TWINNING CONTRACT

Support to Statistics

Kosovo

MISSION REPORT

on ICT usage and e-commerce in enterprises

Component no 3.4.7

Mission carried out by
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Pristina 25-28 January 2016

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List of Abbreviations

KAS   Kosovo Agency for Statistics
ToR   Terms of Reference

Executive Summary

There is an uncovered need for ICT statistics in Kosovo e.g. expressed by ministries and enterprises depending on ICT take up by other enterprises. Statistics for the demand side of ICT, does not exist for the enterprises in Kosovo. As far as households are concerned, a pilot survey is planned to be carried out in 2016 in cooperation with Eurostat.

KAS has the capacity to perform an EU compliant survey of ICT usage in enterprises in terms of methodological knowledge and software. The business register of KAS will form a good basis for sample and weighting and introduction of a new survey requires no approval outside KAS.

During the mission the international framework, methodology and contents have been discussed as well as concrete survey experiences in Kosovo and Denmark have been exchanged.

A tentative time schedule for a pilot survey of ICT usage in enterprises has been prepared in cooperation with KAS during the mission.

1. General comments

This mission report was prepared within the Twinning Project „Support to Statistics". It was the first mission to be devoted to ICT usage in enterprises within Component 3.4.7 of the project. The mission was aimed at defining a strategic plan forming the base of the further implementation of the project in this statistical area.

The concrete objectives of the mission were:
- Description of present work on ICT statistics in KAS
- Providing recommendations for development of a survey on ICT usage in enterprises according to EU standards
- Propose a road map for implementation of a survey developed

The EU standards are documented, among other places, in the framework regulation re. statistics on the information society (808/2004 plus amendment 1006/2009), the annual model questionnaires and the corresponding annual Methodological manuals and implementing measures (legal text on annual contents).

An important step towards a survey on ICT usage in enterprises is an updated and complete business register, an activity that has been object for earlier missions in this Twinning project.

The consultants would like to express their thanks to all officials and individuals met for the kind support and valuable information which we received during the stay in Kosovo, and which highly facilitated the work of the consultants.

This views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, KAS or Statistics Denmark.

2. Assessment of the current situation

During the mission the national experts have been given four presentations:

1. EU regulation and international co-operation
2. ICT usage in enterprises Themes and Model Questionnaire
3. ICT statistics in Denmark
4. ICT usage in enterprises - methodological aspects

A tentative time schedule for a pilot survey has been prepared in cooperation with KAS.

An informative and engaged discussion between KAS and MS experts during the mission has provided valuable input for the mission report and the future work.

Present situation on ICT statistics at KAS

ICT supply side

Statistics on Information Society, presently collected by KAS, include information on the supply side, i.e. in the information collected as part of the SBS covering activities that can be grouped as the ICT sector (e.g. telecom companies, hardware and software producers, wholesale companies trading with ICT, and ICT consultancy firms). Until now, statistics have not been published with this particular focus, but this is possible on the basis of existing data in the SBS. The twinning project has had several activities related to SBS statistics.

ICT usage
- Statistics for the demand side, covering the take-up of ICT, does not exist for the enterprises in Kosovo.
- As far as households and individuals are concerned, a pilot survey is planned to be carried out in 2016 in cooperation with Eurostat. The objectives are to develop EU harmonised household survey(s) on the use of ICT in households and by individuals. Individuals aged 16-74 years will be covered. Microdata will be transmitted to Eurostat using standard systems and formats. A quality report on the pilot survey is expected by November 2016.
- Data regarding the ICT usage by the public sector is not available today.

Business Register

The Business Register has been the focus in several missions under the twinning project. It is our assessment that the KAS Business Register provides a good foundation for carrying out a survey on the ICT usage and e-commerce in enterprises.

The Business Register covers all enterprises, it is updated regularly, and it contains the background information that is necessary for defining the population, drawing the sample, raising the results (e.g. NACE activity, turnover and employment data) and for more practical matters related to data collection (e.g. name, address, etc.).

User needs

KAS expresses a need to make the statistical system compliant with EU standards, including a possible new survey on ICT usage in enterprises.

There is a user need for a survey on ICT usage in enterprises expressed by the business sector, especially among bigger enterprises that need the information on the take-up of ICT usage in order to assess their investments in e-commerce and other digital business models. Also from political level a need for data has been expressed, in particular from the Ministry for Economic Development.

Other needs on information statistics have only been touched briefly during the mission. A need for developing statistics on the household sector has so far been addressed by the planned pilot survey (see paragraph on existing statistics). There may also be a need for expanding the telecommunication statistics with data on connections and capacity.

Data collection and organising surveys

This section describes the present situation and ways of organising data collection, including technological aspects, based on discussions of these issues during the mission.

The data collection for enterprise surveys is in most cases carried out outside of KAS by an independent, private sector company.

The company receives a list of companies that are included in the survey sample, along with the paper questionnaire to be used. The company then handles the data collection process with letters to enterprises etc. Currently, the respondent enterprises typically receive one letter requesting information for the particular survey. Reminders, by mail or telephone, are normally not used.

KAS receives the filled-in questionnaires, and the data is subsequently typed in by KAS employees, using a data entry typing solution developed for the particular survey. Error correction and possible re-contact to the enterprise is done by KAS, which also is contacted if respondents have questions to the contents of the surveys.

The above model, including use of paper-based questionnaires, is expected also to be the relevant for a survey on ICT usage in enterprises.

KAS currently uses several software tools in the production of business statistics (such as "R", SQL, Excel), and a combination of these would be fine in the technical set-up for a survey on the ICT usage in enterprises.

Framework conditions

Typically business statistics questionnaires in Kosovo are mandatory to respond to for enterprises. In practice the law is rarely enforced in form of fees or other sanctions to the enterprises. For a rather demanding questionnaire such as SBS the response rate is about 60%, but is expected to be higher for a future ICT survey due to the more limited number of quantitative questions.

There is no official system of warning enterprises before participating in a survey. Introduction of a new survey requires no approval outside KAS and no advance notification of enterprises or outside stakeholders.

A new survey can in principle be carried out without hearing of external stakeholders, but is considered a possibility by KAS in the process of choosing relevant content.

Resources

It is common to finance smaller surveys or pilot surveys from the internal budget of KAS. However, in the case of a new full-scale ICT usage survey it may be relevant to seek extra financial support, e.g. for a more comprehensive data collection and treatment.

3. Conclusions and recommendations

Proposal for a pilot survey

KAS has the capacity to perform an EU compliant survey in terms of methodological knowledge and software.

The MS experts recommend that KAS make a pilot survey the first year in order to receive feedback on the questionnaire and its' translation. A pilot would also be useful to build up the software system for processing data in a future full-scale survey. Furthermore, a pilot survey can help to create positive attention and support from national users of ICT statistics and other stakeholders.

The pilot should make use of all methods recommended for a full-scale EU survey on ICT usage in enterprises, except from a smaller coverage of enterprises. These elements are described briefly in the next paragraph and were discussed more extensively during the mission (presentations have been shared with KAS). Further methodological information is available in the annual EU model questionnaire and the methodological manual for the survey.

The enterprises selected for the pilot should broadly represent enterprises in Kosovo, covering a variety of smaller and bigger enterprises from different industries. The strata used for sampling and weighting may be more coarse than those used for a future full-scale survey as the number of enterprises otherwise could be too small for the subsequent weighting of the results. It is thus suggested to choose a relatively small number of enterprises from different strata groups.

However, it is a consideration to make coverage of the largest enterprises as in a full-scale survey –
e.g. include all enterprises with 100+ employees. This will give the possibility to publish the first

statistical results on ICT usage in larger enterprises already based on the pilot survey, thus starting a time series already from 2016.

If such a pilot is decided by KAS to start spring 2016, it is estimated that the methodological results will be ready by end of 2016 and that the experience could benefit a possible full-scale survey already from 2017. A tentative time schedule for a pilot has been developed by KAS in cooperation with the MS experts during the mission (see annex 5).

Methodological recommendations

The following contains our recommendations related to a pilot survey and a full-scale survey.

Questionnaire contents
It is recommended to follow the model questionnaire from Eurostat both in the pilot survey – to gain as much experience from this testing situation as possible – and in a full-scale survey. The EU questionnaire contains some questions that Member States may include, but are not required to include. If these questions should be included in the pilot or full-scale surveys should be determined on the basis of available resources as well as national interest in the non-mandatory indicators.

It is our recommendation that KAS in preparing for the pilot survey consider going into a dialogue with key national stakeholders or users of KAS data on ICT usage for policy purposes. This can be important to clarify what are the national data needs from policy makers, and indeed it may result in the identification of important data needs that would not be met by using the model questionnaire only. Thus, KAS may enter a discussion with for example the Ministry for Business Development on the possible inclusion of a limited number of additional national questions for the questionnaire. Moreover, engaging with key stakeholders in preparation of the pilot survey may be an important way of garnering support and generating interest for work in this field, including a full-scale survey at a later stage.

Frame (population) and sample design
The pilot survey should be designed so that it will give as much information and an experience for KAS before a full-scale survey is launched. Therefore, it is recommended that the pilot survey covers enterprises in different size classes, i.e. small and medium-sized as well as large enterprises. The pilot survey should also cover enterprises in within different NACE sections. The main objective of this stratification is not to get a fully representative sample, but rather to cover different types of enterprises, that are likely to be different with respect to ICT usage and e-commerce. For the pilot survey, the stratification does not have to be as detailed as it will likely be in a full-scale survey. The number of enterprises should be limited, for example to 20 enterprises within each of the mentioned size classes.

In addition to this, we recommend that KAS considers the possibility of covering all enterprises with 100 or more persons employed. This may provide the possibility of publishing some results for this group of enterprises, if the pilot survey goes well and KAS believes the data for this group to be of sufficient quality.

For a full-scale survey, we recommend to define the population according to EU requirements at the time of conducting the full-scale survey. For the EU 2016 these requirements are as follows:

Economic activity:

Enterprises classified in the following categories of NACE Rev. 2:

- Section C –   *"Manufacturing"*;
- Section D, E –   *"Electricity, gas, steam and air conditioning supply"*
                           "Water supply, sewerage, waste management and remediation activities";
- Section F –   *"Construction"*;
- Section G –   *"Wholesale and retail trade; repair of motor vehicles and motorcycles"*;

- Section H –   *"Transportation and storage"*;
- Section I –   *"Accommodation and food service activities"*;
- Section J –   *"Information and communication"*;
- Section L –   "Real estate activities";
- Division 69 - 74 –   *"Professional, scientific and technical activities"*;
- Section N –   *"Administrative and support service activities"*;
- Group 95.1 –   *"Repair of computers and communication equipment"*

Enterprise size:

Enterprises with 10 or more persons employed.

Geographic scope:

Enterprises located in Kosovo.

It is recommended that the sample be drawn by simple random sampling within strata based on size class and NACE activity. If geographical distributions of results are considered important for national policy purposes, this may be used to subdivide strata. It is important, however, not to make the stratification too detailed.

Size classes for stratification are recommended to match as a minimum the ones required by the EU (enterprises with 10-49, 50-249, 250 or more persons employed), but it is important that they also reflect the level at which results are to be published and/or are requested by national users, reflecting in part also the structure of the private sector in Kosovo. This could be a stratification by 10-19, 20-49, 50-99, 100-249 and 250+, as for example in Denmark.

NACE breakdown for stratification should also reflect the level of detail in dissemination of results as well as the economic structure, and moreover should match the requirements by the EU for the particular reference period. For the 2016, data with sufficient quality to allow for publication of individual Member State results should be delivered for the following NACE breakdowns:

1	10 - 18		9	49 - 53
2	19 - 23		10	55
3	24 - 25		11	58 - 63
4	26 - 33		12	68
5	35 - 39		13	69 - 74
6	41 - 43		14	77 - 82
7	45 - 47		15	26.1 - 26.4, 26.8, 46.5, 58.2, 61, 62, 63.1, 95.1
8	47			

Furthermore, for the 2016, data with sufficient quality to allow for publication of EU level results should be delivered for the following NACE breakdowns:

1a	10 - 12		7b	46
1b	13 - 15		10a	55 - 56
1c	16 - 18		11a	58 - 60
4a	26		11b	61
4b	27 - 28		11c	62 - 63
4c	29 - 30		14a	77 - 78 + 80 - 82
4d	31 - 33		14b	79
7a	45		15a	95.1

Data collection
It is our impression that data collection works well. It is our recommendation that KAS considers using reminders to increase the response rate in a full-scale survey, in order to improve the quality of results.

Data entry, validation and correction
For the pilot survey KAS should have in place a system for data entry, validation and correction. It is our recommendation that the system should be constructed, taking into account that it should potentially be used for the full-scale survey at a later stage.

On validation and error correction, KAS should follow the Eurostat principle for the ICT usage statistics of not imputing in case of missing items (item non-response), and Eurostat's Methodological Manual for statistics on the Information Society referring to the relevant period should be consulted. A number of validation and error correction aspects were discussed during the mission, which KAS could also consider developing/using, including micro-level automatic correction (for example of filter-sub question consistency or employee percentages), micro-level manual checks and possible re-contacting of enterprises (for example outlier detection for e-commerce turnover, internal consistency checks, etc.) and macro-level checks to look for possible errors in data by looking at tabular results produced on the data that has been received at different points in the process.

Weighting/raising results

Use of the business register not only for sampling, but also for weighting and control will be important for the quality and representativeness of the results of an ICT survey of enterprises.

The Methodology has been discussed during the mission and KAS has the relevant knowledge to carry out these activities. Weighting can be done by simply calculating the ratio between the approved responses and the survey population (both corrected for inactive enterprises).

- For all qualitative variables (mainly yes/no questions) the observations are weighted by the number of enterprises in the stratum to which they belong.
- For quantitative variables (in general collected in percentage terms, e.g. percentage of persons employed using computers, percentage of turnover resulted from orders received via computer networks) observations will be weighted by the base variable of those percentages, i.e. by the number of persons employed if the variable is percentage of persons employed, by the total turnover if the variable is percentage of turnover, etc.

Another possibility is to use specialized software, such as CLAN to make regression based weighting, which will produce one uniform weight regardless of type of variable.

For a pilot though the weighting will rather be an exercise as the number of enterprises will be insufficient in most strata to produce representative results (large enterprises as a possible exception).

Annex 1. Terms of Reference

EU Twinning Project
KS12 IB ST 01
Support to Statistics

Terms of Reference:

Component 3:   Business Statistics
Activity 3.4.7:   Short term statistics surveys IV – ICT usage and e-commerce in enterprises

Scheduling:
ToR –ready date: **22 December 2015**
Start / end of activity: **25-28 Januar 2016**
Reporting time: **4 februar 2016**

Mandatory result of the component:

Mandatory Result	Intervention logic	Benchmarks	Sources of information	Assumptions
Mandatory Result 3.4.7	**Short Terms Statistics Surveys IV - ICT**	• Mission report uploaded on project homepage • Recommendations for development of survey questionnaire, methodology and sampling frame given • Road map for implementation of survey developed	• Twinning quarterly reports • Mission Report • Roadmap • EU model questionnaires • UN core indicators (?)	• Sufficient absorption capacity • Access to administrative and survey data • Low turn-over of staff involved in implementation • Staff works on project related tasks before and after mission

Subject / purpose of activity 3.4.7:
Recommendations on questionnaire, sample and survey methodology regarding survey on ICT usage and e-commerce in enterprises.

Expected output of activity 3.4.7:
Mission report – describing the status of the work with ICT usage and e-commerce in enterprises. Recommendations for development of survey questionnaire, methodology and sampling frame, with special attention on EU regulations and model questionnaire. Mission report should also propose action to be taken at KAS to develop these statistics.

KAS resources:
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Description of the background for the activity

The AGA report states that the European Short-term Business Statistics comprise monthly and quarterly economic indicators. Short-term data on all service activities are also to be provided.
KAS started with first quarterly pilot surveys only in 2010. The surveys cover variables for the sectors Industry and Construction according to NACE Rev.1. The sampling frame is the Statistical Business Register, which is being improved with help from Twinning.

Further it is stated that as KAS started with STS statistics only in 2010, it is clear that there are remaining challenges which have to be solved before any output with sufficient quality can be produced. KAS will need further support to complete the pilot and to develop a full
scale survey.

In the first Twinning mission on Business Statistics, "Overall Assessment of Business Statistics and Prioritization of Actions (3.1.1)" the two Danish experts Peter Ottosen and Søren Netterstrøm described the situation for STS.

If any data collection exist for IT already it will be necessary to evaluate the current data collection methodology and questionnaire with a view to EU-regulations.

A long term development plan for a survey on ICT usage and e-commerce in enterprises statistics should be prepared in order for KAS to fulfil the requirements of the EU-legislation.

Activities to be undertaken in preparation for the mission:
List of attached documents
- Adapted Global Assessment report (AGA)
- Program of official statistics 2013 -2017
- Strategic Development Plan 2009- 2013
- All reports from the Twinning projects can be found at www.dst.dk/kosovo
- Translation of relevant EU documents, e.g. model questionnaire(s).
- Translation of relevant information on exisiting ICT usage surveys in Kosov to be sent to MS experts one week before the mission begins.

If any relevant background information is available KAS must supply this to the experts one week before the mission takes place.

The expected activities are:
- Review of relevant existing resources, statistics and registers
- Review of themes and EU indicators for a future model questionnaire

- Review of survey methodology and sampling
- Development of a plan for actions to be taken by KAS on ICT usage and e-commerce in enterprises.

Expected output:

- Mission report – according to template
- Review and recommendations on questionnaire and methodology on ICT usage and e-commerce in enterprises statistics
- Recommendations on the way ahead for KAS after the Twinning

Annex 2. Persons met

KAS:
Ismail Sahiti, Head of Business Statistics Division, ismail.sahiti@rks-gov.net
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RTA Team:
Per Knudsen, RTA
Nora Zogaj, RTA Assistant

Annex 3. Programme for the misson

(annex 1 of ToR)

Day	Place	Time	Event
1	KAS	10.00	Introductory remarks to this part of component 3
		09:45	KAS: Overview of the work with ICT usage and e-commerce in enterprises in Kosovo with focus on those parts of the system where improvements are asked for
		10:30	Coffee break
		11:00	MS: Introduction to the ICT usage and e-commerce in enterprises statistics Plan for the next days
		12:00	Lunch break
		13:30-16:00	MS: ICT usage and e-commerce in enterprises statistics: EU regulation and model questionnaire(s)
2	KAS	09:00	Continued - MS: ICT usage and e-commerce in enterprises statistics: EU regulation and model questionnaire(s)
		10:30	Coffee break
		11:00	Continued - MS: ICT usage and e-commerce in enterprises statistics: EU regulation and model questionnaire(s)
		12:00	Lunch break
		13:30-16:00	MS: ICT usage and e-commerce in enterprises statistics: Survey methodology and sampling
3	KAS	09:00	MS: The work with ICT usage and e-commerce in enterprises in Denmark – the organization of the work and the data sources
		10:30	Coffee break
		11:00	Continued - MS: The work with ICT usage and e-commerce in enterprises in Denmark – the organization of the work and the data sources
		12:00	Lunch break
		13:30-16:00	Workshop: Action planning/preparation of mission report
4	KAS	09:00	Ad-hoc and hands-on meetings: Wrapping up
		10:30	Coffee break
		10:45	Workshop: Agreement on recommendations and time plan
		12:00	Lunch
		15:00	Debriefing with BC Project Leader: Recommendations, time plan and implied work program for BC

Annex 4. Presentations and background documents

Presentations given during the mission
1. EU regulation and international co-operation
2. ICT usage in enterprises Themes and Model Questionnaire
3. ICT statistics in Denmark
4. ICT usage in enterprises - methodological aspects

Background documents on the EU survey
- EU Model questionnaire for ICT enterprise survey 2016
- Selected questions from earlier EU ICT enterprise surveys
- Methodological Manual for EU ICT enterprise survey 2016

All above material has been sent electronically to KAS.

Annex 5. Suggested timetable for a pilot survey

Activity	Period	Comments
Decision on - Population and sample - Categories for dissemination (breakdowns, strata) - Data collection type - Technical set-up (database and data editing tools etc.)	March 2016	
Agreement with data collection agent	Short notice before starting data collection	
Questionnaire contents - Review of questionnaire - Translation to Albanian - Final questionnaire agreed upon	March-April	Full-scale survey: dialogue with stakeholders, pre-testing: +1 month
Finalising the questionnaire in relevant formats (paper)	April	
Create sample – population frame, draw sample	April	Pilot small sample, e.g. 10-20 enterprises for each size class, some distribution on different activity groups
Preparing system for quality control, error checks and data entry/editing	May-June	Full-scale survey: +1 month
Data collection - Launch - (Full-scale: Consider reminders letters)	May-June	Full-scale survey: +1 month
Data entry	July	
Data quality control and error checking - Incl. re-contacting enterprises	July-September	Full-scale survey: +1 month
Calculations, weighting/grossing up	September	
Dissemination preparation - Preparation of report on pilot survey - News release (tables, charts, text publication) - Press release	October	
(Full-scale: Publication/news release)	December	

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