Technology Analysis & Strategic Management

Trade-offs between policy impacts of future-oriented analysis: experiences from the innovation policy foresight and strategy process of the City of Vienna

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Published online: 12 Oct 2009.

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Trade-offs between policy impacts of future-oriented analysis: experiences from the innovation policy foresight and strategy process of the City of Vienna

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In 2006 the City of Vienna launched a foresight and strategy process to revisit its urban research and innovation policy. This process undoubtedly had a major impact on policy; in fact, several of the recommendations of the process were immediately translated into policy decisions, others are planned to be implemented in the years to come. In spite of this apparent success, a more critical and systematic assessment of the process shows that the apparent short-term success of the process seems to come at the cost of limited medium- to long-term impact, associated with a low degree of novelty and the avoidance of controversy. The impact assessment is based on a framework that focuses on three key functions of foresight in relation to policy making: informing, counselling, and facilitating policy making at short-, medium- and long-term. Obviously, only the short-term impact assessment can rely on empirical observations, but there are also several indications of likely shortcomings with respect to the medium- and long-term impacts. Moreover, evidence can be given of process mechanisms that have been conducive to the generation of rather conservative outcomes. After introducing the impact assessment framework and the general process design, objectives and results of the Viennese innovation policy foresight and strategy process and the different impact dimensions will be analysed and assessed for different time horizons. The reasons for success in terms of short-term policy impacts will be highlighted, but also the factors that seem to hamper medium- and long-term impacts from arising. Finally, some generic lessons learned from the Viennese experience will be discussed.

Keywords: foresight; strategy process; innovation policy; policy impact

1. Introduction

In 2006, the City of Vienna initiated a far-reaching and open strategy process on the orientation of its future research, technology and innovation (RTI) policy. The aim was to develop, in a participatory process, a comprehensive strategic framework as well as concrete proposals for

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municipal RTI policy actions until the year 2015. By then, Vienna is aiming to be among Europe's leading metropolitan areas in research, technology and innovation, as the hub of a network of research locations in the Central European Region (CENTROPE). The objectives, challenges and fields for action to be tackled in order to reach this position were translated into a set of concrete measures, some of which are to be started in 2008.

The core process was conducted between autumn 2006 and autumn 2007. At its end stood indeed a number of concrete measures to be taken, as well as a perspective on future challenges and key areas for action that had been developed in the context of a participatory process. This experience looks very much like a successful foresight process in terms of the impact it had and still has on policy and decision making, at least as far as short-term impacts are concerned.

However, in this paper, we would like to take a more systematic look at the impacts the process already has had and is still likely to have in the future. For that purpose we use an impact assessment framework that has been developed by Havas, Schartinger, and Weber (2007). The foresight experience of the City of Vienna will be discussed against this framework.

First, we introduce the impact assessment framework (Section 2). Then the main features of the process design (Section 3) and the objectives and results of the process (Section 4) will be described, including a brief overview of the state of their implementation. Subsequently (Section 5), the impacts will be discussed along the lines of the impact assessment framework. Obviously, only the immediate and some of the intermediate impacts can be discussed on empirical grounds, given the fact that the process ended only in 2007. However, other medium- and longer-term issues can be discussed on the grounds of the process design and its key characteristics. The concluding section will synthesise some of the most interesting insights that could be gained from the experience of the project.

2.   Framework for the impact assessment of foresight processes[1]

2.1.   *Changing insights into processes of innovation and policy making*

In the 1960s, government policies in relation to research and technology had predominantly been inspired by an approach that today is often labelled as 'picking winners': promising sectors and large players had been selected as being of particular public or strategic interest and were thus favoured by financial and other types of support. With the recognition of the limitations of government's ability to actively plan and shape future developments in an efficient and fully informed manner, the late 1970s saw the emergence of a new paradigm in research, technology and – then also – innovation policies, which were characterised by a focus on shaping framework conditions that are conducive to innovation. This 'hands off' approach has subsequently evolved into what is nowadays called the systems approach to research, technology and innovation, which not only deals with framework conditions, but also with the institutional and structural settings of innovation systems (Dosi 1988; Edquist 1997; Freeman 1991, 2002; Fagerberg, Mowery, and Nelson 2005; Smith 2000). In line with these concepts, the 1990s were also characterised by a great reluctance of government policy to prioritise research themes and select technologies in a top–down manner. Since the turn of the millennium we can observe a shift in policy-making practices from shaping framework conditions and structural settings towards strategic decision making: science, technology and innovation policies give the thematic portfolio of a country or region a greater weight again and pay more attention to long-term perspectives. However, the growing complexity of innovation processes is also recognised by stressing the bottom–up

component of networking and clustering as important instruments for enhancing the innovative performance in emerging areas of specialisation (OECD 2002).

Similar to this shift in approaches to innovation processes, there has been a shift in the conceptual understanding of policy processes. Taking into account insights from strategic planning and complex social systems thinking, policy studies are stressing the growing importance of interactions, learning, and the decentralised and networked character of political decision making and implementation (Smits 2002; Smits and Kuhlmann 2004). Initially, the prevailing technocratic and linear process models of policy making (e.g. in terms of formulation – implementation – evaluation phases) were replaced by cycle models, where evaluations are supposed to feed back into the policy formation and implementation phases. Already in these cycle models, policy learning is seen as an essential ingredient of political governance. However, in view of the complexity and the ever-changing character of the object of policy – which strongly applies in the case of innovation policy – it is now widely recognised that there is neither a clear-cut recipe for nor an overarching theory of policy making (OECD 2005). From a different angle, we should acknowledge a fervent need for continuous adaptation and re-adjustment of policies and related instruments (Carlsson, Elg, and Jacobsson 2006).

More recently, it has been recognised that the effectiveness of policy depends also on the involvement of a broader range of actors than those formally in charge of policy decisions. The concept of distributed policy making and intelligence (Kuhlmann 2001; Smith 2002) draws our attention to various policy practices relying extensively on the knowledge, experience and competence of the different stakeholders concerned. From this network perspective, policy making is not just about government, but about the joint impact of public and private decision making on society's course of change and the interactions that precede formal decision making. For government policy to be effective, this implies a need for participation of stakeholders. Further, the role of government is shifting from being a central steering entity to that of a moderator of collective decision-making processes.

With such an open and distributed model of policy making in mind, it is now increasingly recognised that an opening of political processes is necessary to ensure the robustness and the effectiveness of its outcomes. This is also reflected in the EC's White Paper on Governance (EC 2001) which stresses five principles of good governance: participation, accountability, openness, effectiveness, coherence.

2.2. *Foresight in support of policy strategy formation*

The aforementioned shift in conceiving of policy-making processes is reflected in the evolving practices of foresight. Foresight processes bring together not only experts, but also decision makers from research, industry, policy making and society. Thus, a shared understanding of problems, goals and development options can be expected to emerge among those actors that have an important role to play in shaping the future. This converging understanding of the issues at play is likely to contribute to an improved coherence of the distributed decisions of these actors, in line with the shared mental framework developed. In other words, the future is being shaped by aligning expectations and thus 'creating' a self-fulfilling prophecy. These so-called 'process benefits' are often regarded as more important than the actual substantive (or tangible) outputs like reports and websites.[2]

We can also observe an increasing interest in foresight activities that aim at supporting strategy formation both at the collective level and at the level of individual organisations. Examples are 'Adaptive foresight' (Eriksson and Weber 2008) and 'Sustainability foresight' (Truffer, Voss, and

Konrad 2008). This interest is fuelled by the recognition that there is a 'translation problem' apparent in foresight approaches that predominantly rely on broad participatory processes, namely the translation of shared collective problem perceptions and visions into actual decisions of individual actors and organisations. From this perspective, foresight can be interpreted as an integral element of networked and distributed policy making by providing three crucial functions (Da Costa et al. 2008; Eriksson and Weber 2008; Weber 2006) which – in line with the network-type distributed model of policy-making processes – are provided simultaneously rather than in distinct phases:

(1) Policy informing by generating consolidated findings concerning the dynamics of change, future challenges and options and transmitting it to policy makers as an input into policy conceptualisation and design. This function is an important motivation for policy makers to initiate a foresight programme in the first place.
(2) Policy strategic counselling by merging the insights generated in the context of policy informing foresight activities with perspectives on the strategic positioning and options of individual actors to support their internal decision-making processes.
(3) Policy facilitating by building a common awareness of current dynamics and future developments as well as new networks and visions among stakeholders, thus facilitating the implementation of policies.

2.3.   *An assessment framework for foresight processes in support of policy making*

Against this background, it is now possible to summarise the potential policy impacts of foresight by drawing first of all on the three main functions of foresight in relation to policy-making processes, second on the range of impacts that have been assigned to foresight in the corresponding literature, and third on the time lag, at which an impact occurs[3] (Table 1).

This framework will be taken as the background against which the experiences and impacts of the innovation policy foresight of the City of Vienna will be assessed, but let us now turn first to the process itself.

3.   Process design and implementation

Vienna is the key centre for science and research in Austria as well as in the wider central European area to which it belongs. With its 'twin capital' Bratislava being only 60 km away, it occupies a unique position in Central Europe. As mirrored in international benchmarks, the Austrian innovation system has gone through a phase of fast growth of R&D expenditures and internationalisation. Austria is increasingly recognised as one of the leading European countries in research. Austria has accomplished major structural reforms, affecting universities as well as research funding bodies, many of which are located in Vienna. Simultaneously, several Austrian regions have initiated or reinforced their RTI policies. Vienna already launched an active RTI policy in the early 1990s; almost twenty years later the city is confronted with the necessity to revisit its RTI policy landscape.

At the same time, new challenges were identified that have to be tackled in order to keep pace with the international developments in science, technology and innovation, with new employment patterns and with the need to further upgrade research and innovation performance. In 2006 it was therefore decided to initiate a process of strategic dialogue, bringing the growing number of diverse actors together in an open and self-critical debate. This was regarded as a break with the past,

Table 1. A Framework to classify the impacts of foresight activities.

Function	Time lag	Targeted and/or unintended impact
Informing	Immediate	• Increased recognition of a topic area
		• Awareness of science, technology and innovation options among players, creating debate
		• Awareness of the systemic character of change processes
		• Foresight skills are developed in a wider circle
		• Dialogues in new combinations of experts and stakeholders and a shared understanding (knowledge network)
	Intermediate	• Articulation of joint visions of the future, establishing longer-term perspectives
	Ultimate	• Integrating new able actors in the community that is shaping an area of concern
Counselling	Immediate	• Making hidden agendas and objectives explicit
	Intermediate	• Devising recommendations and identifying options for action
		• Activating and supporting fast policy learning and policy unlearning processes
		• Identify hidden obstacles to the introduction of more informed, transparent and open participatory governance processes
	Ultimate	• Influence on (research/policy) agendas of actors, both public and private (as revealed, for instance, in strategies and policy programmes)
		• Incorporating forward-looking elements in organisations' internal procedures
Facilitating	Immediate	• Effective actions taken
	Intermediate	• Formation of action networks
		• Creation of follow-up activities
	Ultimate	• Adoption of foresight contents in the research and teaching agenda of organisations as well as in various disciplinary matters
		• Improved coherence of policies
		• Cultural changes towards longer-term and systemic thinking

Source: ARC systems research, building on Cassingena Harper and Georghiou (2005), PREST (2006) and ForSociety (2007).

because it implied a serious effort of trying to overcome the strict departmentalisation of political and administrative responsibilities, where RTI policy was spread across several administrative branches, with little coordination between them. These conditions, together with the pronounced consensus-orientation in policy making, provide the governance context in which the foresight and strategy process was positioned.

3.1. *'Systems Research in the Urban Area': groundwork for RTI policy*

The strategy process could draw on solid grounds. In addition to a number of specific studies, it built specifically on the results of the large-scale research programme 'Systems Research in the Urban Area' that provided the analytical groundwork and took first exploratory steps towards identifying future challenges for the RTI policy of the City of Vienna.[4] The research programme was implemented as a joint undertaking by the City of Vienna and Austrian Research Centres. The results of the programme later on served to fuel the debates in the different expert panels in the strategy process phase. However, it needs to be noted that the research programme and its forward-looking projects were designed at a time, when there was not even a first discussion

about setting up a broader participatory process on research and innovation that was blessed by the highest political levels. In fact, when the research programme was started at the end of 2004, the suggestion of launching a participatory foresight process as part of the research programme was rejected by the representatives of the City of Vienna in the management team of the programme.

The goal of this comprehensive research programme was to identify scientifically founded observations and analyses to *underpin* the development of an integrated, future-oriented urban research and innovation policy.

Initiatives in this urban policy area were expected to contribute to enhancing the competitiveness of firms in the city, thus fostering the socio-economic development of the Vienna metropolitan area by giving those impulses a regional government can specifically provide. Central to the research programme was the combination of different perspectives on the situation of the urban innovation system.

The preliminary results from the various analyses from different perspectives were brought together during a forward-looking integration phase in spring 2006, i.e. before the start of the actual strategy process. In this phase, four scenarios were developed, which served as a backdrop for later elaborating elements of an RTI policy strategy for the city of Vienna. The essence of these four scenarios is captured in their titles (Weber et al. 2007):

- Innovative niches: application potential of science and technology;
- Fast second mover: exploitation in the focus;
- Multi-centric excellence: leveraging complementarities;
- Excellence4me: Vienna as a centre of science.

3.2.   *From fragmentation to strategic action: 'Wien denkt Zukunft'*

Following this preparatory phase, which was initially not even intended to lead to a participatory strategy process, the main phase of the project 'Wien denkt Zukunft' started in November 2006 with a major kick-off event attended by over 500 participants. The initiative was championed by the vice-mayor of the city, and his engagement must be seen as decisive for realising a participatory process in a context that had been characterised until then by strong departmentalisation of policy making.

The title 'Wien denkt Zukunft' is actually a wordplay; it is not fully captured by the English translation 'Vienna Looks to the Future – knowledge means change'. Over the following 12 months, a broad participative debate on RTI policy strategies for the city was conducted. Many players coming from various units of the municipality, from universities and other research organisations, from the education sector, and from (high-tech) business contributed to the process. The discussion was intended to develop a comprehensive strategy and vision for municipal RTI policies by both identifying areas for action and implementing adequate policy measures until the year 2015. Figure 1 shows the course of the described process.

Inspired by the preparatory research, four core themes were identified at the beginning of the process on which experts panels focused their work (see Figure 1):

(1) RTI in business;
(2) Research priorities and knowledge transfer;
(3) Science and society;
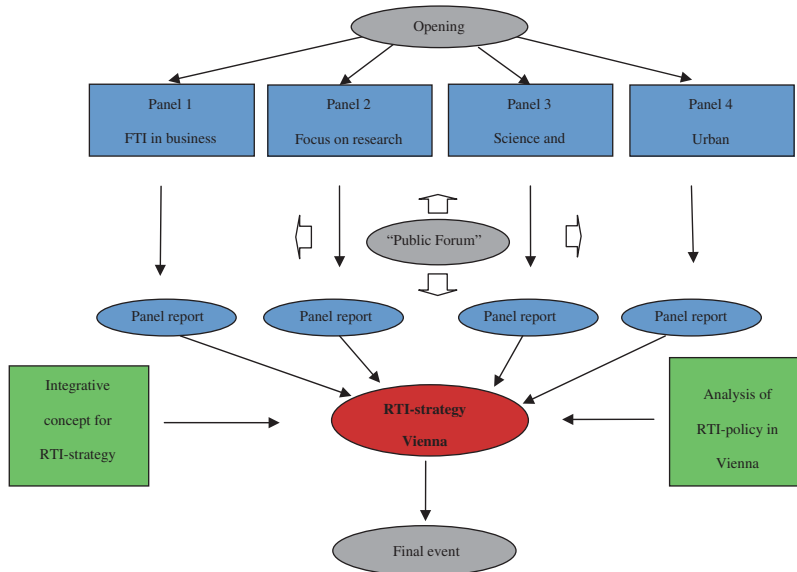(4) Urban development for research.

Figure 1. Process overview 'Wien denkt Zukunft'.

Each of the panels was chaired by a leading actor in urban RTI policy, coming either from a municipal department in charge of research agendas or from a public research funding agency in charge of research agendas, in order to ensure the ownership and link with policy initiatives. In other words, while on the one hand these four themes mirrored major concerns of the city in relation to research and innovation, they also mirrored the main competencies and institutions by which the city tries to influence that field. It gave the key policy actors a clear and visible place in the process, thus reducing the risk of counter-productive interference.

In addition, four crosscutting topics were included in the work of all panels:

(1) Gender aspects;
(2) Human resources;
(3) EU-policy;
(4) Networking.

These four crosscutting topics were also regarded as crucial for the future, but there were less clearly defined political responsibilities in place for dealing with them. As a consequence, they should be addressed by all panels.

3.3. *Viennese RTI strategy goes public: between panel work and broad participation*

The participatory nature of the strategic process is demonstrated by involving more than hundred stakeholders from various areas in the panel work, but also by the three public events that were organised at the beginning, at mid-term and at the end of the process in order to gather further input from a broad range of stakeholders. The process started with a kick-off event ('opening session') in the City Hall with prominent proponents from politics, academia and business and

several hundred participants. After the opening session, the panels established themselves and each panel met between three and five times over the following months. While the opening session was mainly presenting the intentions and the working mode of the initiative, the public forum at mid-term could draw on the active participation of experts, stakeholders and citizens in four thematic forums. Moreover, a website served not only to document the debates and their results, but interactive tools were made available to offer the public an opportunity to contribute to the process with own ideas and proposals throughout the whole period (www.wiendenktzukunft.at).

The selection of panel members was the responsibility of the panel chairs, but some shared criteria had been agreed upon by the chairs before the panels were established. A combination of experts and stakeholders from the key organisations involved in the research and policy fields covered by the respective panels was sought. As secondary criteria gender and age balance were considered. In spite of the attention paid to the emergence of the border-crossing research and innovation area in the CENTROPE region, there were no participants invited from across the border. While language barriers were regarded a minor concern only, two main arguments were raised against a broader involvement of foreign panel members. First, the strategy process was regarded as a process by which the City of Vienna wanted to find and make explicit its own strategic position within CENTROPE; it was not (yet) meant as joint process of all CENTROPE partner regions. Second, it turned out to be rather difficult to identify the corresponding counterparts on the other side of the border. With the regional research and innovation policy bodies being still in a process of emergence, several Viennese organisations were not able to tell with whom they would cooperate on joint actions. This second argument must be seen in the context of a then recent initiative to strengthen cooperation with the twin city of Bratislava, initiated and supported by the mayors of the two cities.

The work of the panels was not so much guided by a shared working mode, but by a clear guidance concerning the type of expected products of the panels. The panel reports had to provide an analysis and outlook on future challenges in their respective areas, but also a set of concrete recommendations that formed the basis for the specification of main objectives, challenges, fields of action and kick-off projects of the official RTI-strategy. As a consequence, the modes of operation of the panels were quite diverse and ranged from a combination of – sometimes very provocative – impulse statements and open discussions that were subsequently synthesised by the chair, to moderated working sessions using a range of techniques to stimulate the creativity and openness of participants (e.g. brainstorming and small working groups).

In order to ensure that a shared and coherent set of recommendations could be formulated by all panels, regular inter-panel meetings and meetings with the members of the group of supporters were held throughout the whole period. The inter-panel meetings were facilitated by experienced moderators who had to fulfil the difficult task of ensuring that a consensus could be achieved regarding the actions proposed by the four panels. In line with this consensus-oriented approach, dissenting views were either excluded or debated until a formulation was found that could be accepted by all participants. At the very end, the final version of the strategy paper had to be agreed with the office of the vice-mayor, i.e. a very direct link between the panel results and the official policy was established. In this final phase, the role of the Municipal Department for EU Strategy and Economic Development (MA 27) that was in charge of coordinating the entire foresight and strategy process cannot be over-estimated. It had to ensure the coordination with the vice-mayor's office, with the key stakeholders and between the four panels.

Exactly one year after the kick-off event, the RTI-strategy of the City of Vienna was presented to an equally large audience of several hundred participants, backed by the mayor, city councillors and key stakeholders.

4. Objectives, challenges and key fields of action

4.1. *Identifying ambitious objectives*

One of the goals of the strategy process was to identify targets and objectives for optimising the process of research and innovation with the help of RTI policy measures as available to the City of Vienna and – embedded in the other policy levels (national and European) – exerting an influence on the research and innovation scene in the city. Six main objectives and targets were formulated for the RTI strategy of the city, which should be achieved by 2015 (City of Vienna 2007a):

(1) Increase Vienna's research expenditures to 4% of the gross city product;
(2) 22,000 individuals employed in the R&D sector;
(3) 800 companies engaged in R&D;
(4) 20% of the population having a university degree;
(5) 200 SMEs taking part in projects of the EU's Seventh Research Framework Programme (FP7);
(6) Rate of female researchers in the business sector is to increase by 100 per cent.

4.2. *Five main challenges*

A cross-panel analysis revealed five main challenges that would need to be tackled until 2015 (City of Vienna 2007a):

(1) Making effective use of the potential for research, technology and innovation by creating adequate conditions for young people, irrespective of their origins, to pursue successful careers as scientists and researchers.
(2) Enhancing RTI quality and visibility with respect to international competition for investors.
(3) Embedding RTI into society: providing space and occasions for public discussion about RTI, its opportunities and challenges.
(4) Accelerating the dynamics in RTI by providing adequate infrastructure.
(5) Integrating Vienna's RTI in European networks and strengthening co-operation within the CENTROPE region in order to create a common RTI area that will successfully compete in Europe and in the world.

4.3. *From strategy to action: Addressing the challenges*

Within its jurisdiction, the City of Vienna can provide stimuli for achieving the identified goals. Options for translating these goals into specific measures can be conceived along the lines of the main determinants of innovation ranging from push factors in the area of science (e.g. R&D subsidies, selective subsidies complementary to national subsidies), through acceleration of the transfer process (selective measures such as licensing initiatives, venture capital), to pull factors in the area of socio-economic demand or application potential on the demand side.

Bearing in mind this broad spectrum of options, the RTI process 'Wien denkt Zukunft' identified five key fields for action on which the City of Vienna will concentrate its future RTI policy (see Figure 2):

(1) Human resources – Bright Minds for Vienna: The goal of activities in this field is to make better use of the city's enormous human resource potential. Various activities will serve to improve the prospects and conditions for highly qualified young scientists, with a special
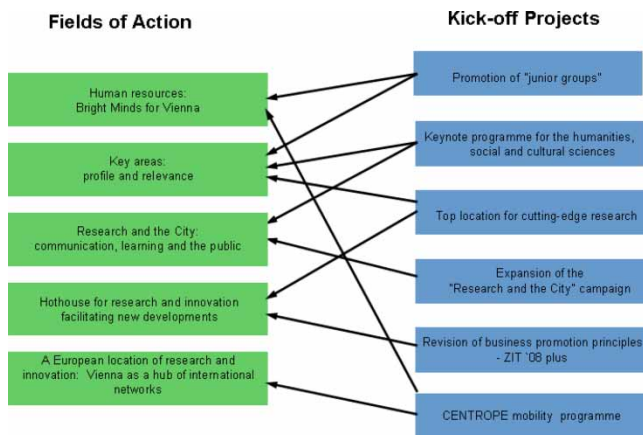
Figure 2. Main fields of action and associated kick-off projects.

focus on gender issues and parts of the population that have been neglected in the past (e.g. university graduates with a migration background).

(2) Key areas – profile and relevance: Specific thematic areas that are both relevant and visible are to be supported, building in particular on the existing key areas of life sciences, information and communication technology and creative industries. In addition, the development of a number of new avenues of research and innovation is being promoted.

(3) Research and the city – communication, learning and public awareness: The three terms form a catchphrase to express the serious interest in strengthening the critical public dialogue about RTI, both within Vienna and on the international stage. By means of a new set of measures called 'Vienna research in dialogue' a critical and continuous exchange of knowledge about RTI with the citizenry is to be fostered.

(4) Vienna as a hothouse for research and innovation – facilitating new developments: Further improvement of working conditions for scientists and creative individuals is called for by providing local networks as breeding grounds for invention and creativity.

(5) A European location for research and innovation – Vienna as a hub for international networks: Vienna is to be established as the centre of international research networks, and of networks in the CENTROPE region in particular. In this context, Vienna's network-based location of research and innovation will be further strengthened.

4.4.   *Implementation – the schedule for 2008 and beyond*

Based on the objectives, challenges and measures identified during the strategic process 'Wien denkt Zukunft', several concrete proposals for new projects or initiatives were developed in the five fields of action. Six of these projects have been prioritised ('kick-off projects') and are likely to be implemented in the first 2–3 years after the end of the strategy process (see Figure 2). For the year 2008 the initial three projects have been endowed with approximately €14 million:

(1) Under the title of a 'Keynote Programme' for the specific fields of research in the humanities, the social and cultural sciences (on the side of the already well established programmes for

life sciences, information technologies and the creative industries) will be actively promoted. A first call in this new area was launched in the first half of 2008, focusing on Arts & Sciences.

(2) Expansion of the 'Research and the City' campaign. Under the slogan 'Vienna research in dialogue', the City will address essential contemporary and future issues in the field of science, research and technology. Communication between the various special interest groups and organisations will be encouraged and strengthened. A first event will take place in autumn 2008.

(3) In revising the City of Vienna business promotion principles – 'ZIT 08plus' – more attention will be given to crosscutting issues of RTI policies, such as promoting innovation in the service sector, encouraging research cooperation and gender mainstreaming. The new business promotion principles were introduced at the beginning of 2008 already.

Other kick-off projects as well as further initiatives are planned to be launched from 2009 onwards. In fact, in response to the economic crisis in early 2009, the City of Vienna decided to spend an additional €60 million on research infrastructures and cutting-edge research as part of a broader economic and employment stimulus package. Two of the remaining three kick-off projects (promotion of junior groups, and top locations for cutting-edge research) will be financed from this additional source of funding. Next to some other research-related initiatives, further funding will also be made available for the sixth suggested kick-off project, but the foreseen grants will not be restricted to the CENTROPE region, but be open to Central and Eastern European applicants in general.

In the medium term, a monitoring process will also be implemented to follow the process towards achieving the strategic objectives as well as the progress of the individual initiatives. New and additional initiatives may be launched as well and it is the firm intention to maintain the momentum of the participatory process by consolidating some of the communication channels that had been established in the context of the strategy process.

5. Impacts of the process

Although only the short-term (and some first medium-term) impacts can be discussed on empirical grounds, the experience of the process lends itself also to some more speculative observations regarding the medium- to long-term impacts of the foresight process.

5.1. *Immediate, short-term impacts*

The short-term impacts of the foresight process look quite impressive. In terms of its informing function, it certainly contributed to giving research and innovation more prominence and visibility in the context of urban policy. The relevance and cross-cutting nature for many other policy areas became apparent and contributed to raising the awareness of science, technology and innovation among different players that are primarily dealing with other issues. While still being very much distributed among different municipal departments, the support given by the city councillors ensured a coherent appearance of urban research and innovation policy to the outside.

A major process benefit must be seen in the panel process itself which – for the first time ever – brought several of the actors, experts and stakeholders together who had hardly interacted with each other before. A shared understanding of the future challenges was created, but it remains to be seen whether the interactions will be sustainable and lead to the creation of crosscutting networks. The complexity of research and innovation became apparent to many participants and the benefits

of and the need for a strategic and forward-looking approach were recognised. However, as the participatory process was not following a strictly-speaking forward-looking methodology (e.g. scenario development, road mapping, etc.) it would go too far to speak of a broader diffusion of foresight skills as a result of the process.

The short-term counselling effects of the process were dependent on the level of interaction and networking that could be achieved in the course of the process. In particular in the context of panel meetings and inter-panel meeting, it was necessary to explain and justify objectives and suggested initiatives, and they had to find support among the other participants of the group in order to find their way into the final panel and strategy documents. In other words, implicit agendas and objectives had to be made more explicit to provide the basis for the joint definition of future challenges, fields of action and kick-off projects; they could not be defined individually by any of the stakeholders. A key role in this negotiation process was obviously played by the panel chairs (in accepting suggested initiatives on new draft panel documents) and by the vice-mayor's office (in accepting proposals on draft versions of the final strategy document). The inter-panel meetings were crucial in this respect, because on the one hand participants felt obliged to achieve a consensus on initiatives to be suggested for the RTI-strategy, while on the other hand they had an interest to defend their competencies.

In terms of the policy-facilitating function of foresight, a number of concrete and effective actions were taken and are about to be implemented. Although some of these actions had been 'in the drawers' before, this does not hamper their significance and the impact of the foresight process in making these options real.

Overall, it is certainly justified to assess the impacts of the process positively in the short term.

5.2.   *Intermediate, medium-term impacts*

While it may be too early to assess the sustainability of the medium-term impacts that have become apparent 18 months after the end of the process, the innovation policy strategy has certainly become a point of reference for many new policy initiatives. Reference is regularly made to the strategy to lend legitimacy to new initiatives and document their compatibility. The least one can say is that it is widely perceived and acknowledged as a key policy document.

With the official support lent to the strategy by all relevant city councillors, it has acquired an official status. The official and political character of the document also has its downsides, in that some of the more visionary elements that were part of earlier versions of the strategy were eliminated in the final version, in order to ensure widespread political consensus and avoid the formulation of contentious issues that might put into question the agreement by other councillors.

With respect to the medium-term counselling function, some of the recommendations and actions suggested are geared towards the medium-term. This applies, for instance, to initiatives to be taken in the context of the wider CENTROPE area, which – obviously – require further negotiation with the other regions beyond the border.

While the process can be interpreted as a first step of joint policy learning, it will be one of the great challenges of the following years whether at least some of the participatory elements and coordination processes among municipal departments can be established on a permanent basis. Monitoring the implementation of the strategy is planned to be an element of this, but it remains to be seen whether and how the results of the monitoring will be further processed to adapt strategy and policy accordingly.

There are several pretty obvious barriers to a better coordinated and networked policy-making approach in the City of Vienna. The departmental division of labour is quite strict, and

boundary-crossing initiatives are difficult to realise. The suggestion to foster innovation-oriented procurement in the city is an obvious example where established boundaries would need to be crossed in order to be effective. There is a great deal of awareness of these kinds of barriers, up to the point that the expectation of high barriers prevents the necessary initiatives to be taken in the first place. What seems to be necessary is either a full backing from the top level of the city's administration and policy level for such boundary-crossing initiatives, or – as an even more radical change – a less hierarchical governance approach in general, an approach that rewards cross-cutting and horizontal initiatives.

The foresight and strategy process also fulfilled policy facilitating functions, but mainly with respect to the activities internal to the city government and public administration, where the strategy indeed serves as a major reference point. General support to the strategy has been lent by many of the research and innovation performing and facilitating actors outside the local government, but hardly any specific action has been firmly started yet that would build explicitly on the strategy. However, improving the interaction between local government and other research and innovation actors is one of the issues on the future agenda, including the dialogue with the public.

A number of follow-up activities to the initial set of actions are in the pipeline and likely to be implemented in the future. In that sense, strategy contains a rough plan of action. Its implementation has been accelerated by the economic crisis in 2008/2009 that has led to an increase in funding for RTI as part of city's economic and employment stimulus package (see Section 4.4). It remains still to be seen whether the process as such will be a one-off activity or whether it will turn into a more regular process of strategy development and update, based on a monitoring of actions and context.

Overall, some elements of the strategy have been defined in such a way that the momentum will be kept for at least the next two or three years. A shared view of future challenges and a better mutual understanding of potential joint interests and differences in opinion have been achieved, as well as a set of pre-defined actions to be taken. What remains to be seen is whether the process of strategic dialogue and policy learning can be turned into a sustainable activity or not, and whether a more open, network-type governance culture can be established within local government itself, as well as between local government and other research and innovation actors.

5.3. *Ultimate, long-term impacts*

Integrating suitable new actors in the community dealing with research and innovation is one of the key long-term impacts expected from foresight exercises. In the Viennese case, the range of 'relevant actors' is rather limited and generally well known. Identifying 'new' actors is less the key point than integrating the known actors (e.g. from neighbouring policy areas) into the debates about research and innovation. First steps in this direction have been made that promise to be fruitful.

Some longer-term impacts with respect to the counselling function of foresight can already be observed, for instance by the reference made to the strategy documents in new initiatives. However, it is too early to say whether really new initiatives are being taken as a result of the strategy and to what extent it will influence agenda-setting processes in individual agencies or municipal departments.

Although the foresight process was targeting the time horizon 2015 (and in some instances even beyond), it is rather unlikely that it will lead to the emergence of a more forward-looking culture in innovation and research organisations. In fact, the willingness to embark on explicit forward-looking methodologies was rather limited, and the restrictions on the time horizon implied

that some longer-term issues tended to be excluded or tackled only superficially (e.g. the role in CENTROPE).

In terms of its long-term facilitating function, 'Wien denkt Zukunft' promises to have a limited impact only, and it is likely to remain rather limited. The nature of the results is probably not forward-looking and innovative enough to really influence the future agendas of individual organisations; although adjustments are of course likely in view of the growing prominence of RTI on the city's policy agenda. Also with respect to the coherence of policies, more fundamental changes would probably be needed to reduce organisational barriers. In pointing to needs for action in this regard, the strategy is rather modest and does not suggest major adjustments of a structural or organisational nature. Nevertheless, a first step has been made towards systemic longer-term thinking.

Giving an assessment of longer-term impacts is difficult after just a year since the completion of the process. However, while some long-term issues were debated in the different panels and events (see City of Vienna 2007b), the Vienna strategy in the end restricted itself mainly to the short- and medium term and explicitly left some of the more controversial long-term issues out (e.g. issues of political governance). This may have been a wise decision in order to ensure the widespread agreement to the strategy, if this is seen as a first step only towards establishing a more strategic and open governance culture.

6.   Conclusions

The innovation policy foresight and strategy process 'Wien denkt Zukunft' had a number of clearly identifiable impacts on policy agendas and initiatives. One of the reasons for that success must be seen in the close linkages between those implementing the process and the responsible political decision makers. A second reason must be seen in the early involvement of key actors in research- and innovation-related organisations of the City of Vienna. Several concrete actions were agreed upon and some of them are about to be implemented. For the first time, a communication process was implemented that brought research and innovation policy to the forefront of policy attention and that brought together representatives from most relevant policy areas. As part of the process a jointly developed view of the main future objectives, challenges and key areas of action was agreed upon, combining elements of a joint vision.

However, this apparent success in terms of immediate policy impact came at a price. First of all, the degree of novelty and creativity that was enabled by the design of the process was limited. For instance, the panel members were recruited mainly from the prevailing key organisations in research and innovation, but there was little room given to outsiders with unconventional ideas. As a consequence, some of the initiatives that were put forward in the process were not really new, but had already been 'ready' on the shelf for some time. To this is added the strong consensus-orientation and the closeness to top-level policy making. By being very tightly linked to policy making, several of the prevailing 'rules of the game' of policy making had to be respected, such as the need to avoid politically contentious proposals in the strategy document. In the end, the strategy document becomes official policy.

Second, the comparatively short, and thus policy-relevant, time horizon implied that several important longer-term issues, likely to be of a controversial nature, were not prominently addressed. This concerns, for instance, the future role of the City of Vienna in the wider CENTROPE region. This issue, as well as some others that could have given rise to uncertainties and thus to the consideration of alternative futures had been addressed in the forward-looking part

of the preceding research programme on the Viennese innovation system, but were not taken up in the participatory RTI-strategy process.

Third, the structural and organisational rigidities of urban research and innovation policy that will need to be overcome for establishing novel types and areas of policy action requiring a better networked approach, both within local government and beyond (e.g. innovation-oriented procurement), were addressed in the process, but not given much prominence in the final strategy. Avoiding these sensitive issues was necessary to reach consensus on other proposals.

Finally, the largely inward-looking nature of the process, focusing very much on the scope for action by the local government, has not (yet) been paralleled by similar initiatives from the private sector. It is one of the intentions for the future to reinforce this dialogue, though.

Overall, the need to achieve consensus on immediate policy actions among the key local policy actors implied that several of the more controversial issues, often building on a longer-term perspective, had to be avoided in the strategy. Making conflicting positions explicit, but leaving them open was not regarded an option. Neither was the option considered to have a longer background report, containing also some controversial issues, in parallel with a shorter 'official' strategy document that outlines the common ground of urban research and innovation policy.

With hindsight, the overall process looks also more straightforward than it actually was. In fact, it was a lucky coincidence that the foresight process 'Wien denkt Zukunft' could draw on a comprehensive analytical basis provided by the research programme 'Systems Research in the Urban Area' and the scenarios that had been developed in that context. The results of the programme were simply just about to become available when the decision was taken to launch a participatory foresight and strategy process.

To conclude, it is certainly true that the foresight and strategy process had a quite significant impact on guiding the future research and innovation policy in Vienna, but the closeness to policy making implied that some of the exploratory and 'out-of-the-box' thinking that would usually be part of a foresight process was not regarded desirable and thus reduced to the minimum.

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Notes

1. This section draws largely on Havas, Schartinger, and Weber (2007).
2. Obviously, there are also certain types of foresight exercises that have a less pro-active intention by concentrating on the identification of future challenges and issues only rather than aiming at solutions.
3. See the study on methods and dimensions of impact assessment by Rhomberg, Steindl, and Weber (2006) and in particular the work on self-evaluation tools for foresight in the context of the ForSociety ERA-Net (ForSociety 2007).
4. The result of the research programme can be accessed at the following website: http://www.innovationspolitik-wien.at

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Additional Internet sources:

More Information (in German) on the foresight and strategy process is available at:
http://www.wiendenktzukunft.at
www.wiendenktzukunft.at/downloads/strategie_lang.pdf
www.wiendenktzukunft.at/downloads/strategie_kurz.pdf
An English summary is available at:
http://www.wiendenktzukunft.at/downloads/strategie_english.pdf

The results of the research programme 'Systems Research in the Urban Area' can be found at:
www.innovationspolitik-wien.at