polytechnics should also be addressed more effectively, if the initiative is not to become a mere twinning exercise between the University of Tampere and Tampere University of technology. Integrating the polytechnics more closely in programme implementation could also help to ensure the better coverage of the whole educational and industrial scale, which could be of value in itself in the implementation of the Tampere innovation strategy.

Recommendation

As previously argued, in addition to the positive 'institutional thickness' of the Tampere region we can also detect a certain extent of a level of 'institutional stickiness.' This can make such organisations quite rigid and slow to learn (and as such equally slow to incorporate the paradigm shift or new ways of thinking in relation to the information Society where democracy, policy, technology and the economy are all seen as interdependent). Policy-making processes and eGovernment should be developed in ways that address this 'institutional stickiness' and the social and cultural rigidities that it entails. A lot has already been done here to improve the accessibility of Information Society measures among the citizens, but further attention should be directed towards ensuring that Information Society measures are also accepted, indeed embraced, in the public sphere.

The impact of eTampere on the different aspects of Information Society development and on ICT applications

Conclusion

At times it has proven to be difficult to cater to the needs of ordinary citizens, businesses, technology-related R&D institutions and Tampere municipality and its civil servants and politicians (among others) all at the same time. In some fields there is yet further untapped potential to combine these different interfaces (eHealth for instance, as well as new media applications).

While it is clearly necessary to integrate the different aspects of Information Society development in order to achieve results in the strategic areas identified for the programme, this is obviously not an easy task. The increased awareness of Information Society measures and the interconnectedness of their technological, social and economic aspects has been developed in a consistent way, but more shared projects between the sub-programmes should be identified. In order to better engage the business community. Moreover, the Chamber of Commerce and other industrial organisations should also be involved more closely.

Recommendation

The steering group and programme management team should be set certain targets for the inclusion of different sub-programmes, as well as developing ways of involving the SME's themselves in order to ensure that their needs are the starting point of projects rather than relying too heavily on public sector initiatives.

Organisational learning

Conclusion

Monitoring and evaluation exercises can be developed further on a regular basis, more as an instrument of organisational learning and internal evaluation than as an external exercise, possibly concentrating more on 'bench-learning' than 'bench-marking'. Monitoring of the impacts here could be developed as a programme-specific exercise or further co-operation could be developed between the Centre of Expertise and eTampere. In addition to macro indicators more project-specific micro indicators should also be developed.

Recommendation

Clear bench-learning cases should be identified and studied further in a more participatory evaluation process.

Funding eTampere's activities

Conclusion

In some sub-programmes the programme has perhaps been over reliant on public funding and particularly on the funding provided by the City of Tampere. While the commitment of the City of Tampere has been essential in launching the programme, during the second half of the programming period more attention should be given to technology funding and private investment as a source of long-term financial resources in order to ensure the commitment of the whole range of Tampere RIS. Internationalisation should also be first and foremost addressed as a funding question, as the utilisation of European R&D funding should be developed much more fully.

More attention should also be given to bringing together the different funding institutions and organisations, in order to achieve more genuinely interdisciplinary co-operation. This may however be more of a national level issue than merely one for eTampere.

While the existence of a wide range of technology projects independently of eTampere is positive in that such projects are likely to outlive any single policy measure and be firmly embedded in the RIS, the role of TEKES for instance was, at times, seen as being rather indifferent to eTampere.

Recommendation

More attention should thus be given to shared projects that can use a variety of funding sources. TEKES and other technology funding sources on the one hand, and regional resources on the other, are very unevenly distributed and this 'funding problem' should be developed more actively into the creation of future opportunities, as UTA and TUT co-operate in project activities (e.g. 6th FP). The role of TEKES often seemed independent of that of eTampere, as much of the project portfolio of TUT or VTT for instance was developed largely independently of eTampere.^{xv}

Internationalisation

Conclusion

Though at times it was argued by the interviewees that *eTampere* is probably better known in Brussels than in Finland, there is still a lot of untapped potential as far as internationalisation is concerned. There is significant international interest in the experiences gained during the *eTampere* process, and serious thought should be given to how to market this more actively and to attain concrete advantage from it. At the same time the identity-building aspects were identified as one of the advantages of the programme, i.e. the Information Society became one of the elements of citizens' identity in Tampere. This could also be further developed by concentrating further on the local content for the Information Society.

Recommendation

A clear strategy for internationalisation should be developed as part of the attempt to integrate the different sub-programmes further. Networking and international image building could thus be developed in a more consistent and goal-oriented fashion.

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Seppo Haataja, Nokia Mobile Phones

Appendix A: Survey questionnaire

General questions on co-operation

1. Which module/sub-programme do you base your opinions on (/have most worked with)?

- a) Technology engine programmes (TUT/Digital Media Institute)
- b) Research & Evaluation Laboratory, RELab (VTT)
- c) eBusiness Research Centre, eBRC (TUT, UTA)
- d) eAccelerator (Tampere Technology Centre Ltd)
- e) Information Society Institute, ISI (UTA)
- f) Infocity (City of Tampere)
- g) The eTampere programme as a whole

2. Programme organisation and administration, added value of the initiative: Which of the following statements do you agree with?

- a) eTampere is well administered
- b) The administration of eTampere should be improved
- c) The administration of eTampere should be 'slimmed down' (administratively, *tulisi keventää hallinnollisesti*)
- d) The administration of eTampere should be less project-based
- e) eTampere has created forms of useful co-operation that would not otherwise have taken place (specify/name examples)
- f) eTampere has brought about quantitative changes (new jobs, businesses, number of students etc.) that most probably would *not* have taken place without it
- g) Most of the activities would have taken place even without the eTampere initiative

3. How often are you in contact with the following...? (Formally or informally)

- ☐ Technology engine programmes (TUT/Digital Media Institute)
- ☐ Research & Evaluation Laboratory, RELab (VTT)
- ☐ eBusiness Research Centre, eBRC (TUT, UTA)
- ☐ eAccelerator (Tampere Technology Centre Ltd)
- ☐ Information Society Institute, ISI (UTA)
- ☐ Infocity (City of Tampere)

4. Which module have you co-operated with LEAST?

- ☐ Technology engine programmes (TUT/Digital Media Institute)
- ☐ Research & Evaluation Laboratory, RELab (VTT)
- ☐ eBusiness Research Centre, eBRC (TUT, UTA)
- ☐ eAccelerator (Tampere Technology Centre Ltd)
- ☐ Information Society Institute, ISI (UTA)
- ☐ Infocity (City of Tampere)

Why? _____

5. Which module would you most like to co-operate more closely with?

- a) Technology engine programmes (TUT/Digital Media Institute)
- b) Research & Evaluation Laboratory, RELab (VTT)

- c) *e*Business Research Centre, *e*BRC (TUT, UTA)
- d) *e*Accelerator (Tampere Technology Centre Ltd)
- e) Information Society Institute, ISI (UTA)
- f) Infocity (City of Tampere)
- g) *e*-Tampere office

Why? _____

6. Programme participation – how long have you been participating in *e*Tampere activities?

- a) More or less since the beginning
- b) For over a year
- c) Less than a year

7. Programme partners – which of these are most central to achieving the set objectives? (Specify in the space provided)

- a) City of Tampere _____
- b) University of Tampere _____
- c) Tampere University of Technology _____
- d) Tampere Technology Centre Ltd _____
- e) VTT _____
- f) Other educational establishments _____
- g) Centre of Expertise (in Tampere) _____
- Other Centres of Expertise _____
- h) Enterprises _____
- i) Associations _____
- j) Surrounding municipalities (other than Tampere) _____
- k) International partners _____

Are there organisations or actors who are not included amongst the programme partners but should be?

Which? _____

Usefulness and impact of the initiative

8. How useful do you think the *eTampere* initiative is? (From 1-5, 1 being very useful, 5 being least useful) _____

9. In assessing the usefulness of *eTampere*, what factors are most important?

- a) Added quality and access to relevant information in electronic form for the citizen
- b) Visibility of Tampere nationally and internationally (improved status, attractiveness)
- c) Economic competitiveness
- d) Achieving the general goal of making Tampere into a 'model city of the information society'
- e) Improving co-operation between local institutions/organisations
- f) Other

10. Which of the means towards making Tampere into a 'model city of the knowledge society' do you find most important? (Max. 3)

- a) Online services
- b) Promotion of citizens' skills
- c) Public Internet access points
- d) Services
- e) Official electronic transactions (making an initiative and monitoring its progress electronically)
- f) Citizens' kiosk, discussion (www user survey, Infocity survey)
- g) The Tampere Children's Parliament, the Tampere Open Youth Forum
- h) ICT for early education
- i) 'Mansetori', participant's guide
- j) Power from the Rapids, interactive history service
- k) *eTampere* smart card
- l) Search service for rental accommodation
- m) Open job application form and Internet recruitment programme
- n) Appointed doctor and home help search
- o) Extensive library services (Tampere Region)
- p) Text message service, e.g. bus timetables
- q) Maps, road works online, city planning game

11) Who does *eTampere* profit most in your view?

(a)

- ☐ Public interests/stakeholders
- ☐ Private interests/stakeholders

(b)

- ☐ Citizens of Tampere
- ☐ City of Tampere
- ☐ Other public authorities
- ☐ Universities
- ☐ Polytechnics
- ☐ Other educational establishments
- ☐ Centre of Expertise

- ☐ Enterprises
- ☐ Associations
- ☐ International partners
- ☐ Those responsible for its administration
- ☐ Other (specify)

12. Special focus areas for 2003: which of these do you find most important (rate the sub-headings in order of relevance from 1-3, 1 being most relevant/important)?

- A) Active, participating and influential citizenship
 - Increasing opportunities for influence and participation
 - eTampere card
 - New possibilities for communal spirit and operation
- B) Developing expertise and business development
 - eTampere business service
 - Mobile technologies, services and content
- C) Development of service innovations
 - Support for and development of service processes with information and communication technologies
 - Customer-oriented approach, active customer base, multifarious production
- D) More in-depth international cooperation
 - Sixth Framework Programme
 - St Petersburg cooperation

13. Assessment of the achievements of eTampere thus far: which of the achievements of eTampere do you personally rate highest? (1-5, with 1 being most important and 5 totally irrelevant)

- a) The expanded and qualitatively developed project portfolio (Over 1009 projects in total, 30.7 million euros, realization rate 111.1 %)
- b) The increased funding within available for eTampere projects in total terms
- c) The increased proportion of financial input from enterprises and international sources
- d) The increased capital investment to Tampere region (exceeding 9.5 million euros)
- e) The increased number of researchers participating in the projects
- f) The increased number of enterprises participating in the projects (50)
- g) Information Society Observatory, which aims to produce high-quality social-scientific research on the information society
- h) 1 500 people trained onboard the 'Netti-Nysse Internet bus', almost 20 000 visitors
- i) More than 3 000 citizens trained with training funding
- j) eTampere card for public services
- k) New public online services provided for the citizens of Tampere through InfoCity
- l) New online services as measured in technological innovations

- m) The organisation of international and national seminars (*eGlobal*, *eBRF*, *Spearhead network seminar* etc.)
- n) New forms of co-operation between research and development organisations
- o) Other (specify)

Attitudes and opinions on ‘the Information Society’ more generally

14. What are, in your opinion, the advantages of participation via the Internet as compared to traditional participatory methods (voting, contacting the local politicians etc.)? (Rate in order of importance from 1 to 5, 1 being most important advantageous, 5 being the least so)

- a) Information is more easily accessible to citizens
- b) More citizens can engage in local community issues
- c) Procedures of political decision-making will be more transparent
- d) Decision-making can be extended beyond the usual ‘political elites’
- e) Citizens can participate anonymously
- f) A larger number of city-related issues can be discussed by a wider public
- g) Current city-related issues can be discussed in more detail
- h) Those participating in electronic forms of participation can interface with, and hear the opinions of people that they are not normally in contact with
- i) The administration has less work
- j) The administration can save money
- k) Other - specify

15. What in your view are the disadvantages of participation via the Internet? (Rate in order of importance, (1-5, with 1 being most important, and 5 being totally irrelevant)

- a) Networking in electronic form does not lead to stable or permanent forms of co-operation
- b) Geographic proximity is still too important for electronic information flows to be ‘borderless’
- c) A ‘real’ person in public meetings is more convincing
- d) Voice, facial expressions and gestures are a necessary part of a discussion and can be more informative than the actual substantive contents
- e) As present we do not have sufficient methods available to guarantee the quality and identity of those participating
- f) Less people than with traditional procedures will participate
- g) Technologies change too quickly in relation to administrative and political cultures
- h) Leads to more unequal participation patterns (e.g. as younger, wealthier and more ‘IT’-literate groups are likely to be over-represented)
- i) Only certain groups of the population have access to the Internet
- j) Other – specify

16. Information society is a concept that Tampere as a city has embraced more than many others in Finland or even in Europe – what does this imply? (Rate 1-5 in order of agreement, with 1 being agree completely, and 5 being disagree totally. Leave blank if you are unable to rate the statement)

- a) *e*-government is relatively more advanced in Tampere than in most other Finnish urban areas
- b) *e*-learning is relatively more advanced in Tampere than in most other Finnish urban areas
- c) *e*-commerce is relatively more advanced in Tampere than in most other Finnish urban areas
- d) *e*-Europe initiatives (ICT used for social/economic inclusion) are applied relatively more extensively in Tampere than in most other Finnish urban areas
- e) Competence development has become a key aspect of the development strategy for the Tampere region
- f) Tampere has enjoyed and benefited from a better set of preconditions in its attempt to achieve its economic and innovation policy goals than have most other Finnish urban areas
- g) Attention has been drawn away from the more important socio-economic issues (industrial renewal, unemployment, social segregation)
- h) Social segregation has been addressed via the new technology
- i) Information society has become too bureaucratic and too concerned with *e*-Government, rather than the other aspects of the Information Society
- j) The information society has become part of the identity of those living in Tampere
- k) The development of ‘the information society’ has now been sufficiently addressed by other public policy measures (e.g. Strategies for the Pirkanmaa region, regional development programmes such as Regional Centres = *Aluekeskusohjelma*, Centres of Expertise = *Osaamiskeskusohjelma*)

Specify: _____

17. Personal opinions about ICT implementation in Tampere (Rate 1-5 in order of agreement with 1 being agree completely, and 5 being disagree totally. Leave blank if you are unable to rate the statement)

- a) ICT will change the policy-making process in Tampere
- b) ICT improves communications within the Tampere city administration
- c) ICT improves the ability of the Tampere city administration to serve its citizens
- d) ICT improves the access of Tampere’s citizens to useful information
- e) ICT gives the Tampere administration better access to public opinion
- f) ICT will increase citizen participation in the policy process in Tampere
- g) ICT provides all segments of the Tampere population with equal access to education, employment and social services
- h) ICT increases the gap between rich and poor
- i) ICT enables people to get better access to professional services without living in central Tampere
- j) ICT enables people to get better access to urban cultural life without living in central Tampere
- k) ICT will reduce the need for people to travel to the Tampere city center

- l) ICT improve the quality of social relationships in Tampere
18. To which of the following groups do you belong?
- a) eTampere office
 - b) University or research community
 - c) Public administration (local, regional or national)
 - d) Business community
 - e) Other

Notes

ⁱ We do not in any detail address the question of how Information Society is understood here, though some references are naturally made to the way in which it seems to be interpreted in the Finnish context in general, and in the case of Tampere is particular. As with Frank Webster's classic definition of the concept, it is emphasized that one needs to escape technological determinism and consider the different aspects of Information Society, namely technological, economic, occupational, spatial and cultural (Webster 2002).

ⁱⁱ Nordregio was responsible for co-ordinating the mid-term evaluation of the Centres of Expertise undertaken in 2001-2002 in a consortium together with Net Effect Ltd and VTT. The results of the evaluation are available at [http://www.intermin.fi/intermin/biblio.nsf/1C848696B9716D80C2256CC600409494/\\$file/OSKE.pdf](http://www.intermin.fi/intermin/biblio.nsf/1C848696B9716D80C2256CC600409494/$file/OSKE.pdf)

ⁱⁱⁱ Teleplan & Nordregio (2003): IT Infrastruktuurstudie om nordisk bredbåndspolitik. Project commissioned by the Nordic Council of Ministers in 2003. The dimensions of this Nordic comparative project were: Nordic national policies and principles in the area of developing broadband access and network; Implementation of these policies; The connection between broadband policy and the supply and utilisation of its digital content; and the connections between broadband policies and regional policies in the Nordic countries.

^{iv} For those interested in the historical development of the Finnish policies for the development Information Society, the strategic positions through which it has been promoted and the connection of these to European policies Sitra offers a range of good introductory reports; e.g. Lilius 1997 and 1998, Nevalainen 1999, Linturi, Mannermaa & Hannula 1999, Lavikainen 1999. See also Kasvio 1999.

^v The difference here between the co-ordinator roles is of specific relevance, as the difference of the roles (and perception of roles among the key stakeholders) between Tampere municipality and the technology centre is quite marked. While the technology centre has the advantage of being perceived as an "apolitical" facilitator and co-operation partner, the City of Tampere necessarily has a more political profile. This can be seen as a disadvantage if political changes are seen as being reflected into public policy in the Information Society sphere, though also as an advantage as political support and the perceived consensus around Information Society development provides a particularly firm basis for commitment and support.

^{vi} There are a number of on-going activities in this however, and what is encouraging is that in addition to co-operation with the "big players" in ICT development (e.g. in the USA), there are co-operation initiatives that are developed in co-operation with similarly small regions. An example being the memorandum of understanding between Tampere and Leuven in Belgium, expressing the intention of setting up interdisciplinary research activities and cooperation in scientific, technological, socio-economical, industrial and cultural areas. Finnish partners are found very close to eTampere, as they include Tampere University of Technology, VTT (Finnish Technical Research Centre), Finn-Medi Research and Tampere Technology Centre, thus making eTampere indirectly involved as well.

^{vii} This lack of connection naturally works both ways, as eTampere is also absent from the strategies for the development of Tampere region, i.e. the City of Tampere and the surrounding municipalities. This is the case for instance with the Strategy for Regional development Programme (Aluekeskusohjelma) for Tampere urban region, which makes no reference to eTampere, though it refers to Information Society and IT as strengths and opportunities to be built upon. An electronic version of this document is available (in Finnish) at <http://www.tampere.fi/strategia/ohjelmat/aluekeskusohjelma.pdf>

^{viii} Both the University of Tampere and Tampere University of Technology have decentralised units, for instance in Pori and Seinäjoki.

^{ix} In some cases there still perhaps remain some ambiguities, as the role of the polytechnics in eTampere would seem to suggest. In its report of activities Tampere polytechnic refers to having actively participated in the preparation of eTampere projects (Tampereen ammattikorkeakoulu 2002) and in the CoE activities polytechnics have been identified as one of the strategically central actors for the future, yet among the eTampere stakeholders, as they came across in the interviews and the survey, the polytechnics are clearly seen to be in a marginal position.

^x The IT optimism of the late 1990's has been interpreted into a multitude of fascinating narratives that could be seen to reflect a certain degree of "symbolic politics". This is not only the case in Finland, as a recent Swedish study on broadband and symbolic politics indicates (Santesson-Wilson 2003, 113-164). Though the concept of symbolic politics is not elaborated upon here in any great detail, the nature of symbolic politics as primarily *other than instrumental political decision-making and action that has the utility of what the action symbolically means* (ibid., 35-40) can at times be identified also in connection to Finnish Information Society policies.

^{xi} These included in the early stages for instance Professors Hannu Eskola and Pauli Kuosmanen from Tampere University of technology, Director Antti Kasvio and Professor Jarmo Viteli from University

of Tampere, Previous Director for Business development of the City of Tampere Juha Kostiainen, Managing Director Olli Niemi from Tampere Technology Centre, Managing Director Klaus Oesch from PCA Infocom and Managing Director Reijo Paajanen from Prinnox Ltd and Director Jouko Suokas from VTT Automation.

^{xii} This is closely related to a more general discussion of institutional thickness and the associative economy. O’Gorman and Kautonen (2001) provides a case study of benefits and drawbacks of public-private policy interventions in the Tampere IT industry.

^{xiii} A whole range of such services and forums are available at <http://www.tampere.fi/osallistu/>.

^{xiv} The need for face-to-face contact as an ingredient in building local innovation clusters for instance has been widely debated lately, as the over-optimism regarding the globalised, borderless world, where distances do not matter and electronic forms of contact suffice has rightly been relativised. Recently, an important strand of the literature has emerged on differences between tacit and codified knowledge, which has increasingly argued for the superiority of relational and geographic proximity (for example, intense face-to-face contact, local industrial clusters etc.) over formally constituted but geographically more distant networks of knowledge and learning. (See for instance Amin & Cohendet 2000 and 2003.)

^{xv} This was a point suggested in a number of interviews. TEKES representatives did not respond to the survey, nor did they participate in the interviews, which makes it difficult to judge their interests in developing eTampere activities in the future.