

# Information and Communication Technologies and Regional Policy: What Can We Learn from Evaluations of Policy Instruments<sup>1</sup>

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## ABSTRACT

**ICT shall continue to be a driver of economic growth but as the diffusion process does not occur evenly across regions and the potential gains are not evenly distributed across regions, economic policy is challenged at the regional level. But what is the scope of regional economic policy in order to shape the regional economic impact of ICT?**

**Within this context the results of the empirical investigations of five regional economic policy instruments which have been implemented in Salzburg are reviewed. The performance of the policy interventions has been a mixed one. It is concluded that a key element which determines the scope for regional policy and its success is its appropriate relation to policy at the federal level, and that public expenditure has to be adequately complemented for a policy intervention to become successful.**

*Keywords: Information Technology, Communication Technology, Regional Policy, Regional Economic Policy*

## 1. The Role of Regional Economic Policy: A Re-Consideration

In spite of the recent economic slowdown the spread of Information and Communication technologies (ICT) and their importance for growth is set to continue: After stock market valuations having come down to more realistic levels and after having experienced that the ICT sector is not immune to economic downturns ICT ought to continue to be a driver of economic growth (OECD 2003). But the diffusion process does not occur evenly across regions and the potential gains are not evenly distributed across regions. As economic policy at the national level apparently cannot take fully account of this problem, economic policy is challenged at the regional level. But what

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is the scope of regional economic policy in order to shape the regional economic impact of ICT?

ICT are characterised by their applicability in all sectors of the economy and their rapid diffusion. Thus they might have the power to generate a long-term economic upswing by initiating a "long wave of economic development" - a concept which was introduced by Kondratieff and refined by Schumpeter. (Kondratieff, 1935). A distinct feature of the long wave approach is that the diffusion of new technology is largely determined by the interaction of economic, social, institutional, and technological factors. An economy's capacity to take full advantage of the potential benefits of ICT depends on its ability to adjust its organisation to the requirements of the new technology and the complimentary "technological style". This is "a kind of 'ideal type' of productive organisation or best technological 'common sense'", and "the particular historical form of such a paradigm would evolve out of certain key technological developments, which result in a substantial change in the relative cost structure facing industry and which, at the same time, open a wide range of new opportunities for taking advantage of this particular evolution" (Perez, 1983). The diffusion of ICT increases the complexity of the production process, and economic globalisation is an inherent ingredient of the ICT-related technological style. Globalisation favours the regional separation of productivity gains on the one hand and wage and profit increases on the other.

Economic policy thus is confronted with a need to re-consider its role in order to pave the way for a long-term upswing based on the ICT-related technological style. Two groups of economic policies may be considered to be most important (Michalski et al., 1999). The first one aims at fostering creativity and facilitate change in order to enhance the economic agents' abilities to unfold the economic potential of the new technological style. These policies target three fields:

- (1) the redesign of the regulatory framework which has been set up in the mass-production era of the former long wave of economic development and has partly become either obsolete or even an obstacle to reaping the economic benefits of the new style;
- (2) the re-arranging of traditional work and incentive schemes; and
- (3) the design of a framework which is conducive to experimental initiatives that create new spaces where entrepreneurship can succeed.

A second group of policies aims at reducing conflicts and creating a high degree of co-operative action in two fields:

- (4) reduction of frictions which are likely to emerge between policies which foster the diffusion of the ICT-based technological style and local interests, and
- (5) improvement of international policy coordination as the importance of global-level policy action will increase.

But which are the proper levels of policy action: The supranational, national, or sub-national (regional/local) levels? Liberalising branches like the telecommunications industry is a straightforward strategy to accelerate growth of this industry which is crucial for the unfolding of the ICT-based technological style. It has been implemented at the national level at least driven partly by institutional re-design at the supranational level.

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But re-regulating the economy in the mentioned context - which in many cases will mean liberalisation and flexibilisation - in order to exploit the ICT-based technological style shall go far beyond the ICT-industries. So it is quite obvious that various limitations of economic policy exist which seem to be of particular importance at the national level.

First, there are certain limitations of national economic policy because there is no responsibility left at the national level any more (e.g. in the field of foreign trade). The possibilities at the national and regional levels are also reduced due to EU-policy requirements; the restrictions of monetary and fiscal policies for members (and would-be members) of the European Monetary Union are important examples. The effectiveness of national and regional policy instruments is further reduced due to strong economic interrelations which in turn might reduce the impact of national fiscal policies. Second, even if it would economically make sense to deploy an instrument (e.g. infrastructure investment) and even if there are no international regulations standing against there are limitations due to budget constraints. Third, there are limitations for national and regional policies due to a lack of common EU-standards; international competition among nations and regions limiting the scope of tax and income distribution policies is an example.

What is then the scope for policy action at the regional level? This paper tries to provide some answers to this question based on the results of evaluations of five economic policy instruments which have been implemented in Salzburg. Each of these policy instruments is related to at least one of the mentioned policy fields; as policy field (5) - improving international policy coordination - by its very nature seems best suited to be tackled at the national or supra-national policy levels the policy instruments analysed in this text refer only to policy fields (1) to (4).

The intention of the first regional policy instrument analysed here was to enhance work time flexibility at the firm level. It may be considered as an attempt of the regional government in cooperation with the local social partners (chamber of commerce, chamber of labour, trade unions, confederation of industrialists) to respond to one of the core requirements of the ICT-based technological style; the instrument relates primarily to policy field (1) and touches policy field (2), too.

With the second regional policy instrument the regional government has supported innovation activity in small and medium enterprises (SME). Due to the size structure of its firms Salzburg's economy relies on the capability of SME to implement ICT. Therefore the support of these firms' ability to innovate is of crucial importance of the regional economy's capability to adjust to the ICT-based technological style; the instrument relates to policy field (3).

The third instrument has aimed at upgrading the regional ICT-related skill base. Four study programs in the field of ICT have been established at a polytechnic university ("Fachhochschule") which has been supported substantially by the provincial government; the instrument relates to policy field (3).

The fourth instrument to be analysed has provided economic support for peripheral regions. As gains from the diffusion of ICT and losses will be dispersed unequally across the province support to peripheral regions ought to improve the overall

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acceptance of adjustment policies towards the new technological style. This policy intervention relates to policy field (4).

The fifth instrument is the adoption of the City of Salzburg's web-based place marketing to the requirements of the ICT-related technological style. Competition among regions for inter-regionally mobile investors has intensified, and therefore finding out their information needs and reshaping the information channels between the local administration and investors is an important step to adjust to the changed environment; the instrument relates to policy field (3).

The following section summarises the basic elements of the policy instruments and elaborates some factors which were responsible for success or failure; the section is based on various studies by the author.

## **2. Five Instruments of Regional Policy: Success and Failure**

### **2.1 Enhancing Work Time Flexibility at the Firm Level**

Flexibility in the labour market is required for adjusting the economy to the ICT-related technological style. By international standards in the 1990s Austria's work time structure still has been rather rigid and the work time regulations have been rather strict. After the framework of work time regulation has been relaxed the social partners in the neighbouring province of Upper Austria have developed a model aimed at facilitating the implementation of new and less restrictive work time arrangements at the firm level. The model stands in the Austrian corporate tradition and is based on the principle of cooperation between employers' and employees' representations in jointly searching for collective arrangements at the mutual benefit. The two parties' interests in the field of individual work time flexibilisation - which sometimes are conflicting, but in many cases complimentary - have been defined, and common guiding principles relating to duration, timing, and distribution of individual work hours have been developed.

Firms willing to develop and implement a new work time arrangement under the program are supported by two "confidential persons", one of them being nominated by the trade unions and one of them nominated by the chamber of commerce. Thus the support and trust of both parties - employers and employees - can be warranted and the potential of work time flexibility in terms of productivity gains on the one hand and favourable work conditions on the other hand can be exploited. A specific feature of the model is that the employees' interests are involved in each step of the process of work time flexibility and that the result is based on a consensus of the two parties. The most prominent role of the provincial government in the model is to cover part of the confidential persons' cost; the rest has to be borne by the firm in which the new work time regulation is to be developed.

As the model has been successful in Upper Austria and the provincial government of Salzburg took the initiative to adopt the model. Approximately five firms ought

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to be identified for pilot projects and as showcases for other firms and the general public. The provincial government of Salzburg agreed to cover up to 75 per cent of the cost of the confidential persons to attract firms for participating as a pilot firm. A folder was designed, the model was popularised via the media of the chamber of commerce and the chamber of labour, and in addition executives and members of the work councils of several firms were directly contacted by members of the project group. Although it seemed that every possible activity to promote the model and to cater for firms to participate in pilot projects had been set not enough firms could be found.

The following reasons for the failure of the initiative have been elaborated:

- A major obstacle to the implementation of the model is the structure of Salzburg's economy. While firms in manufacturing industries have been the most interested ones in Upper Austria the share of manufacturing is much smaller in Salzburg. Furthermore the average firm size in Salzburg is significantly smaller than in other Austrian provinces - only a few handful of manufacturing firms count more than 500 employees!
- The tourism industry is very important in Salzburg, and its employment share is significantly higher than in most other Austrian provinces. This sector has turned out to be an extremely difficult field for work time flexibilisation because seasonal unemployment is high reflecting the shared interests of employees and employers to shift the economic burden of seasonal fluctuations in demand at least partly to the unemployment insurance system. This issue is of macroeconomic significance for Austria as a whole - and so it was considered too delicate for policy action at the regional level.
- In some cases both the management and the work council of a firm had been willing to develop a new work time arrangement. Nevertheless these firms did not participate in the program because they were held back by their non-Salzburg based headquarters or mother companies because a work time arrangement in the Salzburg outlet might interfere with company-wide arrangements and strategies.
- Many firms still consider the existing work time regulations to contain too little space for flexibility. As a consequence many work time arrangements at the firm level which are based on a consensus of the firm's management and work council in certain aspects provide more flexibility than the official regulatory framework allows! Particularly in firms and (semi-) public institutions in social service branches - in which flexible work times are particularly needed - this phenomenon is widespread. Even if such firms would desire to further improve their work time models they would have no motivation to disclose their existing work time arrangements which do not fully comply with official regulations.

One set of conclusions from the instrument's failure is related to limitations of policy interventions at the regional level.

- First, the branch structure and the size structure of the region's economy limit the scope for policy intervention in the province of Salzburg.
- Second, some issues are no proper fields for regional policy intervention: Entrepreneurial decisions are taken by headquarters which are "too far away" from the regional economy, and some policy issues are socially and politically too delicate

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to be tackled by regional policy interventions.

Another set of implications points to the importance of lags and proper timing in conducting policy interventions.

- First, the chance for success of the initiative for work time flexibilisation probably would have been better if it had been started at least one year earlier immediately after the regulatory framework had been relaxed.
- Second, a significant finding is that economic agents do not wait for the legislator to adjust regulations to the needs of a new technological style. The involved economic agents do not recoil at extending individual arrangements beyond legal limits. If both parties have the same bargaining power and the agreed work time regulation meets their shared interests this raises the problem that the authority of the legislator is undermined which reduces the steering capacity of economic policy makers. Additional problems arise if the bargaining power is not distributed evenly because that party which is in the weaker position is likely to agree to work time regulations not necessarily on a voluntary basis.

## **2.2 Fostering Innovation in Small and Medium Enterprises**

Within the framework of mainstream economic theory financial support of innovative activity can be justified on the grounds of positive externalities. Such effects occur e.g. if innovations do not only benefit the innovating firm but also other economic agents which do not have to pay an equivalent for the know-how they gain. As in such a situation an innovating firm cannot reap the whole benefit of the innovation the incentive to innovate is reduced and thus financial aid from public funds should compensate the innovator for the forgone benefit. Another positive externality - though debatable - arises if the growth of the supported firm leads to increased demand for supplies and complimentary services from local firms or efficiency gains in the regional economy as a consequence of the use of the supported firms' products.

Regions with a small share of firms operating in segments which form the avant-garde of the ICT-implementers - like firms in ICT manufacturing and service industries, large and internationally operating firms, and firms with large amounts of data to be processed - rely on the capability of SMEs' success to implement such technologies. Considering the resource constraints of these firms and the financial needs to develop and implement new technologies to speed up structural change, the stimulation of innovative activity of SME has been identified as a goal of regional economic policy.

An innovation stimulation program has been launched in the province of Salzburg which entitles firms to apply for financial assistance for developing and implementing innovative projects. Firms can apply for support from the program if the innovation project is co-financed by the federal technology fund. Financial means from the federal fund cover between 40 and 50 percent of the project's total cost, and financial support by the regional program on average covers another 7,5 percent. The means of support usually is a mix of direct subsidy and a low-interest loan. The program is expected to improve the market chances and to secure the existence of the supported firms,

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to foster employment, to improve labour conditions, and to reduce energy input and emissions.

An in-depth analysis of eighteen innovation projects which have been supported within this program suggests that more than three quarters of these projects are aimed at facilitating firms to adjust to the ICT-based technological style. The surveyed firms in general are highly innovative as their total expenditure on research and development is about 8 percent of turnover (median) and the share in turnover of products which have been developed within the last five years is around 80 percent (median).

Already in the first year after completion of the project the earnings which are attributable to the project exceed the project cost. In the third year after implementation of the innovation project a supported firm on average makes about one third of its total earnings with a subsidised project. The job impact which can be attributed to the supported projects comprises additional jobs created (12 per cent of firms' total staff) and existing jobs for which the projects have created employment (another 35 percent of firms' staff). In total therefore on average nearly half of a firms' employment are affected by the innovation support program. Although the sample of firms has not been selected at a completely random basis it is justified to consider this policy intervention successful at the level of the individual firms.

The analysis of the indirect impact of the subsidised projects felt by other than the supported firms shows mixed evidence of the program's benefit for the regional economy. For developing and implementing the innovation projects the supported firms order investment goods and research & development services by firms located in the Salzburg area which account for 20 percent of total project cost. Once the innovation project has been completed the current purchases from firms located in Salzburg are very small and account only for 7 percent of the project-related turnover on average. The share of sales to customers in the Salzburg area is even smaller (5 percent). About half of the surveyed firms reported that they cooperate with other firms located in Salzburg but only in very few cases this cooperation has been a continuous one or has reached a significant intensity.

The evaluation of this instrument yielded the following major conclusions for the scope of regional economic policy making:

- First, the scope for regional policy interventions seems here to be narrowly limited. As regional authorities lack the resources to verify the quality of firms' applications for support they rely on the approval by the federal technology fund. This is a pragmatic and economic solution, but by de facto delegating the decision to the federal level it has become difficult to focus the program on specific regional needs.
- Second, the problem that some projects might have been finalised even without support by the program is common to public incentive programs and is not a specific feature of a policy program at the regional level. However the design of the support as a small add-on to a relatively large scale federal support scheme enhances the risk that firms just take the money as a windfall gain.
- Third, the funding of innovation projects entails significant benefits at the firm level but the positive externalities are weak. Although about three quarters of the supported

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innovation projects are related to ICT the results do not suggest that a clustering of ICT-focussed firms in the region is stimulated through this program. For creating such externalities merely giving money has proved to be insufficient.

- This major finding underlines, fourth, the importance of policy evaluation for the regular adjustment of existing programs and for the implementation of complimentary policy instruments.

### **2.3 Improving ICT-related Skills in the Region**

As a means to improve the regional ICT-related skill base a polytechnic university has been founded in 1996; it has been supported substantially since then by the provincial government. Four full-time study programs and three part-time study programs have been established; the curricula are strictly oriented at the demands of the labour market.

The skill needs in the regional labour market and the potential demand for graduates of the study programs have been analysed in several series of interviews with executives of SME and with economic and education policy experts. Firms agree that they shall have to care more intensively about intra-firm and inter-firm networking in the future and that such applications will become more important for their businesses.

Three kinds of key skills for integrating ICT in the economy have been identified in the surveys: First, knowledge about business organisation and management which takes into account the overlap between implementing ICT and organisational development; second, technological competences like a good overview over the technical potential of ICT, and third, social competencies. Most respondents explicitly reported that the curricula in the existing educational institutions would not provide enough training and development of social competences in comparison to the requirements of the labour market.

The results of the firm surveys indicate that the net employment impact of the diffusion of ICT in the regional economy is relatively small because major substitution effects arise. About 80 percent of the business and technology oriented jobs which would be offered to graduates from the polytechnic university tend to replace jobs for which otherwise university and high school graduates would be hired.

The analysis of this policy intervention allows to draw the following major conclusions for the scope of regional economic policy making:

- First, the answers of the surveyed firms which were the major basis of the market study turned out to be somewhat over-optimistic (with hindsight this is not a surprise as the survey was conducted during the time of the new economy hype); thus expectations of the regional job potential were not fully met by outcome.
- Second, the polytechnic universities in principal operate in a competitive environment as they rival among each other and with other educational institutions like the universities. Nevertheless this policy measure goes far beyond merely re-regulating the economy but involves a strong element of direct policy intervention into the market.



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- Third, there exists a potential for a pro-active economic policy intervention at the regional level which aims at improving the conditions for the local economy's adjustment to the ICT-based technological style. Policy intervention at the federal level has been important as it provides the institutional framework for regional policy initiatives by opening the possibility of founding such polytechnic schools in the mid-1990s.
- Fourth, the federal authorities have the legal and executive power in tertiary education, and indeed the federal state partly finances the operation of the polytechnic universities. But the new legal framework has allowed the federal authorities to shift the cost of higher education at least partly to the provincial level.

## 2.4 Supporting Peripheral Regions

The diffusion of ICT might reinforce regional economic disparities as in central areas the key ICT-related industries are located, the market dynamics is strong, and the skill base is developed best. Thus positive externalities which spur economic growth are most likely to occur in central regions, too, and peripheral regions might suffer an at least relative economic backlash. Therefore regional economic policy interventions should aim at a more balanced economic development.

Since the 1980s "village renewal programs" promote the social and economic development mostly in rural or peripheral areas. The provincial government of Salzburg has launched such a village renewal program in 1987 and has been spending approximately 2 million Euro over a ten-year period to support local authorities in implementing village renewal activities. The major macroeconomic policy goal of village renewal programs is to strengthen the economy and to support employment on the regional level. The microeconomic policy goal is to foster local small and medium enterprises; during the program period the emphasis has shifted from supporting traditional craftsmanship to promoting the use and upgrading of local resources in order to increase local value added.

Communities willing to participate in the program have to develop a comprehensive village renewal strategy and have to define village renewal projects. Support under the program is basically restricted to activities which prepare the implementation of village renewal projects. The means of support fall into two broad categories: First, village renewal communities receive subsidies from the provincial government which cover on average five per cent of total project cost. Second, communities receive consultation and guidance throughout the whole process of village renewal by an expert team which ought to ensure the quality of the projects. Furthermore the program administration has been restructured in 1992 in order to facilitate the acquisition of private sponsors to support its activities.

An evaluation of the economic impact of the village renewal program showed that the total net value added (the direct or "first round" impact) which is attributable to village renewal activities in the province of Salzburg amounts to 19 million Euro during the first decade of the program. More than one third of it has been created in firms which are located within the village renewal community that implements the project,

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another quarter in firms which are located in communities within the same district as the village renewal community, and in total 92 per cent of the net value added has been created in firms which are located in the province of Salzburg.

The comparison of the amount of subsidies for village renewal projects with the value added attributable to these projects yields an indicator of the leverage effect of the program. Spending one Euro of subsidy within the village renewal program has resulted in 9,53 Euro direct net value added, thereof 8,75 Euro in the Land Salzburg. The local leverage effect differs significantly across districts: In the peripheral regions one Euro subsidy spent for a village renewal project has resulted in 3,80 Euro net value added within the village renewal community compared to only 2,60 Euro for projects in the central regions. In the peripheral regions one Schilling subsidy has resulted in 6,80 Euro net value added within the same district compared to only 4,39 Euro for projects in the central regions. Although these coefficients are of significant size it has to be born in mind that the total financial volume of the program is small: Adding the first round impacts and indirect impacts due to demand for intermediate goods and increased regional income the village renewal program has released an annual employment impact of 79 jobs (full time equivalents) thereof 54 jobs in the province of Salzburg.

Major conclusions of the evaluation of the village renewal program are:

- First, this measure of regional economic policy can be considered successful although the program's size in terms of finances is small. The regional accuracy of the program in particular has been very high, as a significant part of the net value added is created in firms which are located in the targeted area. It has already become increasingly difficult to maintain that favourable regional accuracy of the program mostly due to the necessity to open the market to foreign competitors as a consequence of Austria's accession to the European Union.
- Second, the organisational structure of the program at the time of evaluation was characterised by a considerable overlap between the activities of the two units which are responsible for the program administration in the fields of public relations and consulting. As a consequence the units were merged in 2003 in order to strengthen the provision of advisory and consultancy services which are considered a major ingredient of the program.
- Third, even if fostering local enterprise is considered primarily as a public task more private financial means ought to be tapped through this program. It seems that the potential for attracting sponsors has not been exhausted fully, yet, as the village renewal program reaches a wide audience with a positive message ("renewal" combined with "traditional values") which is an interesting feature for public relation activities.

## **2.5 Adjusting Place Marketing Activities**

Attracting business investment has become an ever more important issue of economic policy at the sub-national level as investment from outside not only adds to capital accumulation but can also enhance the level of knowledge and technology in an area.

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Private sector firms' flexibility to choose the location of production and provision of services has been significantly enhanced due to the increased use of ICT. This is one of the key features of globalisation which puts pressure on firms as they rely on favourable business conditions thus being permanently forced to seek an optimal location in order to be competitive.

As the scope for financial support has been limited by EU-regulations non-financial support for investors has become more significant in the competition among regions. The business environment or business climate in the area has become a prominent target of economic policy at all levels of government. The municipal government of the City of Salzburg like numerous other regions has established a business service centre which provides business-related services and information about the City of Salzburg which might be of interest for potential investors. The tendency to emphasize non-financial investor support is also reflected by many countries' efforts to undergo regulatory reform and to streamline administrative procedures and public administrations. To provide information which is relevant for location decisions of private firms on the internet is an interesting and widely used tool to attract innovative investors and to facilitate the setup of networks in the regional economy.

A survey of investors yielded a variety of suggestions to fill information gaps and to improve the internet presentation of the business service centre. Some of the major conclusions are:

- First, an important question from a public management perspective is if place marketing activities can be adjusted within the existing technical and organisational structures of the administration ("quick fixes") or if changes require substantial changes of these structures (and/or more funding, of course).
- Second, details of the marketing strategy could be changed easily - and some details have been changed after the evaluation, indeed: A means to cope with information overflow - which investors regard as a major problem - is to focus information on specific target groups (e.g. by providing specific downloads in pdf-format). Another example is the use of the keyword "investor coaching" which is a technical expression among investors. It means that an investor is guided by a qualified employee of the authority ("coach") through all necessary administrative procedures thus significantly accelerating administrative procedures. Such a service is deliberately offered by some regional authorities as a service for potential investors; Salzburg's business service centre also offers such a service but it did not use the term "investor coaching".
- Third, in order to raise the effectiveness of the business service centre's internet-based information a higher degree of autonomy from the city's central administration would be required. As long as most of the maintenance of the webpage is done centrally by the municipal data processing department the required flexibility to respond quickly and to frequently update its webpage is not warranted. The survey also indicated that the business service centre's services are highly esteemed by its clients but the centre is not yet well known even among firms in the region's real estate industry. A more business-oriented marketing and public relations strategy would be justified, but this requires a change from an administrative culture to a service-oriented

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culture. These examples clearly suggest that the thorny part of the adjustment process to the ICT-based technological style goes beyond mere technical adoptions.

### **3. The Scope for Regional Policy: Some Conclusions**

The five regional policy instruments which were discussed are aimed at coping with the structural changes associated with the diffusion of ICT. With respect to the four policy fields which were defined the success of these policy interventions may be judged as follows:

- The model for work time flexibilisation eventually has not been applicable.
- The innovation scheme for SME in principal is a successful intervention as it creates space for experimental initiatives. It yields positive effects mostly at the level of the supported firms but it does not create significant positive externalities; overall it can be considered a moderate success.
- The polytechnic university provides graduates for the regional labour market who are equipped with skills and entrepreneurship needed in the information society. It can turn out as a successful intervention because it could establish a space for the unfolding of entrepreneurship and a creative environment.
- The village renewal program has been a success particularly because of its high regional accuracy. A large part of the program's benefit accrues to the designated regions and therefore it reduces interregional frictions.
- The adjustment of the City of Salzburg's place marketing activities is in progress; quick fixes have been accomplished, but the limitations caused by the business service centre being part of a big public administration are difficult to overcome within the existing organisational structures.

Thus the analysis of these five regional economic policy instruments suggests a differentiated answer to the fundamental question about the potential scope of regional policy intervention in the transition to an ICT-related technological style: Some success stories clearly suggest the existence of such a potential, but even the less successful policy interventions indicate that there is some potential.

The analyses of the instruments underline that a key element which determines the scope for regional policy and its success in the transition to the ICT-related technological style is its appropriate relation to policy at the federal level:

- Some issues obviously cannot be treated adequately at the regional level as the relevant agents are located outside the region or solving the issues would render implications which are considered delicate at the macroeconomic or federal level as the worktime flexibilisation effort indicates.
- The delegation of decisions to the federal level might sometimes be efficient from a microeconomic point of view but at the same time it raises difficulties to meet local needs; the innovation stimulation program for SME is a good example.
- Federal policy interventions sometimes provide new opportunities for regional policy initiatives. But response at the regional level has to be timed properly (e.g. the work time flexibilisation effort came too late) and regional policy makers have to weigh

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carefully the benefit of using the increased scope for regional policy intervention against the economic burden which is shifted to them by the federal authorities (e.g. in the case of the polytechnic universities).

Another result from the evaluation of policy instruments is that merely giving money - public money - is not sufficient for a successful policy intervention:

- This might be of particular relevance for economic policy in the information age in which information is the key resource of economic growth. Complimentary advisory and consultation services - and thus information services - have been most important for the success of the village renewal program and are the key to success in place marketing.
- Policy makers should not bother to use strong elements of direct policy intervention into the market as e.g. the founding of the polytechnic university indicates.
- The village renewal program demonstrates that the scope for policy intervention at the regional level could be extended if the potential for mobilizing private money could be utilised better.
- Policy makers themselves need better information, too. The analyses of the instruments suggest that regular policy evaluation can contribute to in-time adjustment of policy interventions and thus to their success.

Finally and not surprisingly the evaluations show that the impact of individual instruments of regional policy is weak unless there is a comprehensive strategy of regional policy. Economic policy options at the regional level to adapt to the ICT-based technological style seem to be twofold: First, there is a potential for defensive economic policies which largely aim at reducing the negative impact of change on those parts of the public which are hit most severely. These policies include social policy and policies to attain regional equity; in many cases they are of a curative nature.

Second, there is a potential for offensive economic policies at the provincial level. These policies aim at improving the framework for economic growth and development in the region and include innovation policy, the build-up of infrastructure, land use regulation, education and labour market policy, and location marketing. As there is a broad consensus among economic policy makers that innovation is the driving force of economic growth and development, innovation policy has received a prominent role; here systemic approaches suggesting "systems of innovation" dominate both in economic theory (Lundvall, 1992), in economic policy making <sup>2</sup>, and in regional economic policy making (OECD, 2001) in particular.

The systemic view can be applied beyond the topic of innovation, too. Government and the administration are required to perform a kind of "regional policy management" which is much more than the mere execution of law: Co-operation among public institutions, listening to stakeholders, and professionalisation of policy implementation are requirements if the demands of the ICT-based technological style are to be met by the public sector.

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<sup>2</sup> E.g. in the Lissabon Strategy of the European Union.

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POVZETEK

## **Informacijska in komunikacijska tehnologija in regionalna politika: kaj se na primerih instrumentov regionalnih politik lahko naučimo**

*Ključne besede: informacijska tehnologija, komunikacijska tehnologija, regionalna politika, regionalna ekonomska politika*

Članek opisuje izkušnje pri uvajanju instrumentov ekonomske politike v Salzburški regiji za pet izbranih področij. Osnovni instrumenti ekonomske politike, ki so ocenjeni kot pomembni za uspeh ali neuspeh izbrane politike, so bili v proučevanem primeru naslednji:

1. Stopnjevanje fleksibilnosti delovnega časa na nivoju podjetja. Žal v Salzburški regiji instrument ni bil primeren za uporabo zaradi majhnosti podjetij, posebne vloge turizma in oddaljenosti lastnikov firm od regije.

2. Pospeševanje inovativnosti v majhnih in srednjih podjetjih. Večina projektov je temeljila na uvajanju informacijsko komunikacijske tehnologije. Program je bil uspešen samo v firmah, ki so v projektu prejele finančno podporo. Ni pa imel nekega večjega gospodarskega učinka.

3. Izboljšanje usposobljenosti za delo, povezano z informacijsko komunikacijsko tehnologijo. Politehnična univerza je ustanovila štiri redne in tri izredne študijske programe za usposabljanje zaposlenih za uvajanje informacijsko komunikacijske tehnologije.

4. Podpora razvoju obrobni regij. Program je podprl manjša in srednja podjetja na podeželju z namenom pospeševanja gospodarskega razvoja in zaposlenosti. Velja za uspešnega, ker so se pozitivni učinki pokazali pretežno v podjetjih s sedežem v ciljnem področju.

5. Pospeševanje investiranja v regijo, kar ne samo vzpodbuja pritek svežega kapitala, temveč tudi lahko dviga raven znanja in tehnološkega razvoja. Prav večja uporaba informacijske tehnologije omogoča večjo fleksibilnost pri izbiri proizvodnih in administrativnih prostorov gospodarskih organizacij v regiji.

Študija kaže, da je vpliv posameznih instrumentov na regionalno politiko slab, če ni vzpostavljene primerne regionalne politike. Vlada in uprava morata opredeliti neko vrsto "menedžmenta regionalne politike", ki ni samo izvajanje zakona, temveč mora vključevati kooperacijo med javnimi ustanovami, upoštevanje želja in potreb vlagateljev in profesionalizacijo izvajanja politike. Vse to so dejavniki, ki jih je treba upoštevati ob uvajanju informacijsko komunikacijske tehnologije v delovanje javnega sektorja kot ključnega dejavnika ekonomskega razvoja regije.