

## INTRODUCING OF SMART WORK – OPPORTUNITY TO INCREASE ECONOMIC DEVELOPMENT OF MUNICIPALITIES IN LATVIA

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**Abstract.** The research focused on analysis of smart work, its advantages and disadvantages. The aim of the research is to verify hypothesis that introducing of smart work will promote economic development of municipalities in Latvia and that people in municipalities are ready to do smart work. Analysis of economic development of Balvi municipality (Latvia) shows that there are economic problems that can be solved by introducing of smart work in the municipality. Survey of Balvi population shows that people in this municipality are ready to work smart and to do distant work in Smart Work Centres (SWC). Smart Work Centre will increase development of Balvi municipality, it will provide new working places, decrease unemployment and will help maintain population in the municipality.

**Key words:** smart work, regional development, municipality.

**JEL code:** R 110

### Introduction

Unequal regional development is one of the main problems in Latvia. Therefore, it is necessary to find solutions how to increase economic growth in each region. It is possible to find out advantages and disadvantages of every region. It is also possible to find out benefits from smart work and also disadvantages of smart work for three main society groups – employers, employees and government.

The aim of the research is to verify the hypothesis that introducing of smart work will promote economic development of municipalities in Latvia and that people in municipalities are ready to do smart work. The main tasks are to study the concept of smart work, to define its benefits and disadvantages, to evaluate economic development of Balvi municipality and to find out the opinion of Balvi municipality's population about possibility to work smart.

Research methods are analysis and synthesis, quantitative data analysis, comparison, graphical methods, survey.

### Concept of smart work

The nature of economy has been changing during last centuries – from the agriculture age in 18th century to the information era nowadays. Nations and enterprises are increasingly aware of the importance of being ahead of the next so called 'wave' of innovation. If during the recent wave of innovation ICT was driven by market

needs such as reducing transaction costs, significant evidence exists to state that the next waves of innovation will be driven by the need to simultaneously improve productivity whilst decreasing negative environmental impact on the planet (The Natural Edge Projects, 2004).

The development of ICT gives advantages for private and public sector. Electronic flows of documents in the public administration can increase efficiency and transparency. Business climate is affected positively by e-development. It improves general quality of services across industries and sectors of the economy and creates opportunities for cross-country and cross-sectorial development (Carayannis E. G., Von Zedtwitz M., 2005). Development of ICT and reaching of 5th and also future 6th wave of innovations is the basis for smart work development. For example, development of ICT has encouraged the development of companies that offer such services as customer catering using ICT, as well as gathering, storing, processing and selling of information in the North of Sweden (Nuur C., Laestadius S., 2009). Innovation is well at work when it reaches strong, on-going and diversified community support along with rigorous evaluations (Bernard M.-M., Fruhwirth M., De Mareul Willete C., 2015). But ICT will not automatically stimulate the regional or rural economy. The technologies should be integrated

in the rural economies according to the needs of local inhabitants and entrepreneurs.

The past six generations have resulted in the most rapid and profound change the mankind has experienced in the 5000 years of its recorded history (Gratton L., 2011). This has led also to the transition in the way of working. An increasing share of businesses and other organizations are keen to use smart work (telework, distant work, e-work, mobile work, remote work) - a wide-spread practice that allows employees and their tasks to be shared across settings away from central place of business or physical organizational location (Robertson M., Vink P., 2012). Organizations have increasingly implemented smart work arrangements for various reasons. Smart work may not only reduce costs for office space and travel in large countries with long distances and in cities with crowded traffic, it may also help companies attract and retain a highly qualified workforce (Beham B., Baierl A., Poelmans S., 2014).

New ICT solutions, rapidly developing technologies as well as managerial changes can facilitate an increasing proportion of smart workers. Smart work is the way how enterprises and public authorities can become more progressive. They will allow their employees to join together work, private and social life – not only domestic life but also participation in nongovernmental or political organizations, cultural activities that allows people to express themselves as social beings (LBAS, 2010).

A research enterprise Capgemini defines smart work as *"an approach to organising work that aims to drive greater efficiency and effectiveness in achieving job outcomes through a combination of flexibility, autonomy and collaboration, in parallel with optimising tools and working environments for employees"* (Capgemini, 2008).

But there are various approaches for defining smart work. Some of them hold a view that

smart work is employment when only IT and network of data transmission is used (concept used in the USA). The others accept smart work as any job, even not concerned with the use of IT and data transmission, inter alia, all forms of self-employment (concept used in the EU). But in recent years International Labour Office begins to separate smart work and self-employment to apply different political instruments for smart workers and handicraftsmen (Telework Analytics International, 2013).

The latest concept of smart work is concerned with working anywhere, any time but it needs strong intrinsic motivation (Boorsma B., Mitchel S., 2011). Working in Smart Work Centres (SWC) is considerably new way of doing smart work or telework.

### **Benefits and disadvantages of smart work**

If elaborated, implemented and managed effectively, smart work approaches and SWCs can be successful and can return numerous benefits. Successful companies have vision on work as an activity, not a place. Smart work gives the opportunity to work more efficiently and to offer a better service to the client and to foresee longer service/opening hours. Smart work can give the opportunity to redesign and simplify the work processes too. Main benefits from smart work for an employer are summarized in Table 1.

Smart work adoption in companies is rather often met with resistance. The main disadvantages are:

- it is difficult to control employees, process of work;
- agreements need to be made about the hours during which the distance worker needs to be accessible by telephone or by mail, and the e-work days must be carefully selected in order not to impede daily operations;
- safety of information and produced product. The e-worker remains responsible for the correct use and management of material and

the information put at his/her disposal by company.

Main benefits from smart work for an employee are summarized in Table 2.

Table 1

**Main benefits from smart work for employers**

<b>Economic benefits</b>	<b>Social benefits</b>
1) If employer's business is in an expensive area, distance working can save employer a lot of money. If employees live in areas with a low cost of living and good internet connectivity, they can afford to accept relatively low salaries 2) Rent cost reduction due to reduced office space requirements 3) Decrease in furniture costs due to reduced working places 4) Improved productivity 5) Less purchase costs of ICT 6) Public utilities payment reduction (employees may consume less energy at work for heating and lighting, sewerage) 7) Less staff training	1) Recruitment and retention of staff – it is possibility to attract good specialist, who otherwise will not work in this office (no possibility to pay so big wage / specialist is living far from the office / the office is located in rural area, where are not good specialists) 2) Adherence to company's regulations and increased organizational commitment 3) Reduced absenteeism 4) Better service (longer service / opening hours) and opportunity to offer more flexibility 5) Promoted diversity 6) Decrease of production time: short time between customer's order and product delivery 7) New channels of service distribution and an increase in market reach

Source: authors' construction

Table 2

**Main benefits from smart work for employees**

<b>Economic benefits</b>	<b>Social benefits</b>
1) Money saving on fuel and parking 2) Money saving on public transport tickets	1) Improved quality of life and work life 2) Better work/family balance 3) Increased job satisfaction 4) Increased autonomy 5) More flexibility 6) Quiet rooms or areas to allow for uninterrupted time 7) Holding meetings only when necessary 8) Ability to speak up about concerns without fear of retaliation 9) Reduced commute time 10) People with disabilities/health problems can work 11) Child care issues less stressful. Lower stress level 12) Mentoring opportunities 13) De-routinization of work 14) Possibility of living in rural areas while retaining challenging jobs in the knowledge economy traditionally linked to metropolitan areas

Source: authors' construction

Employees usually indicate time gain and efficiency as the most important advantages. These were mainly caused by less living-working traffic and better concentration at the distance work place. An improvement of work/life balance was indicated as well as an increase of independence and of working by planning. The disabled can cooperate in the labour process.

Transport can be a problem for this particular group. The possibility to work in an adapted home workplace can attract more people of this group of possible workers.

Compared to office-based employees, smart workers experienced higher job satisfaction, less work-life conflict and higher productivity. From

the perspective of the employee the main disadvantages are:

- less contact with the team- less communication with supervisors and colleagues;
- it is difficult to find balance between private life and work for some smart workers;
- ICT problems. It depends on individual skills and specific PC programs;
- reduced informal mentoring, informal training and development;

- career development and promotions;
- reduced informal communication;
- interruptions from home.

The smart work extends into a wide range of areas of political responsibility and public administration. Government policy plays an important role. Smart work may be a specific target for development strategies in the context of regional economic planning. Main benefits from smart work for local municipality are summarized in Table 3.

Table 3

**Main benefits from smart work for local municipalities**

Economic benefits	Social benefits
1) Growth of productivity 2) Multiplier effect increases 3) Increase of revenues in the local authority budget from income tax due to people staying, living and working in rural area	1) Activation of entrepreneurship 2) Better availability of job places, services and reduction of inside emigration 3) Reduction of transport intensity will incur (air pollution reduction; traffic congestion reduction; traffic accident reduction) 4) Local and regional development 5) Region becomes more attractive place for people staying and living there

**Source: authors' construction**

Smart work can help increase economic development of regions and local municipalities. Technology companies have been predicting that smart work — performing work from home or another remote location — soon will become the most common mode of work (Telework, 2011).

#### **Economic development of Balvi municipality**

Economic development of Balvi municipality in comparison with other municipalities of Latgale statistical region is evaluated using simplified formula (Formula 1) of Regional Competitiveness Index (RCI) and method of regional competitiveness evaluation worked out by authors (Judrupa I., 2011).

$$RCI = \frac{1}{N} \left( 2 * \frac{f_1 - f_{\min_1}}{f_{\max_1} - f_{\min_1}} - 1 \right) + \dots + \left( 2 * \frac{f_n - f_{\min_n}}{f_{\max_n} - f_{\min_n}} - 1 \right) \quad (1)$$

where:

RCI - regional competitiveness index;

$f_1 \dots f_n$ - real values of indicators;

$f_{\min} \dots f_{\max}$ - minimal and maximal values of indicators;

N – number of indicators.

The matrix of competitiveness level and growth rate was developed to define which factors are facilitating or impeding development (Figure 1).

<i>Competitiveness level</i>	1	+∞
	-∞	-1
	<b>FACTORS POTENTIALLY IMPENDING DEVELOPMENT</b>	<b>FACTORS CURRENTLY FACILITATING DEVELOPMENT</b>
	<b>FACTORS CURRENTLY IMPENDING DEVELOPMENT</b>	<b>FACTORS POTENTIALLY FACILITATING DEVELOPMENT</b>
		<i>Growth rate</i>

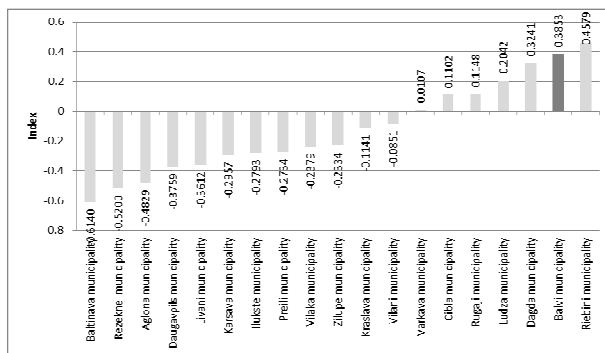
Source: Judrupa I., 2011

Fig. 1. Matrix of the factors affecting development in regions

Figure 1 shows that the factors currently facilitating development are the factors that have been with a positive growth and have ensured the region's indicator above the average development level. The factors currently impeding development are the factors that showed a negative growth and determined the region's ranking below the average development level. If the factor influencing development in regions is above the average compared to other regions but the trend of its development is

negative, the region can become less developed, if this trend remains the same in future. Such factors potentially impede development. If the indicator influencing development is comparatively low (below the average level) but with a tendency to improve, the factor can facilitate development if this tendency persists in future. Such factors can potentially facilitate development.

Figure 2 contains values of RCI for local municipalities of statistical region of Latgale.



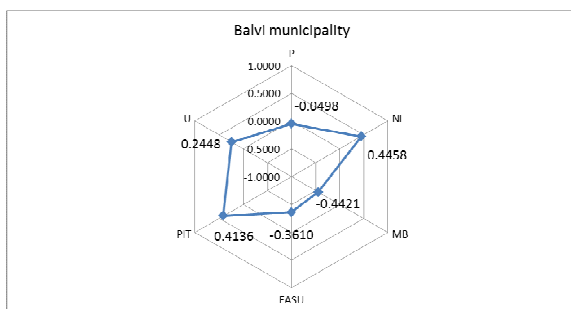
Source: authors' construction based on authors calculations

Fig. 2. Values of RCI for local municipalities of Latgale statistical region, 2014

Figure 2 shows that Balvi municipality took the 2nd place among other municipalities of Latgale statistical region. The value of RCI in 2014 was 0.3853. Balvi municipality is one of the economically developed municipalities of Latgale statistical region but in the scale of Latvia its competitiveness is considerably lower than competitiveness of municipalities of other statistical regions.

The most and less developed spheres in Balvi municipality, which were evaluated using indicators of RCI, are shown in Figure 3.

Figure 3 shows that the most competitive fields of Balvi municipality consist of rather high revenue from personal income tax, comparatively low level of unemployment and comparatively high natural increase of population (but in Balvi municipality this indicator is still negative). One of the important problems is negative migration balance – it means that people are tended to leave municipality.



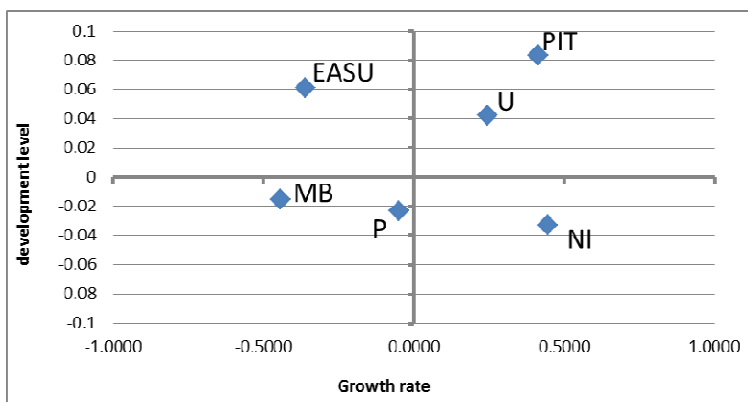
**P** – population;  
**NI** - natural increase per 1000 inhabitants;  
**MB** - migration balance per 1000 inhabitants;  
**EASU** - economically active statistical units of market sector per 1000 inhabitants;  
**PIT** - revenues per person from Personal Income Tax in municipalities' budgets, EUR;  
**U** - level of unemployment, %.

Source: authors' construction based on authors' calculations

Fig. 3. The most and less developed fields of Balvi municipality, 2014

Using matrix of development influencing factors for Balvi municipality helps pointing out

main factors that facilitate or impede economic development of the municipality (Figure 4).



Source: authors' construction based on authors' calculations

Fig. 4. Matrix of the factors influencing development in Balvi municipality, 2014

Figure 4 shows that the factors currently facilitating development in Balvi municipality in 2014 were comprised of comparatively low level of unemployment and revenue from personal income tax in the budget of municipality. These indicators have values above the average and have positive trend. The factor potentially facilitating development is a natural increase of population, because the value of this indicator is below average but it was a tendency of improving. The factors currently decreasing development are negative migration balance below average, as well as small number of population, which continues to decrease. The factor potentially impeding development in future would be economically active statistical units of market sector, because the amount of enterprises is now above average but it has negative trend.

Development of SWC and introducing of smart work could help improving the situation in Balvi

municipality almost in all indicators. A survey was conducted to find out the opinion of population of Balvi municipality regarding smart work.

#### Main results of survey regarding smart work in Balvi municipality

The survey was conducted during the period of 27.06.2012 and 21.10.2012 with a participation of 169 respondents from Balvi municipality. The smart work is the way to improve social and economic situation for individuals and it is obviously proved by results of the survey. Eighty one per cent of inhabitants from Balvi municipality participating in the survey were interested in the smart work. Twenty six per cent thereof were aged between 18 and 30. Only 5% were not interested to distant work. So, the population expressed interest about this new way of working, especially young people.

It is possible to do smart work from different places – home, library, SWC and others. Is it

necessary to establish SWC in Balvi municipality to promote this way of working? This was also one of the questions of survey. Both types of smart work have their own advantages. Choosing a method of working requires for everybody to evaluate advantages and disadvantages of telework, personal touches and specific features of the work. Sixty one per cent of all surveyed inhabitants of Balvi municipality preferred working from home, while twenty six per cent of population was ready to work in SWC. The main reasons for choosing to work at SWC were:

- possibility to use Xerox, scanner, printer - 53 %;
- well-equipped working space (PC, Internet) - 46 %;
- possibility to get consultations about starting and developing of entrepreneurship - 37 %;
- chance to meet other people who do the same work - 34 %;
- possibility to search for job - 31 %.

Sixty one per cent of all population pointed out private benefits from smart work – possibility to spend more time with family and flexible working hours. Thirty seven per cent mentioned economic benefits as most important. Analysis of survey results shows that population in Balvi municipality is ready to do smart work, and a part of them is willing to work at SWC.

### **Conclusions, proposals, recommendations**

1) ICT development is the base of smart work, and now it is the best time to introduce smart work because society has reached the 6th innovation wave.

2) ICT development, implementation of smart work approach and establishment of smart work centres can create new jobs for people with different qualification and skills in rural areas. The availability of new jobs and services increases people's willingness to stay and live in native country even if it is located in the rural area. Consequently, the region

enhances its economic and entrepreneurial competitiveness.

3) According to results of questionnaire, employees indicate time gain, efficiency and an improvement of work/life balance as the most important advantages. Enterprises are also interested in implementing smart work approach. They can save money by transferring production (service) from the city to the rural areas where rent and wages are lower. Companies usually want to maximize profit trying to be innovative and elastic. This is one way to maximize profit using modern personal management. Smart work adoption in companies is sometimes met with resistance mostly due to unawareness and distrust. Therefore, the initiative of municipality and cooperative strategy between entrepreneurs, employees and municipality is crucial for smart work implementation in the region. Smart work can help increasing economic development of the regions and local municipalities.

4) The factors currently impeding development in Balvi municipality are comprised of negative migration balance below average as well as small number of population which continues to decrease. Establishing of SWC and introducing of smart work could help improving the situation in Balvi municipality in almost all indicators:

- decrease unemployment level;
- increase incomes from personal income tax;
- improve migration balance;
- increase number of economical active statistical units of market sector;
- improve natural increase.

5) Survey of population in Balvi municipality regarding smart work and necessity of SWC shows that the population in Balvi municipality is ready to do smart work, while a part of them is willing to work at SWC. Smart Work

Centre will increase development of Balvi decrease unemployment and help maintaining  
municipality, create new working places, population in the municipality.

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