

## **TERMS OF REFERENCE**

### **Consultant for Design and Establishment of Education Management Information System (EMIS) for Higher Education**

#### **1. Background of the Project**

The Government of Republic of Macedonia is implementing the “Skills Development and Innovation Support Project” (SDISP), financed by a World Bank loan. The expected duration of the project is from 2014 to 2019. The Project would support interventions which foster education and skills relevant to the job market, and enhance the innovation capacity and activity of firms in Macedonia. It will also address key missing elements of the Macedonian innovation system and ailing aspects of the research sector that are likely to be vital for improving the competitiveness of the enterprise sector and Macedonia’s longer term economic growth prospects. It will also help improve absorption of EU funds earmarked for innovation activities. The Project Development Objective (PDO) is to improve transparency of resource allocation and promote accountability in higher education, enhance the relevance of secondary technical vocational education, and support innovation capacity in Macedonia. The Project’s direct beneficiaries include around 24,000 students and 1,500 teaching and management staff from technical vocational education and training institutions who would receive a new curriculum and practical training facilities, as well as training on management, planning, and process improvement capacity.

Component 1: Improving Transparency of Higher Education - This component will have three main sets of activities, all targeted toward improving both the transparency and efficiency of the quality assurance and finance mechanisms in the higher education sector: (i) institutional strengthening and stronger quality assurance in higher education; (ii) reforming the higher education financing model; and (iii) establishing a centralized office to foster mission-oriented research and university-industry collaboration.

Sub-component 1.1: Quality Assurance in Higher Education.

- Upgrading of the education management and information systems, including the development and implementation of the central data base.

As part of Component 1, Subcomponent 1.1 – Quality Assurance in Higher Education the Project will finance activities targeted toward:

- (a) Design of the education management and information system (EMIS), including the development and implementation of the central data base, essential for monitoring the operation and outputs of the tertiary education and for administering the common admission system.
- (b) At the institutional level (Public and Private Universities), the Project would finance: technical assistance and capacity building for the introduction of modern management practices, including the design and implementation of an integrated EMIS for student affairs, academic programs, human resources management, budgeting and financial management, and infrastructure management.

## 2. Objective of the assignment

The overall objective of this assignment is to conduct a systematic assessment of the current information management context as related to tertiary education in Macedonia, writing a comprehensive report on the sector (highlighting the current state of affairs in this area and identifying gaps—based on global sound practices) and design a integration model for a centralized EMIS for higher education for student affairs, academic programs, human resources management, budgeting and financial management, and infrastructure management, and other essential data for monitoring the operation and outputs of the tertiary education on a Ministry level and for administering the common admission system including a proposed roadmap for implementation.

## 3. Scope of work

**The scope of work will include, but not be limited to:**

- Assessment of the current tertiary education statistics and data collection environment in cooperation with the Ministry of Education and Science of the Republic of Macedonia (MoES) and Higher Education Accreditation and Evaluation Board of the Republic of Macedonia (HEAEB),
- Review all documentation related to the assignment, including the Law of Higher Education and other related governmental decrees and bylaws related to the higher education,
- Evaluate any existing information systems running in the MoES, State Examination Center or HEAEB, which relate to tertiary education,
- Assessment of the existing Information Systems of the accredited public and private higher education institutions in the Republic of Macedonia (*The State University “Ss. Cyril and Methodius” - Skopje, The State University “Ss. Kliment Ohridski” – Bitola, The State University “Goce Delcev” - Shtip, The University of Information Sciences Technology “Ss. Apostol Pavle” - Ohrid, The State University Tetovo - Tetovo, The South East European University (SEEU) - Tetovo, The First Private European University "Republic of Macedonia" - Skopje, The Private University “FON” - Skopje, The University "American College" - Skopje, The University of audio visual arts - European Film Academy "ESRA Paris-Skopje-New York" - Skopje, The University of Tourism and Management - Skopje, The International Balkan University - Skopje, The MIT University - Skopje, The International University of Struga - Struga, The International Slavic University "G.R. Derzhavin" - Sveti Nikole, The University Euro Balkan - Skopje, The University Euro College - Kumanovo, The International Vision University – Gostivar, The Business Academy "Smilevski" - BAS - Skopje, The School of Journalism and Public Relations and the Institute of Communication Studies – Skopje, The Faculty of Business and Economics (NEOCOM) - Skopje, The Institute of Social Sciences and Humanities – Skopje, The Faculty of Islamic Sciences - Skopje*), data stored within these information systems and their capacity for real time data entering or data gathering; as well as their capacity for data exchange between these information systems and the new EMIS for higher education that will be developed,
- Assessment of the existing EMIS for Primary and Secondary Education and its capacity for secondary education data exchange with the new EMIS for higher education,
- Assessment of the existing Information system in State Examination Center and its capacity for data exchange with the new EMIS for higher education,
- Identification of information that needs to be collected from relevant institutions for monitoring the tertiary education (through consultations with MoES, HEAEB, Universities, academia,

researchers, policy makers and other stakeholders), as well as outlining channels of dissemination (for instance: intranet, extranet and internet).

- Design of the model for new integrated EMIS for higher education, based on the needs assessment,
- Design of the models of new information systems for the accredited public and private higher education institutions or design the upgrade of their existing Information systems, based on the assessment results,
- Proposal for upgrading the existing EMIS for Primary and Secondary Education (with respect to data for secondary education), based on assessment results, Provide detailed list of the products of the EMIS for higher education, their structure, content, sources of data and methodology for data analysis/usage including but not limited to the following essential fields: (1) management and administration of the education system, (2) research and planning of the education system (macro and micro), and (3) monitoring and evaluation of the education system
- Proposal for upgrading the existing Information system in State Examination Center, based on assessment results,
- Develop documents and communicate system requirements for the implementation of the EMIS for higher education,
- Prepare a comprehensive documentation including detailed but non-restrictive technical specification for the procurement of all software and hardware needed for the EMIS for higher education, including estimate of the cost of the intervention by location (institution)
- Devise a testing plan for the EMIS for higher education, testing plan for the connectivity with the existing or upgraded Information systems of the Accredited higher education institutions and testing plan for the connectivity with the EMIS for Secondary Schools,
- Provide assistance during the roll out of the tertiary EMIS.
- Perform any other activities related to the objectives of this assignment upon the request of the Client

#### **4. Deliverables and reporting requirements**

The Consultant will report to the SDIS Project Director. The Consultant shall provide periodically status report upon request and the following deliverables:

- Report encompassing the findings and recommendations from the evaluation of the existing information systems running in the MoES, State Examination Center or HEAEB, which relate to tertiary education,
- Report encompassing the finding and recommendations from the evaluation of the existing Information Systems of the accredited public and private higher education institutions in the Republic of Macedonia which relates to: data stored within these information systems and their capacity for real time data entering or data gathering; as well as their capacity for data exchange between these information systems and the new EMIS for higher education that will be developed,
- Report encompassing the finding and recommendations from the evaluation of the existing EMIS for Primary and Secondary Education, based on the technical analysis being done and its capacity for secondary education data exchange with the new EMIS for higher education , technical

analysis being done (such as on primary and secondary EMIS; maybe institutional readiness challenges, etc

- Report encompassing the finding and recommendations from the evaluation of the existing Information system in State Examination Center, based on the technical analysis being done and its capacity for data exchange with the new EMIS for higher education, Data model for the tertiary EMIS Functional requirements documentation
- Testing Plan
- Technical specifications for the procurement of all software and hardware needed for the EMIS for higher education, including budget estimates for the software interventions and the price of hardware needed.

## **5. Qualifications**

The minimum qualifications required from the Consultant are the following:

- Advanced degree (masters or PhD) in education, economics, business, computer science, law or related field. Experience in establishment of EMIS for higher education is considered an advantage,
- Eight (8) years of prior research experience in the area of information management in higher education,,
- Experience in the design and analysis of quantitative research,
- Understanding of educational systems in middle income countries. Understanding of the Macedonian HE system would be an advantage.
- Analytical skills,
- Strong interpersonal skills and good written and oral communication skills in English,
- High standards of personal integrity and ability to treat all individuals with fairness and respect.

## **6. Contract Arrangements**

- The contract for this assignment will be until May 31, 2019. Expected start of services is June 2016.
- The Consultant is expected to work in Macedonia. If the Consultant does not reside in Macedonia he/she must be available online and must be able to travel to Macedonia as needed. It is estimated that the Consultant will work 80 staff-days in total for the duration of contract.
- The contract will be time-based. Payments will be based on agreed daily rates stipulated in the contract and on reimbursable expenses using actual expenses and/or agreed unit rates.