Governance in Austrian Information Society Policy - Progress without Strategy

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[1] http://www.tip.ac.at/

Content

1 Introduction

The context of Austrian Information Society policies in the past decade has been a marked discrepancy between the size and structure of the ICT producing sectors in Austria and the diffusion and use of ICT in various sectors of economy and society (for an overview of recent Austrian performance see Schneider et al. 2004). The former has been - according to most indicators - only close to or even below EU-15 average. Investment in ICT isn't very high and the Austrian pattern of industrial specialisation was not and still isn't geared very much towards ICT, even though in some fields successful niche players could establish themselves as highly competitive in their respective markets. Thus, Austria didn't profit from the new economy boom in the last decade of the previous century in the way other small open economies (e.g. Ireland of Finland) did.

On the other hand, starting from the position of a laggard in ICT diffusion in most fields in the 1980s, Austria was later catching up rapidly and even approaching the top rankings in some fields, e.g. early up-take and high penetration rates of mobile telephony, broadband and wireless broadband access to internet and e-Government. But even taking into account these positive developments, the general perception is that there is much still room also for better ICT use throughout the economy and society.

In Austrian Information Society policy we find at most a weak link between horizontal science, technology and innovation policy and the relevant sector policy (e.g. health, business, transport). Thus, the current policy challenge for IS policies in Austria has been formulated as to further enhance ICT up-take by demand- and mission-oriented policies (especially in fields like e-government, e-education, e-health and transport) and to combine this with policies fostering R&D and innovation in the ICT producing sector (see Schneider et al. 2004).

Against this background, in 2001 the Austrian Council for Science and Technology Development asked the three ministries with the main responsibilities for science, technology and innovation policy (i.e. the Ministry of Transport, Innovation and Technology, the Ministry of Economic Affairs and Labour and the Ministry of Education, Science and Culture) to coordinate their IS/ICT programmes and to bring forth a common and coherent concept. For this purpose an inter-ministerial ICT working group was established, consisting of representatives from the three ministries and the Council. This inter-ministerial working group subsequently commissioned a study on the "Governance of Austrian Information Society Policy" in order to gain insight on the roles of the players, their interaction and coordination mechanisms. The study was produced in the context of the NIS MONIT project[2], its main results are presented here.

The study started off from the observation that in the past, attempts to formulate a coherent strategy for IS policy were not successful. Thus, not only the current institutional setting and its

[2] Ohler, Polt, Rammer and Schindler (2004), "Governance in Austrian Information Society Policy".

mechanisms of policy coordination, but also the reasons why previous attempts did not succeed had to be analysed. Methodologically we therefore used a process-oriented historical approach[3]. This process-oriented approach allowed to analyse the incentives and motives of the actors, the barriers to communication and coordination, as well as path dependency and lock-in in policy. As there is no or only very little quantitative data available on IS policy processes, we used a qualitative approach, our main method of investigation being structured interviews with key players (see Annex for a list of institutions covered). Furthermore we used document analysis of important strategy documents and institutional mapping, i.e. a description of the formal relationships and distribution of competences.

The second section of this paper briefly describes the historical developments in the different sub-fields of IS policies, namely e-government, e-health, e-learning, e-business and science-, technology and innovation policy for ICT with the institutional settings and policy agendas specific for each field. The next sections address the different stages of the stylized policy process: 'Agenda setting', 'Policy formulation and coordination', 'Implementation' and 'Policy learning' respectively. In these sections, we analyse these successive stages of the policy cycle by applying key concepts of systemic theory to the policy process: we find that using such concepts as 'context specificity', 'path dependency', 'localized learning' and 'accumulated knowledge' can help us a lot in explaining main characteristics of these processes.

The final section draws conclusions on how the policy process could be (re)shaped to allow for the formulation of coherent policies under the constraints of multiple actors, divided competences and asynchronous policy agendas.

2 Historical Development and Formal Organisation of IS/ICT-Policy

2.1 Historical Development of Austrian Information Society policies

While some countries had launched broader IS policy initiatives already in the late 1980s and early 1990s, in Austria, political awareness of the topic was only raised to higher levels in the aftermath of the publication of the "Bangemann Paper"[4]by EU Commissioner Bangemann and the US initiative on the 'information highway'. The 'Alpbach Technology Forum' in August 1994 marked the establish-ment of the Information Society policy as an important policy field in Austria. At this occasion, the Chancellor stated the need for political action and in the government declaration from November 1994 the topic „Information Society" was taken up.

[3] For the details of the approach, including the interview guideline see Ohler et al. 2004

[4] Europe and the global Information Society – Recommendations to the European Council , European Commission, Brussels, 1994.

Information Society technologies and applications were “just around the corner”. Several technologies were mature enough for entering the market. The gov-ernment initiative was declared to be of highest priority, which in turn created high expectations.

Subsequently, a major process was established as a first attempt to create a coherent strategic view on IS policy. A number of working groups were created, involving a large number of the most important stakeholders. These working groups produced recommendations for actions and listed fields of potenti-al policy challenges, which were made public in a final report in December 1996 [5]. In March 1997 the report was finally accepted. This was the first strategic document for IS policy in Austria, but – unlike other countries - it never reached the status of a ‘White Paper’. No funding was specifically allocated for the strategy as a whole, no central responsibility was defined to supervise and monitor the process. Mainly, it was left to the respective actors in the various policy fields to use the document as a (non-binding) guidepost. No wonder that the document 10 years later was hardly remembered by our inter-viewees as having led to increased coordination or coherence of policies. This is especially stunning, when compared to the Bavarian initiative “Bavaria Online”, which was started at the same time, was allocated substantial financial resources and was put into practice within a couple of months.

One main reason for the reluctance of government to actually use the document as a means to formu-late and implement an overarching strategy might have been that interests of stakeholders were diverg-ing: e.g. while some were asking for a rapid liberalization of the telecommunications sector, powerful actors (public sector trade unions) resisted such change and thus the liberalisation of the telecommuni-cations sector was implemented at the latest possible moment in Austria - later than all other EU coun-tries. Another one might be that the government did at that time not pay enough attention to the chal-lenges arising for governance when dealing with such cross-cutting policy matters as IS (other coun-tries had at this time already established special responsibilities and structures within government to deal with IS matters like IS ‘envoys’ or ‘secretaries’).

On the other hand, while failing to provide an umbrella for coherent strategic orientation of the actors, the Information Society initiative caused a spark of new activities. The most important players in the country were mobilised, some of which then started follow-up activities. A number of national and regional internet initiatives were started in the years 1994-95 (e.g. the Austrian Platform for Telematics Applications - APTA), a specific program for 'Technologies for the Information Society’ was started by the Innovation and Technology Funds ITF, and e-government initiatives were launched (e.g. the digitalisation of the public administration) or envisaged (e.g. the creation of an electronic social secu-rity card ‘e-card’).

It was only in 2000 that another initiative to formulate an overarching strategy for IS matters emerged. Again, the main impulse came from the EU in the form of the European Commission’s “e-Europe” initiative. The Austrian “e-Austria in e-Europe”-initiative was started as a large-scale initiative aimed at formulating an Information Society strategy. Another important factor for why

[5] „Informationsgesellschaft. Final Report of the Working Group of the Austrian Federal Government“, Issued by: Federal Chancellery, Federal Press Service, Editor: Enno Grossendorfer , Scientific Editor: Norbert G. Knoll , Vienna, December 1996

the Information Soci-ety topic hit the Austrian policy agenda again was a government change in 2000. The Ministry for Public Services and Sports – newly established in the year 2000 – led the e-Austria initiative and set up an Information Society task-force: the 'Taskforce e-Austria'. Its purpose was to propose aims and ac-tion lines to sustainably strengthen Austria's position in the e-technology environment.

The taskforce developed a conceptual paper; however, the paper (again) never became an official document of the Federal Government. The reasons were twofold: first, because the processes lacked sufficient involvement of major stakeholders and second, because political responsibilities for IS mat-ters were not clearly assigned from the start. In the process, the other ministries responsible for IS mat-ters did not accept the new de-facto responsibility of the Ministry for Public Services and Sports for the IS topic. Some ministries also felt that their work was even being held up because of having to wait for an overall IS strategy, before being able to implement already well developed sectoral IS measures.

Like with its predecessor, even though no overall commonly accepted IS strategy was developed through the "e-Austria in e-Europe" initiative, it did motivate several IS activities in the various sub-fields. Thus, it gave rise to more coherent 'sectoral' policy approaches, which are described in the next section. E.g., it led to the formulation of a strategy for the promotion of e-business activities by the Ministry for Economic Affairs and Labour and it also paved the way for the creation of an e-government board and – subsequently - the creation of an e-government strategy.

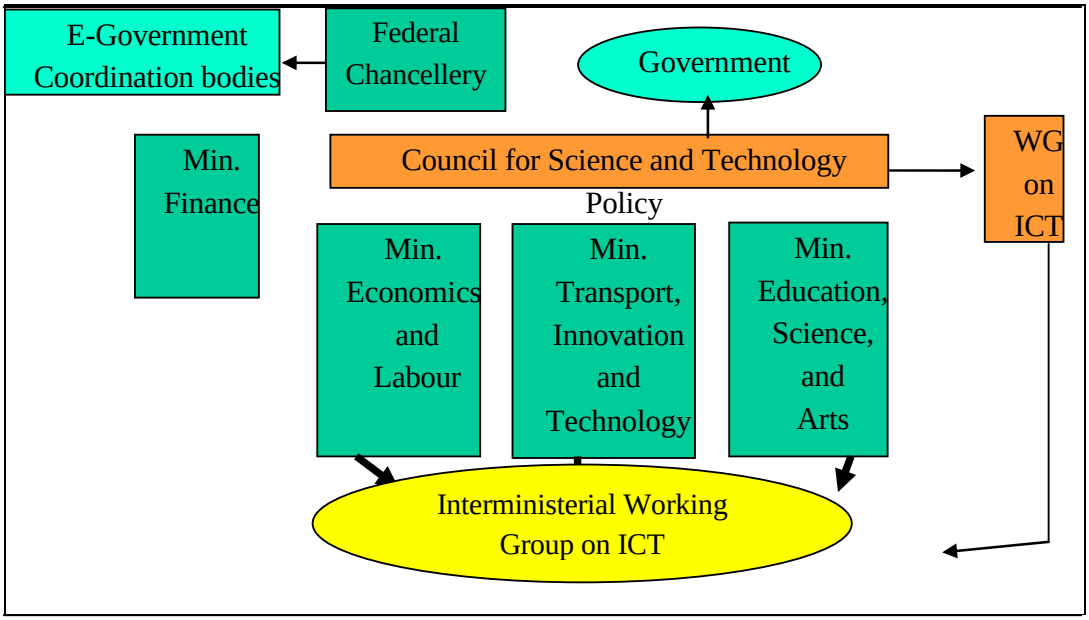
In retrospect, Austria seems to be a peculiar case in so far as two major attempts to formulate an over-arching IS strategy did fail in the past. Some of the reasons for this failure can clearly be labelled as pitfalls of policy (lack of allocation of funds, competences, process responsibility and process owner-ship, lack of awareness of the challenges for governing cross-cutting policy matters). Others are intrin-sic to the complexity of the process (large number of actors, different (dis)incentives to cooperate, time and effort needed for cooperation). Nonetheless, if (a mixture of) these barriers are still in place, there is only a limited chance to succeed in the future. On the other hand, even in the absence of an overarch-ing IS strategy a lot of policy initiatives in the various sub-fields of IS were either successfully started or implemented. Also, institutional innovations were triggered as in the case of e-government. Were major projects failed, they did (mostly) not because of too little policy coordination between these sub-fields of IS policy or with innovation policy, but because of reasons like bad project management. For both success and failure cases, examples are given in the next section.

2.2 Current Setting: Formal Organisation of ICT-Policy at the Level of Central Government

The main policy makers in IS policy to date are the Ministry of Economic Affairs and Labour (ICT innovations, e-Business, e-Content), the Ministry for Transport and Innovation (ICT innovations, R&D), the Ministry of Education, Science and Culture (e-Learning, IT for schools, polytechnics and universities) (see Fig. 1). These ministries have formed an inter-ministerial

working group on ICT, in which also the Austrian Council for Research and Technology Development is involved. Another im-portant player is the Ministry of Finance (electronic documents and payment, e.g. taxes). In the area e-government the Federal Chancellery is in charge. The dominating player in this realm (see Fig. 2) are the Chief Information Office (coordination of horizontal e-government activities, development of strategies and solutions), the E-Government Platform (responsible for e-government on the political level) and the E-Cooperation Board (responsible for e-government on the operational level).

Figure 1: Basic Institutional Setting of Austrian IS policies



2.3 E-Government

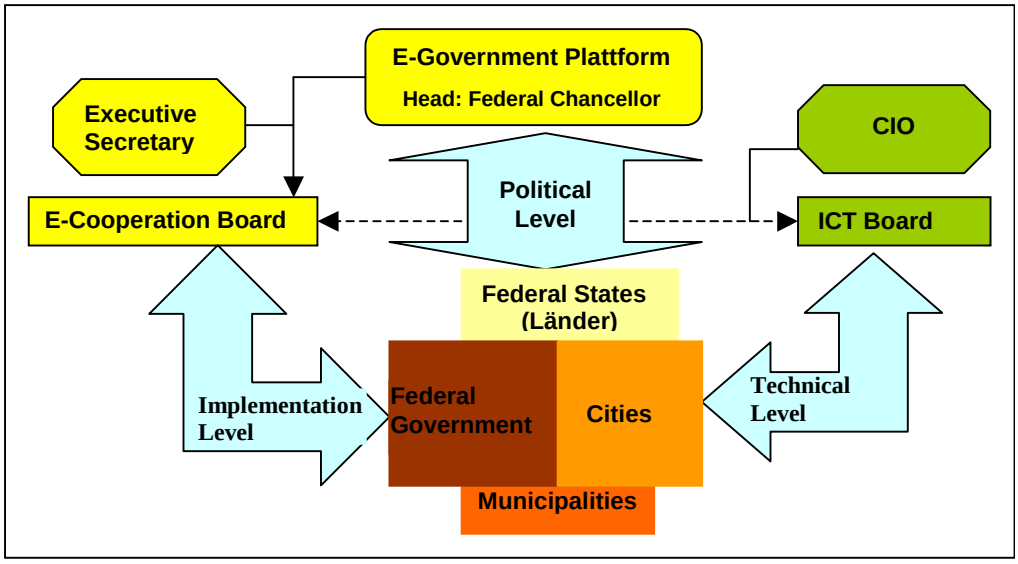
E-Government initiatives have been a significant driver of Information Society policies in Austrian, and, in the absence of a generally agreed upon overarching IS strategy act as a major driver also for other policy fields. Here, major institutional changes have taken place in order to cope with IS matters.

The major institutional innovation in this realm was the creation of the Chief Information Office and Chief Information Officer in August 2001. Theses were partly established to overcome the shortcom-ings of the existing working groups for e-Government issues, who partly hindered each other more than creating benefits, partly as a reaction to a controversial e-government Benchmarking study[6]. The Benchmarking expert group blamed the lack of an e-Government strategy for Austria's then low rank-ing. The government and the Austrian Federal Economic

[6] Databank Consulting, "eEurope 2005 Key Figures for Benchmarking EU 15", SIBIS, April 2003

Chamber motivated the creation of an e-Government Platform and a Chief Information Officer. Furthermore there has been institutionalised cooperation between the Ministries, the federal government, the Länder and the municipalities. Coor-dination between the Federal government and the Länder takes place regularly through two working groups: one for technical and the other for legal issues (see Figure 2).

Figure 2: E-government institutions in Austria



The diagram shows the dual structure of the technical and organisational-strategic units, which helps overcome the previous problem that the e-Government responsibility was allocated to IT-representatives, who emphasized the technical dimension and neglected the organisational and political aspects.

The ICT-board is responsible for coordinating horizontal e-government activities on the federal level, searching for e-government solutions and planning relevant strategies. The position of Chief Informa-tion Officer who heads the ICT board was entrusted to an Information Technology professor, who had already previously worked on the e-health card and the electronic signature.

The e-Government initiative 2003 led to the establishment of the e-Government platform on the politi-cal level assisted by the e-cooperation board and its executive secretary on the operational level. The e-Government-platform led by the Federal Chancellor put forth a roadmap, including a master plan for joint projects, financing models, an implementation framework and general objectives. An e-Government strategy consisting of several modules was established. Both the Chief Information Offi-cer and the executive secretary are assisted by the administrative officials of the Chief Information Office.

The ICT board (headed by the Chief Information Officer), the e-cooperation platform (headed by the Executive Secretary) and E-Government platform have been fairly successful, judging from

our inter-viewee's opinions. In our interviews, policy representatives stated that the field e-Government is well coordinated, that the mechanisms are suitable for achieving consensus and that e-Government in Aus-tria is very modern, well-advanced and highly competitive in international comparison (especially with respect to the back-office and the electronic file). A key factor leading to the perceived success of the Chief Information Office was the fact that it was equipped with adequate resources, including about 20 employees. Furthermore the units are internally integrated. The Chief Information Office tries to build-up consistent and transparent e-Government structures. Also, the commitment of the Federal Chancel-lor was an important success factor.

As a result, Austria's performance in e-government has improved significantly over the past years, especially with respect to e-Government implementation and back-office applications. For example, Austria has a leading position in the category electronic file.

Deficits however consist in the lack of integration of the Ministerial departments into the e-Government processes. Some interviewees stated that they did not know the "Chief Information Offi-cer" and "e-coordination platform" representative of their own Ministry. Likewise the "Chief Informa-tion Officer" and "e-coordination platform" representative of a Ministry often did not know who was working on IS innovation issues in their own Ministry. Clearly it follows that there is a lack of trans-parency concerning the responsibilities for Information Society issues within ministries. The broadness and cross-sectional property of Information Society matters makes this task difficult, but it remains essential that transparency and awareness are improved within the Ministries.

2.4 E-Health: ICT in the Health Sector

ICT is used in the health sector in many diagnosis and therapy methods and instruments. The main focus of the discussion revolving around ICT-usage in the health sector however is on ICT-usage in administration and inter-organisational data transfer (i.e. health certificates, transmission of diagnostic findings and medical records). Health telematics has become an important topic in Information Society policy discussions.

In contrast to e-Government with its homogeneous and hierarchical structure, the health sector consists of highly heterogeneous players: resident doctors, hospital doctors, hospitals, hospital operators, health insurances, health ministry, social ministry and interest groups. Hospitals are made up of a heterogene-ous group of players; due to the diverse ownership structure (public, private and religious hospitals exist). The introduction and use of ICT is affected by these complex organisational-institutional con-stellations. Coordination, the introduction of de-facto standards and guidelines, incentive compatibility and acceptance are essential, but difficult to achieve due to the heterogeneous interests.

Health policy, social security and retirement pension insurance policy are interlinked, but are divided among two Ministries. The Ministry for Health and Women has to share some of its competence in health matters with the Ministry for Social Security, Generations and Consumer

Protection. This di-vided responsibility has advantages and disadvantages. With respect to e-health the division is seen as a disadvantage.

The Ministry for Health and Women has a significant formal definition authority for ICT applications in the health sector, but does not use this potential power due to formal and informal reasons. Internal reasons consist of the low attention given to ICT; external reasons lie in the relatively strong power of institutions, such as hospital associations and the social security carriers. Furthermore several issues are dealt with on the Länder level. The Health Ministry is not allowed to order a reduction of hospital beds or the shutdown of a hospital, but is allowed to make suggestions. Potentially the Ministry could use other methods of intervention, e.g. cutting down government aid for certain hospitals, which could indirectly result in the reduction of hospital beds or the shut-down of hospitals, however the Health Ministry does generally use this method however, due to local interests and the power of policy play-ers. The Health Ministry also does not use its potential power with respect to its legislations and coor-dination authority, which could be used for policy design and implementation

An example of the difficulties of implementing an e-health strategy can be epitomized in a single very large project, the ‘e-card’:

The E-Card as a Technological Platform

The “e-card project” is the e-health project that has received most policy attention in the past years. In 1999 the main association of social security carriers was given the assignment to introduce a wide-reaching electronic administration system, in particular to introduce a chip card to substitute the paper health certificates. A call was held in 1999. In April 2001 the task was commissioned to a general contractor consortium EDS/Orga.

Large conflicts about the contract requirements and specifically about the extent of services to be rendered led to the early termination of the contract on part of the main association of social security carriers. In Spring 2003 a new call was started. Instead of seeking a general contractor, the project was now split into several smaller calls. In the current call the main function of the e-card is to substitute the paper health certificate. The e-card should however be designed to enable extensions in future. For example, the storage of patient records on the e-card is being discussed. Widespread use of the e-card is expected for 2005. The e-card will not comply with the strict security requirements of the Austrian Signature Law, which would have enabled it to additionally be used as a Citizen Card for other e-government services. Even though the federal government had wanted the e-card to comply with the high security requirements of the “citizen card”, this would have created high costs to the Main Association of Social Security Carriers that no one was willing to share.

2.5 E-Education and E-Learning

The Ministry of Education, Science and Culture is responsible for the IS sub-fields of e-education and e-learning. As in the other sub-fields, the impetus from the EU played an

important role for policy formulation: the EU-council resolutions of Feira and Lisbon were important factors influencing the establishment of the programme “e-Fit Austria”, which promotes the broad and sustainable use of modern ICT in education, science and culture through numerous initiatives and projects.

This is the example of policy coordination by programme steering: E-Fit Austria integrates the activi-ties of all units into a thematic programme. This approach to coordinate activities via a joint thematic programme was also used as a lever for internal institutional reforms. E.g. an IT-steering committee was established to act as the centre of coordination of the e-Fit program. It coordinates activities of 10 departments of the Ministry, related international activities and strategic partnerships with industry and with other national players (e.g. the CIO). Furthermore there are several working groups, ties with international coordination groups (the e-Learning Industry group) and strategic partnerships with in-dustry. The concentration of activities in e-Fit helped in overcoming the high diversity of activities, organisational barriers and the previously low degree of coordination which existed before.

This is also illustrated by the following example of a successful sub-programme:

The Programme 'New Media in Teaching'

The NML initiative supports projects developing software-applications for teaching in universities and polytechnics. Aims of the program are quality improvements in teaching, easier access to education, interdisciplinary co-operations and networks, systematic integration of the “funded innovations” into classes and teaching. Monetary subsidies are only one aspect or rather an incentive in the wide-reaching process of achieving continuous development of new media in teaching and in strengthening the community. The detailed preparation was carried out together with stakeholders, contact was sought to polytechnics, universities, students and the industry (federal economic chamber, multimedia firms). The involvement of stakeholders in the preparation process and communication and networking-phases in the implementation process were important for enabling the first-ever cooperation between universities and polytechnics in development projects.

The program builds upon the “multimedia teaching material” programme, which already existed in the Nineties. The early existence of ACOnet[7] is another important factor, that enabled broadband data cable connection between universities as well as broadband Internet to European research and science networks. In the beginning of the Nineties Tertiary Learning Institutions were linked through medium speed broadband. Programs and initiatives could focus on content and didactics, because the set-up of infrastructure had already been completed.

The eFit-program and the “New Media in Teaching” program act as experience and organisational platforms that present starting-points for further programs and reforms (within the ministry, schools and tertiary education). This is supported by the fact that that awareness and acceptance measures will continue to be necessary and diffusion is expected to become a more important topic.

[7] ACOnet = Austrian Academic Computer Network

All in all, the programme was implemented with a well-structured process:

- Extensive research to define the target groups and the type of specific thematic priori-ties was carried out.
- Existing institutions and initiatives were integrated.
- The project carriers were selected by a rigorous procedure in a call and a two-stage assessment.
- A person responsible for every thematic priority existed. This person generally had topical know-how and competence. Some priorities were additionally supported by external project bureaus.
- A high priority was given to achieving sustainable results. The project participants are for example required to modernize their products.
- Feasibility and support studies were carried out to analyse and then better coordinate demand, target groups and impact.

Like in e-government, also within this policy field, an institutional setting seems to have been found that ensures a high degree of (internal and partly also external) policy coherence.

2.6 E-Business

Explicit public measures to support ICT development and applications started already in the late Seventies[8]. The main focus was on the development of hard- and software and applications. In the Eighties and early Nineties ICT usage for intra- and inter-firm processes received little attention, with the exception of electronic data exchange between organisations. Electronic Data Exchange (EDI) focused on (i) the development of standards, (ii) the spreading of underlying technologies, standards and applications. Data exchange, between firms (automobile industry being the pioneer user) and between banks and between firms and public institutions, especially tax and customs authorities constituted the dominant field of application.

Until the mid Nineties the two ministries, Ministry for Science and Research and Ministry for Public Economy and Transport held the main responsibilities for this sub field of Information Society policy. The Ministry of Economic Affairs and Labour did not have an important role in this policy area. The only IS activity for which the Ministry of Economic Affairs and Labour was exclusively responsible was to represent Austria in standardisation institutes concerning EDI. It also had joint responsibility for the so-called IMPACT-program together with the Ministry for Science and Research.

[8] Even though ICT was already being funded earlier, but under different names.

The beginning of the Information Society discussion in the year 1994/95 and the establishment of the IS working group led to a greater involvement of the Ministry of Economic Affairs and Labour in IS policy. The programme “Technologies for the Information Society” carried out by the Innovation and Technology Fund fell partly under the responsibility of the Ministry for Economic Affairs, which initi-ated two focus areas for the programme: ‘EDI Business Austria’ and ‘Multimedia Business Austria’. The Ministry decided to focus on areas were it had already built up some specialisation. This de-velopment also ensured that the Ministry for Economic Affairs and Labour became a central player in IS matters.

In the year 2000 the Ministry for Economic Affairs and Labour widened its scope in IS activities with the launching of the initiative “E-business in a New Economy” – also in the context of the EU’s e-Europe initiative. This was a full-fledged strategy process involving a large number of stakeholders: aA steering committee and seven parallel working groups were established a were led by representatives from business and science. 300 persons were involved in the working groups. The working groups led to 35 proposals clustered around six action lines: (1) Information and Awareness, (2) Start-Up and Growth Potential of Internet firms, (3) R&D, (4) e-Content Austria, (5) Technology transfer, (6) Location e-Austria, Gateway to East.

This scheme not only developed new programmes and action lines, but also integrated existing measures, thus allowing for policy coherence over time. Furthermore a monitoring group was established and the revision of strategies and measures was planned as a part of the process.

The scope was such as to include R&D and innovation policy, but went beyond the narrow con-fines of R&D. It addressed a number of broad IS topics (like regulatory and legal aspects of e-business). It can serve as a good example of strategy definition and of integration of IS policy and innovation policy in a narrow sense, but in doing so, it went not beyond the borders of the ministry.

2.7 R&D and Innovation Policy for ICT

The competence for ICT research and development and innovation policy mainly lies with the Ministry of Transport, Innovation and Technology and the Ministry for Economic Affairs and Labour. The for-mer focuses on ICT R&D, whereas the latter focuses more strongly on ICT applications and their dif-fusion.

For the support of R&D, a broad range of measures (indirect support via R&D tax breaks, direct support via thematic programs, dedicated institutions, infrastructure build-up...) exist in Austria. Here, we briefly describe three different types: non-targeted support for R&D, targeted support in the form of thematic programmes oriented towards ICT and thematically oriented programmes which address have other prime targets, but address ICTs as well.

With respect to the non-targeted support, we don’t have figures for the amount of indirect support. In direct support provided for R&D projects which are defined ‘bottom-up’, some 40 percent are accruing to ICT according to a recent evaluation of the major technology fund. Also, in the so-called ‘competence center programme’, which funds the establishment of research

organisations jointly run by academia and business, a considerable share of funding – without being earmarked – goes to ICT related centers (between 30 and 40 percent).

Also in the Cluster programmes which are carried out mostly by the regions, some Clusters are either directly ICT or have a large ICT part. Since the mid Nineties most Austrian provinces (Länder) recognised the significance of technology and innovation policy, dedicating notable amounts of money. The introduction of regional technology policy and regional ICT activities was quite simul-taneous in several Länder. Styria, Salzburg and Upper Austria developed specific 'Information High-ways' and 'Tele-Regions', often with EU support. These initiatives started in 1994. Cluster initiatives and diffusion measures could be found in the ICT sector.

Specific thematic programmes supporting R&D and diffusion of ICT have been in place already since the early 1980s: e.g. the microelectronics / information-processing (ME/IV) programme. This programme – even assessed by today's good-practice standards - was already quite advanced: systematic cooperation was used, each of the ten action lines were under the lead of a scientific institute, supporting social science research was being carried out and the program was followed by an extensive evaluation. Furthermore the establishment of the Innovation and Technology Fund (ITF) in the mid-eighties led to several ICT-specific programs, e.g. in Computer-Integrated Manu-facturing (CIM), Software and the above-mentioned programme on 'Technologies for the Infor-mation Society'. But with the fading out of these programmes, nowadays there are only few the-matic programs focusing on generic technology development in ICT. Currently, there is only the FIT-IT programme, initiated by the Ministry for Transport, Innovation and Technology (BMVIT), which aims at stimulating longer-term, more advanced research in selected thematic areas (e.g. ‚embedded systems')

Finally, ICT can figure also prominently in other thematic technology programs, particular in the trans-port sector, where a large programme on 'intelligent transport systems and services comprises sub-programmes like transport telematics, logistics, satellite navigation etc.

Especially with respect to the thematically oriented R&D programmes and the diffusion-oriented programmes, one could hope for a close coordination between the policy agendas of IS and innova-tion policy. But there seems to be hardly any link between the policy fields: while this is self-evident for the bottom-up defined projects, even dedicated programmes like the FIT-IT pro-gramme - currently the only dedicated ICT R&D programme - has not incorporated IS topics into its portfolio so far. The same is by and large true also for the thematic programmes which have other topical orientation, but a high ICT part: e.g. in the transport oriented research programmes mentioned above, there is no coordination between departments of the same Ministry about bring-ing transport policy, IS policy and RTD policy in line. The main reason being, that the transport policy department and the innovation policy department perceive each other as being culturally very different and aiming at incompatible goals (e.g. securing/improving public transport vs. fos-tering risky innovation projects).

Thus, the field where IS policies and innovation policies could probably be best linked is the one with the least developed institutional setting to do so - even if the boundaries are within one ministry and between ministries.

3 Agenda Setting

In the previous chapters we presented the historical development and the status quo of Information Society Innovation policy in its various sub-fields. In this chapter we focus on agenda setting in IS innovation policy. How do discussions, topics, measures, and programs, policy areas arise? Why are broad strategic concepts developed from time to time? Are some of the methods less successful and others superior? Does best practice exist? Below we will present our findings on agenda setting proc-esses in Austrian IS innovation policy.

The spectrum of channels through which issues surface on the political agenda is quite large. Many issues arise implicitly and rarely pass through a formal process. Therefore the specific way in which a topic arises is often not observed and can seem unplanned or ad hoc to the external observer.

Agenda setting is influenced by a great number of factors: the existing distribution of formal responsi-bility, successful previous programs, existing networks, dedicated persons, dominant organisations, internal distribution of tasks and changes in the organisation structure, general administrative reforms, (benchmarking) reports, the presence in EU programs and EU policies. In Austrian IS policy, espe-cially the latter is an important factor when it comes to strategic policy formulation. Both recent at-tempts to arrive at an overarching IS strategy were based on EU initiatives in this vein. EU policies thus have a strong effect on Austrian IS agendas. The EU influence does not only arise through political lead documents (such as the Bangemann Report, e-Europe Initiative), but also through thematic priorities in the framework programs, e.g. the e-europe initiative and the IST-programme.

The EU agenda is filtered through the local operational logic, for example: the ‘translation’ of IST into the Austrian FIT-IT program. We can assume that the importance of the EU in shaping national politics will further increase, especially with respect to infrastructure and standards.

Historic development paths are another important factor affecting the emergence of agendas. The development of an agenda, its contextual design and its implementation are often based on previous activities, responsibilities or experiences e.g. on previous programs, responsibilities for particular agendas (especially EU), current or previously established networks, and previous approval procedures resulting in success. As a result established competences are enhanced and strengthened, but it also leads to gaps, blind spots and ‘ad hocracy’. This was definitely a factor one has to take into account when trying to understand the difficulties the administrative system had (and has) in coping with the challenges of horizontal policy matters like IS.

We also often observed that players behave as if to minimise the expected coordination effort, showing a clear preference for local autonomy in agenda setting. The localized nature of search seemed to be a relatively stable pattern of behaviour which we found in all policy sub fields, because (i) the local na-ture of knowledge and experience, (ii) the local nature of networks and memberships and (iii) the low incentive for crossing borders have a stabilising effect. The ‘localized behaviour’ does not necessarily cause the activities to remain on a low / narrow level, which is illustrated by the programme ‘e-business in a new economy’ and the e-government activities.

The arguments above support the hypothesis that the process of agenda setting is predominantly context specific, contingent and local. The question arises in how far more rational approaches for policy formulation are possible, i.e. policies that are (i) pro-active, (ii) horizontal / global in nature and (iii) that avoid contextual randomness.

New – and sometimes radically new - agendas arise with the advent of so-called change agents. Windows of opportunity for change agents are especially large when changes in the government occur, especially when a new government comes into power. We find that new governments tend to be more active in setting impulses, overcoming barriers and in interrupting or procrastinating current IS policy processes. It was observed that the new government that came into power in the year 2000 in Austria led to new impulses, new people and the formation of new networks. This helped in overcoming lock-in situations, but the changes in personnel also led to the disappearance of accumulated know-how and (partly) destroyed old networks. Strong 'change agents' are capable of acting as points of orientation or gravitation centres for other players and implement changes that would not have come into existence otherwise.

In the ten-year discussion about an Information Society there were two attempts in Austria to de-velop a global concept. With respect to the global strategies we find that the 1996 concept was hardly noticed as a lead document, but that the preparation work was a starting point for several initiatives. The second initiative in the year 2000 likewise did not produce a global strategy docu-ment that was accepted by the government, but also sparked several smaller initiatives. The mobi-lisation effect was successful where stakeholder groups were involved. We also observed that due to the complexity of the topic it is increasingly difficult to develop concepts where a high degree of experience and contextual knowledge is necessary. This leads us to expect that another global ICT or Information Society strategy initiative would not be likely to succeed.

An alternative to the construction of global concepts is the systematic detection of gaps (‚bottle-neck analysis'). The search for explicit 'needs for action' has many advantages. It is not necessary to screen the whole system, but instead only to identify development-hindering factors and build-ing upon that, to design measures. Secondly, "the clock can be repaired while ticking" and thirdly some contextual-ties can be overcome. We did not explicitly find this kind of agenda-setting anywhere, but we believe it to be quite attractive. An example of this kind of agenda setting was to be found in the Ministry for Transport, Innovation and Technology. The IT-innovation department of the Ministry designed an IT-research programme in an area where the relevant department saw a funding-gap, i.e. a "bottleneck" in the structural context.

Just like most firms formulate a vision and goals, it is useful for a public body to formulate its aims and instruments. This is helpful in creating internal and external clarity of the activity spectrum. It predefi-nes a framework for agenda setting and makes it easier to determine and justify whether ideas match the general goals of the organisation. If explicit guidelines in the form of meaningful mission state-ments and strategies do not exist, there is more room for personal ties in determining the agenda. But: Informal agenda setting runs a higher risk of some players being left unheard.

Even if public bodies do not explicitly discuss how topics and which topics reach the agenda, there is one formal mechanism that is very influential in agenda setting. The (annual) budget

planning is a point in time when agendas are defined and agenda priorities are newly formulated. In ministries were there were little formal agenda setting mechanisms, we found more complaints about “not being heard”. Our interview partners did not explicitly blame this on the lack of formal mechanisms, but instead felt that their ministry had a lack of interest in IS matters, that their superiors did not attach importance to IS matters or that they were not “well-connected” within the ministry. This can occur in any policy area, but it is a greater problem for a horizontal policy area when the people responsible are ignored or given little priority in the vertical power chain. The existence of formal coordination and interaction channels within ministries are important in order for a horizontal policy area to be articu-lated within the ministry.

4 Policy Formulation and Coordination

4.1 Policy Formulation

Austrian IS policy formulation largely occurs in a local setting, where each ministry formulates its own activities and programmes and does not necessarily take into account what is happening in other de-partments and institutions. Policy formulation generally focuses on the activities of the respective de-partment planned for the near-future. In this sense policies are rather small-scale and short-term. The micro-focus can lead to the duplication of measures, but also to a lack of vision or missing “big pic-ture”. The strong local orientation arises because gathering information about other public institutions and coordinating is perceived as being costly. This is discussed below in further detail.

Among the many examples of local policy formulation, two attempts to formulate a global IS strategy stand out. In both cases a lot of resources were devoted to the strategy formulation. A large number of people were mobilised for brain storming within working groups and the processes were rather time-intensive. The first global strategy was viewed as being acceptable with respect to its content by the majority of relevant policy players at the time. In the second case, the content of the strategy was heav-ily criticised. The two processes differed in that the first IS strategy involved many stakeholders and policy players, whereas the second IS strategy was “outsourced” to external experts and did not involve a number of important policy players from the Ministries.

Both cases of the global IS strategies focused strongly on the content of the strategies, but did not focus enough attention on the process necessary to implement the policies. This led to the fact that neither of the two attempts to formulate an IS strategy were implemented.

4.2 Coordination

Policy coordination is important for the effective use of public resources, for example to avoid policy duplication. A horizontal policy area such as the Information Society that is spread over a multitude of public bodies requires horizontal coordination to connect the IS sub areas and vertical coordination to embed the IS areas into the particular ministries policies. Coordination is a popular method for address-ing coherence.

In general we observed that coordination has an ambivalent status among the actors in Austrian IS policy. In theory it is seen as being extremely important, but at the same time it is difficult for the play-ers to appropriate the returns on their investment in the cooperation. Coordination and cooperation are often seen as an additional burden, as an increase in complexity and as leading to additional uncer-tainty. This is because: (1) more information has to be processed and (2) coordination is not free from hidden strategic motivations of the players involved. Recently a third reason has emerged: coordination and cooperation require additional resources without necessarily creating a compensating gain. Current constraints on budget and personal resources act as disincentives to engage in cooperations and coordi-nation[9]. This constitutes a relatively stable pattern of behaviour, which is not only observed in our focus area Information Society policy.

The degree of coordination that is needed varies between the different IS policy areas. E-government for example is one area in which broad coordination is necessary as it affects all ministries. Further-more, e-government instruments such as the “electronic file” are to be implemented by all ministries in a similar way. The rather homogenous structure of the players involved and the general relevance of the measure make it an area that is potentially easy to coordinate, when the area is given thought and when resources are set-aside for the matter.

Other IS areas such as e-learning and e-education affect only one ministry, thus requiring only very little inter-ministerial coordination (inter-ministerial information exchange can still be useful however). In this case the players involved in IS-related education policy (e-learning, e-teaching) are identical to the players involved in education policy in general. Coordination might still be difficult, but there is no additional coordination necessary due to the Information Society relevance. Horizontal information exchange with IT research units could be useful, for example to start joint measures for the develop-ment of modern e-learning tools.

The IS area e-health consists of a large diversity of players. Coordination is extremely difficult, but involves the same players that are involved in health policy in general. Coordination problems that arise, do not arise from the horizontal property of Information Society policy, but arise due to the com-plex structure of the health sector in general.

Coordination in the area Information Society Technology Research is difficult, because research and technology policy is a cross-sectional area itself. IT-research is an area of Information

[9] In some departments there have been reductions in personnel hand-in-hand with an increased generosity regarding resources transfers to third parties. Outsourcing of services requires search, communication, acceptance of the service, appropriation on part of the outsourcing side and this requires specific resources. In an increasing number of cases, not only the provision of a service is outsourced but also the tender, the choice of outsourcing partners and the acceptance of the service.

Society policy were coordination is definitely necessary and where currently too little coordination takes place. The difficulty of coordination here again is not IS specific, but instead is due to the fact that technology policy is a horizontal policy area, affecting a heterogeneous group of players. The policy area also has the difficulty that successful IT-research and innovation depends upon many factors, including a well-functioning education and science system, the presence of IT-researchers and IT-firms and a healthy business-(creation) environment.

The amount of coordination that is needed depends on the number of players involved and the hetero-geneity of the players involved. Sometimes formal coordination is not needed, but instead information exchange is sufficient, just to make sure that duplication is avoided and to create awareness. Coordina-tion boards can be decision-making bodies or can serve for information exchange purposes only.

Experience has shown that the establishment of a coordination board is not sufficient to create success-ful coordination. It is very important that coordination boards consist of representatives that have the knowledge and decision power to fulfil the aims of the board. Coordination boards do not necessarily require need high-ranking officials, but the members need to be chosen adequately for the purpose. Successful coordination requires adequate (i) financial, (ii) personal and (iii) managerial resources. Some coordination boards aim only to exchange information; these boards are useful as long as the participants believe that they are gaining insight from attending the meetings. This will usually be the case, when the representatives are capable and willing to share the information relevant for the others. Coordination boards that do not fulfil their purpose should be dissolved or their aims should be adapted to the capabilities. In order to ensure the effectiveness of coordination boards, it is good to be open to changes in the participants and to allow fresh insight to enter.

Stakeholders are often involved in coordination activities. Successful coordination and coopera-tion needs to differentiate between stakeholders who are participants and supporters of interests and those who are carriers of knowledge. This is facilitated when the described core competency and a clear definition of roles exists.

On the programme level, we found examples of successful cooperation and coordination. This is facilitated when a clear definition of roles exists and the necessary knowledge is available. The integration of different support channels under the programs e-Fit and NML (new media for teach-ing) are examples of cases where the combination of steering committees, forums and external counsellors led to stability and a good information exchange.

4.3 Implementation

Much that has been said about coordination and coherence efforts is also true for the implementa-tion of measures, because coherence efforts are themselves part of the implementation. A second observation is that the status of implementation has greatly changed within the last ten years. Im-plementation has become a separate issue since then and numerous concepts of New Public Management have entered policy actions

The strategy formulation exercises showed that concepts, lead documents, (global) strategies that were not planned with respect to their implementation have a risk of ending after the final document is produced and leave it open to chance whether they are implemented or enter oblivion. This is definitely not ideal, because good ideas are wasted and because people who took part in the exercises do not see returns to their efforts and lose interest or become frustrated.

Personal and financial resources need to be allocated to implementation to achieve good results. This is true for strategy concepts, but also for the case of the e-card. The failure of the first attempt to introduce an e-card (for the health system) was significantly dependent on the underestimation of resources needed by the social security carrier to carry out the desired plans.

In many cases, implementation is a process based on division of labour, involving ministerial departments, agencies, private firms. This is very prominent in the programs of the Ministry of Transport, Innovation and Technology and in parts of the Ministry for Economic Affairs and Labour. There has been some criticism that the division of labour has reached a level that makes governance difficult to sustain because of the lack of process ownership. This problem is not only true for the "Information Society" context however.

On the programme level there are numerous cases where the quality and originality of concepts and programs were not determined by contents but instead by their method of implementation. Many of our case studies (Chief Information Office, e-FIT, NML, e-Business) can be seen as supporting examples[10].

5 Policy Learning

The analysis of learning processes and effects shows very ambiguous results. The two IS strategy for-mulation exercises were examples of this. Even though the first exercise had shown that it is not suffi-cient to create a strategy document, but that activities are necessary for implementing the new ideas, the second IS strategy repeated the same mistake. A final document was produced, but the document was not even circulated within the department. Positive effects did result from the exercise in that some of the brainstorming activities led to new initiatives, but we cannot conclude that the second IS strategy initiative had 'learnt' how to conduct a strategy exercise.

Examples of successful learning do however also exist. Integrated learning processes were used in a number of government support programmes, especially in IT research and

[10] It is obvious that the aspect of implementation is critical, when looking at the originality of topics such as e-learning, e-Business and e-Government. There is little originality! Nearly all industrial nations have some variant of these topics in their political portfolio.

development support pro-grammes. Explicit justification for measures, monitoring along the duration of the measures and evaluation (which has nearly become a standard measure) are clear evidence of this. This does not however exclude the possibility that the justification was carried out unsatisfactorily or that monitoring and evaluation results were not utilised to create improvements. Learning processes, such as the evaluation of particular measures, the establishment of information channels still need to be established or improved in all areas of Information Society policy. This is especially true for the health sector.

6 Main Findings and Suggestions for Policy

In this case study we analysed Austrian Information Society Innovation policy, looking at the historical development, the current status and the degree of coherence of IS innovation policy. Interviews with important policy players allowed us to gain insight in the different stages of the policy cycle (agenda setting, policy formulation, implementation, coordination and learning).

We conclude that Information Society policy is no longer a new cross-sectional policy topic. In the Eighties and Nineties IS innovation policy had some difficulties in positioning itself in the departmen-tal structure of the Federal ministries, but in the meantime Information Society topics have been estab-lished quite well in the given framework. Due to the relative maturity of the policy area, departmental units have had the time to build up competence and establish their responsibilities for specific IS inno-vation policy matters. This has led to clearer definition of IS policy responsibilities. With respect to transparency and allocation of responsibilities coherence has certainly increased in Austrian IS policy.

Another important development affecting Austrian IS innovation policy is the growing influence of European level IS innovation policy. European Union initiatives and aims affect Austrian agenda set-ting and lead to a significant degree of synchronisation of the agenda, especially in IS R&D policy. The EU initiatives and guidelines lead to stronger coherence between the European nations, but also in Austrian IS policy itself.

The maturity of the policy area is also reflected in the fact that large scale IS innovation strategy con-cepts are not developed any longer, instead the current IS innovation policy consists of many small initiatives. Due to the fact that a great number of institutions are involved in IS innovation policy and each is “brewing his own soup”, there is a strong need for coordination. Total policy coherence is an ideal status and cannot be achieved in the real world, however a convergence to coherence is definitely desirable. Austrian IS innovation policy lacks coherence in some aspects e.g. when a duplication of initiatives occurs (in ICT research and development) or when players do not coordinate well (e-health).

IS policy measures in various domains have proliferated in recent years. Many departmental units have created their own programmes, some of which overlap in their aim or instrument use with other meas-ures. The costs of checking whether any one else is already conducting a

similar initiative and discuss-ing possible alterations seem to high in comparison to possible benefits. Some pressure to coordinate does exist within departments, but depends on the structures. Generally there is less motivation to co-ordinate with more distant policy bodies, e.g. other Ministries and other agencies. Coordination is sometimes enforced from above by the Council for Research and Technology Development (as was the case for the ICT programmes of the three ministries) .

We would also like to add a critical note from a study by Dachs et al (2003) on the factors of success and failure in Austrian IST-development[11]. They conclude that Austrian political institutions showed only little concerted effort in actively pushing Information Society policy. Instead they stress the im-portance of EU stimuli through White Papers and regulation and the initiative as well as the interest of the private sector[12]. They also believe that "Austria would be doing even better in some indicators if there had been a stronger public policy push towards the Information Society".

Policy conclusions for the different phases of the policy cycle could be the following:

6.1.1 Agenda setting

Agenda setting is an activity that can take place in a formalised process or can be continuously adapted. Agendas can be determined top-down through high-ranking bodies or can arise through suggestions and ideas e.g. by interest groups. An important factor in shaping the national agenda have been EU-policies, representing an orientation point for national agendas and serving as a natural mechanism to align policies and provide ideas.

'Localized' IS policy strategies are useful as an orientation and guideline both for the organisation itself and for specifying how the own activities differ from those of other organisations. 'Global'or 'overarching' IS strategies are theoretically useful for creating more coherence among the various poli-cies, but face a much more difficult task. Apart from the difficulty of devising and designing such a strategy, it faces the risk of not being accepted by all stakeholders.

The systematic detection of ways to improve the current strategy (bottleneck analysis) is an alter-native to the construction of overarching strategies. It consists of identifying development-hindering factors and then designing helpful measures. This approach has the advantage of being more realistic in what can be achieved and thus has better chances of being accepted and imple-mented.

Significant revolutionary changes rarely occur in agenda setting. One point in time when agendas are strongly reformed and reformulated is when new governments come into power

[11] The Austrian case study forms part of a study by ESTO (2003) on "Identifying factors of success and failure in Euro-pean IST-related national/regional developments".

[12] Dachs et al, 2003, p.17

and create new change agents. They often create new impulses and lead to the creation of new networks (however also destroy old agendas and old networks).

6.1.2 Level of policy coordination

Policy coordination is important for the effective use of public resources, especially in a cross-sectional policy matter that needs to be embedded both in the departmental structures and linked between de-partments. The degree of coordination that is needed varies between different IS policy areas, depend-ing on the structure of a policy area. Whereas e-government policy often deals with a large number of homogenous players, e-health consists of a large number of influential players, making it very difficult to achieve consensus and to plan measures without formal coordination. Sometimes information ex-change is sufficient, at other times formal coordination boards are needed.

When coordination boards are needed, it is very important that they consist of representatives that have the knowledge and decision power to fulfil the aims of the board. Boards do not necessarily need high-ranking officials, but the members need to have the necessary qualifications and power.

6.1.3 Policy Implementation

In order for concepts to become reality, it is very important to carefully plan and carry out the imple-mentation. The quality and originality of concepts and programs is greatly affected by the method of implementation and not only by its content. In order for the implementation to be successful, adequate resources are necessary for:

- Ex-ante activities, e.g. detailed content planning and maybe foresight
- Coordinating activities e.g. the involvement of stakeholders in all phases of the pro-gramme
- Outward communication, awareness-building activities
- Use of analytical tools like evaluation, monitoring (project supervision), benchmark-ing.

Concepts, lead documents, (global) strategies that were not planned with respect to their implementa-tion have a great danger of remaining ineffective or having unplanned (and undesired) effects. In the past policy makers have tried to outsource the implementation of initiatives, however public organisa-tions need to retain some process ownership. In order to formulate the outsourced duties, the contract-ing authority needs some managerial and hierarchical competence. This is imperative for achieving the intended results of an initiative.

6.1.4 Policy Learning

Integrated learning processes, such as policy evaluation and the establishment of information and feed-back channels are necessary for successful policy learning. A combination of local and higher-ranking policy learning must exist in a complex policy area such as the Information Society. The establishment and provision of strategic intelligence, i.e. organised information provision can be done through vari-ous instruments (market studies, technology assessment, technology foresight, monitoring, evaluation).

To sum up, we found that there is considerable room to increase policy coherence in the field of IS policy in Austria: at present, we find at most a weak link between IS policy and technology and inno-vation policy. On the other hand, we also found that – even in the absence of an overarching IS strategy – policy has reacted to the challenges of the Information Society. This was often done in a localized way, that is, confined to the borders of the respective administrative competences. In the various sub-fields of IS policy, we found failures, but also different ways to achieve policy coherence, some of which have succeeded quite well. And we found that there might be limited need to coordinate every-thing and everybody in the form of a ‘grand strategy’. The reasons why attempts have failed two times in the past in Austria are still in place. If one can design communications channels, institutions and incentives for cooperation sufficiently strong to allow for self-organised cooperation and mutual policy learning, one would have done the trick for Austrian IS policy.

7 Interview Partners

Our interview partners held responsibilities for IS matters in the following institutions:

- the Federal Ministry for Transport, Innovation and Technology
- the Federal Ministry of Economic Affairs and Labour
- the Federal Ministry of Education, Science and Culture
- the Federal Ministry for Health and Women
- the Federal Ministry of Finance
- the Federal Ministry of Justice
- the Federal Chancellery
- the Chief Information Office
- the E-Cooperation Board
- the City of Vienna – Chief Executive Office – ICT Strategy and Management
- the Vienna Science and Technology Fund
- the Council for Research and Technology Development
- the Main Association of Austrian Social Security Institutions
- the Austrian Regulatory Authority for Broadcasting and Telecommunications
- the Austrian Federal Economic Chamber
- the Public Employment Service
- Austrian Medical Association
- The Competence Center FTW (Research-Center Telecommunication Vienna)
- Imagination (industry partner in the competence center Virtual Reality and Visuali-sation (VRVis)
- Telekom Austria AG
- Mobilkom Austria AG & Co KG
- Siemens AG
- Infineon Technologies AG
- Education Highway - Innovation Center for Schools and New Technology GmbH (Educational Server Upper Austria)

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