Submission version: Manja Klemenčič, Ninoslav Šćukanec & Janja Komljenovič (2015). Decisions Support Issues in Central and Eastern Europe. In Karen L. Webber and Angel J. Calderon (eds.) ***Institutional Research and Planning in Higher Education: Global Themes and Context*****. Routledge/Taylor & Francis**
http://www.routledge.com/books/details/9781138021433/

Decision Support Issues in Central and Eastern Europe

Manja Klemenčič (corresponding author), Department of Sociology, Faculty of Arts and Sciences, Harvard University, US
Ninoslav Šćukanec, Institute for the Development of Education, Croatia
Janja Komljenovič, Centre for Globalisation, Education and Societies, University of Bristol, UK

Abstract

Universities in Central and Eastern Europe are caught between enforced data reporting (because the governments want them to account for their activities and performance) and institutional research for strategic development (because universities want to do better). Since the capacity for institutional research is in most universities still fairly limited (there are a few institutional researchers employed and these tend to work with centralized, yet non-integrated information systems), the emphasis of institutional research tends to be more on formal reporting than on supporting decision-making. Given that majority of universities in the region is still predominantly funded by the state, government steering crucially influences university practices. In most of national systems the governments have not developed performance-oriented financing and quality assurance mechanisms that would, in turn, prompt universities to adapt performance-oriented management practices with data analytics as a vital part.

Keywords:

Institutional research; university strategy; quality assurance; European Union's modernisation agenda for universities; Central and Eastern Europe

Introduction

Since the 1990s, higher education institutions[1] across Europe have obtained more autonomy from government steering. Universities were granted the right to decide by themselves on their internal organization and conduct of their operations (Klemenčič, 2012). At the same time governments have strengthened the external and internal evaluation and accountability

[1] In the reminder of the chapter we use the term universities equivocal to higher education institutions.

mechanisms; prompting the universities to show responsible use of public funds through various performance evaluations and other control mechanisms (Stensaker & Harvey, 2011). The 'evaluative state' has delegated evaluative competences onto independent agencies, such as quality assurance and accreditation agencies and research funding agencies (de Boer et al., 2007). Much of these changes have occurred within the policy context of the European Union's 'modernization agenda for higher education', which has been communicated through a series of influential policy documents and accompanying financial instruments, and which emphasizes the strategic role of higher education in promoting the competitiveness of European economies (Klemenčič, 2012; Robertson, 2008), but also in contributing to greater social cohesion. Modernization agenda for higher education has obvious neoliberal ideational foundations and promotes adoption of new public management approach to university governance and management, including emphasis on university performance according to desired indicators and external and internal evaluations thereof (de Boer and File, 2009). The governments' expectations as to what university should deliver have also become more explicit when higher education became unequivocally linked to economic progress and social wellbeing.

These developments have increased the governments' – and their auxiliary agencies' - demand for data on university operations. Also within the universities themselves there is need for more and better 'institutional intelligence' as the institutional leaders try to figure out how to fulfill the increasing demands from various stakeholders and try to envisage the position for their university in national and global higher education 'market place'. This is indeed prime time for institutional research in Europe, even if the term as such has not been adopted in the European higher education vocabulary. Nevertheless, at European universities we can clearly identify strengthening *practices of collecting, synthesizing, and analyzing institutional data to fulfill mandatory reporting requirements, assessment and to support university decision-making and planning*, which is indeed what institutional research is referred to in Anglo-Saxon countries. Universities in the Central and Eastern Europe have not been exempt from these developments; on the contrary. They too have been granted more autonomy and are subject to more accountability checks.

This chapter investigates how practices of collecting, synthesizing, and analyzing institutional data have developed at public universities in six countries in Central and Eastern Europe: Austria, Croatia, Poland, Romania, Serbia and Slovenia. These countries have several points in common. For all six countries, the European Union is an important common point of reference.[2] They all participate in European Union education and training and research programs. They all also participate in the European Higher Education Area (also known as the Bologna Process), an intergovernmental cooperation in the area of higher education, which initiated major reforms of degree structures, quality assurance systems and mobility mechanisms. Like in the rest of Europe, public funding of higher education is still predominant in this region, and, hence, the role of the state continues to be significant in steering the higher education systems.

[2] Serbia has obtained a status of candidate member of the European Union in 2012. Austria has been a member since 1995, Slovenia and Poland since 2004, Romania since 2007 and Croatia from 2013.

However, there are also some profound differences among the six countries. Apart from Austria, these countries have emerged from socialist systems and with different socialist arrangements (e.g. from non-allied Yugoslavia as opposed to Warsaw Pact countries). Croatia, Serbia and Slovenia were part of the former Yugoslavia with periods of armed conflict and significant processes of nation- and state-building after the secession. As a net contributor to the European Union budget, Austria is economically notably more developed. Given its resources, cultural affinity and geographic proximity, Austria often serves as an initiator and a partner in regional development projects. The other five are at lower stages of economic development, and have an ambition to fast-forward the higher education modernization in line with the European Union proposal mentioned above to catch up with the more developed European neighbors. These different trajectories of higher education development offer important contextual framework in which university reforms and the development of institutional research practices are embedded. The Bologna Process and the European Union's 'modernization agenda for higher education' have served as an important source of guidance and technical and also financial support for the reform processes in the examined countries, in particular in the areas of institutional governance, quality assurance and funding models, all of which have had crucial implications on the development of institutional research. Indeed, the imaginary of knowledge-based economy that positions universities as important and central drivers of economic development (Jessop, 2008) is strongly present in the region.

In this chapter, we explore the developments in institutional research in Central and Eastern Europe through two main aspects. First, we analyze external pressures on universities manifested through changes in the mandatory reporting requirements for universities and the implications these have on the institutional research practices. Here we expose in particular the changes in the funding models and strengthening of the external quality assurance and accreditation processes. Second, we discuss to which extent have these external pressures altered internal university steering mechanisms by introducing more performance-oriented management processes. We explore how institutional research is conducted and organized within these changing university structures. Data for this section has been obtained through a fact-finding survey we developed and distributed to academic leaders and university managers at selected universities, representatives from the Ministries and from the Quality Assurance Agencies in the six countries. We also draw on our own collaborative research on higher education reforms in the Western Balkans (Zgaga et al., 2013; File et al., 2013).

We have to bear in mind that institutional research at universities in the region is still far from being consolidated. The changes in structures and practices of institutional research follow to a great extent the reforms of quality assurance systems and public funding arrangements. As in other areas, in this area also, the state prompts and crucially shapes institutional change in university practice through regulatory and funding arrangements. To be sure, governments have always required financial reports and other general data on operations from universities and universities have always recorded general data on students, staff, study programs, finances, etc. What has changed significantly is the type and extent of institutional micro data that is requested

from regulatory and funding bodies. In addition, the neoliberal *zeitgeist* in European higher education - including the new public management approach penetrating university management - accentuates strategic and performance-oriented management practices in universities, which relies heavily on institutional research to aid institutional leaders in strategic planning and decision-making. These requirements and expectations are not only raising the prominence and significance of institutional research in the region, but also profoundly changing how institutional research is conducted and organized.

The policy context of strengthened quality assurance and performance-based funding

External regulatory requirements for purposes of quality assurance and accreditation and funding arrangements have been changing dramatically since 2000. In the framework of the Bologna Process the Ministers adopted the Standards and Guidelines for Quality Assurance in the European Higher Education Area. These paved a way for massive reforms across European countries introducing or reforming external and internal quality assurance evaluations and accountability mechanisms, which became a norm across Europe (Stensaker & Harvey, 2011; Klemenčič & Brennan, 2013). Higher education institutions began to strengthen internal quality assurance systems, which are often managed by an internal center or unit responsible specifically for quality assurance and accreditation (Harvey & Stensaker, 2008). These units have in many institutions effectively taken on the role of institutional research; although, as it will be discussed later, institutional research takes place also in other departments of the central university administration.

Reforms of quality assurance have important implications for institutional research. The Standards and Guidelines (Bologna Process, 2009, pp. 18-19) mention explicitly that "[i]nstitutions should ensure that they collect, analyze and use relevant information for the effective management of their programs of study and other activities" and that "[i]nstitutions should regularly publish up to date, impartial and objective information, both quantitative and qualitative, about the programs and awards they are offering". Furthermore, the recommendations provide following guidelines as to achieve this 'standard': "*Institutional self-knowledge is the starting point for effective quality assurance. It is important that institutions have the means of collecting and analyzing information about their own activities. Without this they will not know what is working well and what needs attention, or the results of innovatory practices. The quality-related information systems required by individual institutions will depend to some extent on local circumstances, but it is at least expected to cover: student progression and success rates; employability of graduates; students' satisfaction with their programs; effectiveness of teachers; profile of the student population; learning resources available and their costs; the institution's own key performance indicators*" (Bologna Process, 2009, p.19). The implementation of European Standards and Guidelines both at the system and at the institutional level has been extremely diligent (Loukolla & Zhang, 2010). In all of the examined countries we

observe strengthening of the external quality assurance bodies and processes on the system level, as well as further development of internal quality assurance structures and procedures; both resulting in more developed practices of data collection, analyses and reporting on university operations.

The changes in public funding mechanisms have also affected institutional research practices. The systems for allocating state funds to higher education institutions have been changing from the exclusively input-based models to funding schemes that include performance indicators. There are fundamental differences in the type of data and reports requested from universities by the governments in the incremental funding scheme, where allocations are based on previous years' allocations; formula funding, where allocations are calculated using standard criteria for all institutions; negotiated funding where allocations are based on negotiations over a budget proposed by the institutions; and contract funding, where allocations are based on meeting the targets agreed in a performance contract (Jongbloed et al., 2010, p. 47). Since public funding continues to be the predominant source of financing of universities, the shifts in funding models construct a whole new array of reporting requirements and fundamentally change the nature of mandatory reporting, data collection and university financial management.

Austria was among the first to introduce funding agreements in 2004. These funding agreements are basically contracts between the federal government and the universities under which progress in the fulfilment of performance targets is monitored through annual 'Intellectual Capital Reports' (File et al., 2013). Poland too, was among the first countries in Europe where output-based criteria played an important role in funding (Jongbloed et al., 2010). In Romania, the new Law on Education in 2011 also introduced differentiated funding based on performance. Next to core funding, which is incremental, there are also supplementary, complementary and institutional development components, which are allocated to universities, based on the quality criteria and standards. Slovenia is combining a formula-based system, which includes output-based elements with contracts that specify targets and goals for universities (Klemenčič, 2012; File et al., 2013). In Croatia, no output criteria were used in funding arrangements until the academic year 2012-2013, but the latest reform of the institutional funding system is introducing contract-based funding, using both input-based and output/performance-based criteria (Šćukanec, 2013; File et al., 2013). In Serbia, the 2005 Law in Higher Education introduced negotiated funding model; however, in practice "the new model has not been implemented; instead, higher education institutions have been funded through the system of direct financing [based on previous years' allocations]" (Vujačić et al., 2013, p.16). Funds, which are earmarked for specific use by the government, are sent directly to the academic units based on the funding category they belong to according to number of students, staff, academic programmes, etc. (ibid.). But even in Serbia, as well as in other former Yugoslav countries, the reform of funding towards more output-oriented model is in sight (Klemenčič, 2012).

The reporting requirements for universities are thus changing due to the changes in quality assurance and funding arrangements set by the governments. Consequently, these are pushing for institutional changes in structures and processes of institutional research. However,

in most of the countries, with exception of Austria and Romania, the changes in regulatory mechanisms, and thus reporting requirements, have not yet been such to push for a dramatic turn to performance-based management practices at universities.

The external pressures on the institutional research practices at universities

Similar to other European countries, institutional research conducted at universities in the examined countries serves first and foremost the purpose to fulfill the mandatory reporting requirements to the governments related mainly to funding and external quality assurance and accreditation. These mandatory requirements are stipulated in the national higher education legislation and in the regulations on quality assurance and accreditation. Apart from the Ministry responsible for higher education, also the public agencies for finances collect financial data from universities. National Quality Assurance and Accreditation Agencies collect data from universities for purposes of external quality assurance procedures, accreditation and reaccreditation, and increasingly also for the purposes of having an overview of higher education institutions and study programs within the entire higher education system. Auxiliary national funding bodies, such as research funding agencies or agencies funding internationalization activities, also request institutional reports. National research funding bodies collect data on research and development projects, knowledge transfers and often also bibliometric data on research productivity of research units, groups and individual researchers. Agencies responsible for coordination of European Union education and training programs which fund student and staff mobility, foreign language programs, etc. collect data on internationalization aspects of university operations. Universities, or even individual faculties, report directly to government statistical offices with general statistics as well as report data, which are forwarded from statistical offices to Eurostat and UNESCO-OECD databases.

The changes in mandatory reporting requirements are exposing the weaknesses in the existing national systems of data collection and analyses. Most countries have different national data warehouses (national registers) into which required university data is fed. These registers tend to cover data on students, staff, finances (and infrastructure), research, accredited institutions and study programs and international cooperation. They are managed by different units within the Ministry and by other public agencies. Data collection is in most cases supported by government information systems, which differ considerably across countries. The prevalent model in the examined countries is that of centralized, however in most cases non-integrated national information system, where data on different activities are not gathered in one warehouse. In such system universities' primary data collection streams feed into different data warehouses often "without an adequate correlation at the level of methods and tools" and resulting in unsynchronized collection schedules, different reporting tools and methods, major differences regarding data categories, nomenclatures and terminology used and distinct validation procedures" (Romania, 2014, p.1). Such non-integrated national information systems

also do not drive standardization of institutional data collection at universities. The lack of reliable and transparent information systems is particularly acute in the South East European countries where reliable data on all aspects of higher education systems is still a challenge (Zgaga et al., 2013). The ambition almost everywhere is to integrate the data warehouses into one centralized and integrated national information system, one central warehouse that would cover data from all or most of the key areas of university operations; and would be – expectedly – managed by the Ministry. Among the examined countries, the closest to such system is Austria. In Romania, an integrated system is only just being implemented and work remains to be done to connect university databases with the national system.

In Austria, "Intellectual Capital Report" is a comprehensive reporting system for universities, which includes a set of indicators developed by the Federal Ministry in collaboration with the Rectors Conference. The report became mandatory in Austrian universities starting in 2006. Romanian Government Executive Agency reports to have initiated a project which aims to "increase the capacity of public administration for evidence-based policy making in the field of higher education" by developing an "online platform with relevant data gathered from the Romanian universities" (Romania, 2014, p.1). Elsewhere, centralized systems of data collection cover only one aspect of university operation and are not comprehensive. For example, Slovenia has in 2009 introduced and in 2012 implemented the "Information system for evidence and analyses on higher education in Slovenia" (eVŠ), which is managed by the Ministry responsible for higher education. So far eVŠ only collects data on study programs and students enrolled in Slovenian public higher education institutions. The idea is to link eVŠ directly to the National Quality Assurance and Accreditation Agency. In Croatia, the Ministry reports that they are in process of developing a central information system, which "will be linked with the higher education institutions' systems and will collect data on students and academics". Until present "[s]ome data are collected at the institutional level and only some are available at the national level and by use of different IT tools."

Other external reporting requirements come from the various ranking agencies. The European Union has sponsored development of the U-Multirank, a multidimensional international ranking system of higher education institutions which compares empirical data on institutions with similar institutional profiles on the basis of teaching and learning, research, knowledge transfer, international orientation and regional engagement.[3] The first ranking with at least 500 higher education institutions from Europe will be released in 2014. Other ranking agencies to which the universities report include QS, ARWU, THE, and Green Metric Ranking. Most of our respondents stated that preparing reports to U-Multirank and other ranking agencies requires additional data, which is in most part not readily available within their existing information systems. The only exceptions are universities from Austria, which reported that most required data to report to the international ranking bodies is readily available from the "Intellectual Capital Report", and some have to be gathered in addition.

[3] Available at http://www.umultirank.org/.

The practice of institutional research at universities to support strategic and performance-oriented management

Strategic and performance-oriented management approach creates enabling conditions for strengthening institutional research and crucially shapes its development. Strategy formulation at the university involves "making sense of the relationship between higher education institution and the external environment and of the higher education institution's particular state of affairs" (Frølich & Stensaker 2012, p. 63). While all universities typically formulate some sort of institutional strategy, not every strategy automatically means strategic orientation. A more strategic and performance-oriented management of universities is prompted through aforementioned pressures from the governments through performance-based funding models, quality assurance regimes as well as international factors, i.e. increased global competition for students, staff, and research funding. However, government policies across the countries still vary significantly in the extent that they had adopted neoliberal ideology and new public management approach, i.e. to which extent they steer the behaviour of universities by imposing performance indicators through funding and quality assurance. Furthermore, as suggested by Mathies and Välimaa (2013, p. 91), the national databases tend to "serve national needs and are rather insensitive to an institution's data needs". Similarly, the European University Association's study of quality assurance procedures at member universities reports that even in countries where national quality assurance policies are in place and information systems developed, the link between data collection for meeting reporting requirements and university strategic management still remains weak (Loukalla & Zhang 2010, p. 38).

While any university leader would certainly claim to appreciate solid 'institutional intelligence' to aid evidence-based decision-making and planning, the usual problem stated is in the university 'institutional research capacity' to collect data and deliver such intelligence. As it will be discussed in the following section, institutional researchers tend to be few and university information systems for data collection tend to be underdeveloped. Hence, institutional researchers are challenged to both live up to the demands of formal reporting and the expectations of their own higher education institutions.[4] With limited capacity, the former inevitably takes the precedence. In our survey several universities reported that the university collects data mainly to report to the Ministry and for reaccreditation purposes. Qualitative analyses occur only occasionally if a specific 'institutional project' had been solicited from the leadership (e.g., graduate employability) and/or when external project funding has been obtained. However, from discussions with institutional researchers in the region we are also led to question to what extent are universities really willing to institutionalise research for creation of university intelligence since the investments in institutional capacity are in most universities still rather small. The question is whether in universities led predominantly by academics, with weak or inexistent managerial leadership, support of decision-making through university data intelligence is truly recognised as central or just declaratively stated as important. A further question is

[4] We thank Jeroen Huisman for his helpful comment bringing this issue to our attention.

whether there is knowledge among institutional researchers how to develop useful university intelligence. One of our respondents commented that the software supporting their information system is too powerful for their use: lots of analytical functions are never used. And another question is whether the academic leadership of universities is willing and able to engage with university intelligence for strategic planning and decision-making. Developing meaningful tasks for institutional researcher to carry out is, namely, a part of the performance and strategic management systems, which we found to be still in the early stages of development in most of the examined countries. Only in responses from one university we found an explicit strategic and performance management objective underlying the establishment of "Performance and Quality Management" unit with main focus on institutional research for data reporting and strategic analysis, including data on changes in the environment ("external changes"), benchmarking and comparisons to other universities.

Nevertheless, we noted that universities are developing their internal standards and guidelines for quality assurance and are introducing some new data categories for measuring performance. For example, student course evaluation (in most places collected only at the faculty level rather than central university level), graduate employability, student satisfaction surveys and surveys on academic staff satisfaction are becoming a regular practice. There are still differences among the institutions as to how comprehensive is data aggregated at the university level, and as such available to the university leadership to track performance, and which data is only aggregated on the levels of faculties and institutes. There are also differences how and to what extent are these data used, i.e. are they carefully analyzed and certain actions taken based on it or not. It can happen that a lot of data is gathered at the central level, but it is never properly analyzed and used in decision-making and planning. Most of data on student and staff profiles tends to be aggregated at the university level. However, when it comes to data on individual students' status each year, study success, student assessment of individual courses, and student satisfaction with student services, in most universities this data is only collected at the faculty level. Similarly, data on academic staff (ranked professors, lecturers, researchers) and their research productivity (publications, impact factor, patents and technology transfers, research projects etc.) tends to be aggregated on faculty level.

The development of institutional research within central university administration is particularly challenging in the countries from former Yugoslavia due to a particular model of university governance. In these countries, the legacy of socialist self-management structures was translated into 'fragmented' universities in which faculties, art academies and colleges had (and most of them still have) legal identity; thus making university merely an umbrella institution without significant decision-making powers (Zgaga et al., 2013, p.39). In a fragmented university, the position of deans is extremely strong: they are in direct contact with the Ministry regarding financing (with the exception of Slovenia). Different governmental agencies tend to obtain data directly from the academic units rather than from central administration. This model has tried to be overturned with governments' regulative intervention, but the changes in practice are slow. In most cases only a 'functional integration' has been achieved which effectively

means a working cooperation between the faculties, yet still relatively weak central administration and underdeveloped central administrative services, including institutional research (Zgaga et al., 2013). In such an arrangement the capacity to take decisions on interventions is low.

All in all, the practice of institutional research to support institutional decision-making and planning tends to be over shaded by the tasks to fulfil the mandatory reporting requirements. The main reason for this lies in limited institutional capacity to undertake institutional research function. University leaders simply do not invest resources to build capacity in this area. The main reason for this seems to lie, however, in lack of incentives or pressure from the governments to university leaders to performance-oriented management of their institutions. Only in higher education systems where the state has set clear performance-based regulations for funding and quality assurance (such as in Austria and aiming in Romania), we see systematic development of institutional research to support performance-based management across the universities in that system. Indeed, government steering is seemingly needed to drive the changes in leadership and organizational culture towards data-driven decision-making and performance-based management in the Central and Eastern European context.

Where and how is institutional research conducted within university structures?

At the examined universities institutional research, in the sense of data collection, is typically conducted in several 'collecting' units within the central administration: human resources, international office, student affairs, research management, library, finance, etc. With the consolidation and further development of internal quality assurance systems, in most universities a unit has been created in central administration with specific responsibility for quality assurance, institutional data analyses and reporting. This unit effectively coordinates data collection from the primary 'collecting' units, and is also responsible for analyses and reporting. In words of one of our respondents: "On demand reports are provided by the collecting units, but the standard reporting, strategic reporting, analyses and the development of the reporting system is within the responsibility of the performance and quality management [unit]."

There are notable differences among universities in the extent of development of their university information systems for data collection on university performance. In universities with most advanced systems the quality assurance unit provides senior management across the university with regular reports on the performance indicators and, as stated by one respondent, "secures a 'single version of the truth' by using the same standards, etc." In most universities, however, information systems are centralized, however non-integrated, which means that there are multiple warehouses managed by different departments or people at the university level. Typically these warehouses include a university system on students and study programs; human resources management system and finance and capital management system (most universities have mentioned SAP software for this purpose). Furthermore, there exist different practices as to

which data gathered at the faculty level is sent to the university level and analyzed there. Such practices are typical for fragmented universities where some data is centralized in university information system and other is collected through separate information systems of faculties. Here, the possible intervention from the university level to the faculty in terms of request for data is highly limited due to rather autonomous faculties. It is common that the Ministry collects reports for funding processes directly from the faculties and often also the National Quality Assurance Agency collects data directly from faculties. At present, one of the key efforts in the area of institutional research at universities in the examined countries involves efforts to strengthen their central information systems. Most universities have expressed an ambition or a concrete plan to move toward developing integrated information systems.

The quality assurance unit typically employs one or several professionals to this task: the actual numbers vary and the rule of the thumb is that the more developed performance-management system it has, better staffed is the quality assurance unit. The unit is often, but not always, connected to the IT unit or includes IT professionals. In most cases, the staff reports to one person from institutional leadership responsible for quality assurance at the university level (rector or vice-rector). In addition, there tends to be an advisory quality assurance committee composed of leadership and administration, representatives of academics, representatives of students and possibly also external stakeholders in which professionals from quality assurance units would also participate. The quality assurance unit typically does not have any direct connection to finance units or finance reporting. The financial unit prepares their reports, which then can be merged in general university reports. The changes in the funding schemes towards performance-based and developmental funding are, however, expected to pressure universities to strengthen the connection between the units responsible for financial reporting with those responsible for quality assurance and performance indicators. In most universities, we do not yet see significant structural adjustments in this regard, except that in operational terms the committees responsible for finances tend to include also those responsible for quality assurance.

We note from the survey that the majority of additional positions that have opened within university administrations to take on institutional research functions have taken place in the quality assurance units. We notice attempts towards centralizing data collection, analysis and intervention, but these reforms are still in early stages, hence in rare cases we see substantial new structures for institutional research, which would entail significant human resources and technology. Most universities report that no new employments have happened (due to financial crisis) and that institutional research tasks have been delegated to the existing employees. While we cannot yet speak about a distinct professional profile of university institutional researcher, the persons hired into quality assurance units tend to be required to have some experience in data analysis, knowledge on higher education and research and several soft skills.

Conclusion

There are major changes undergoing in Central and Eastern Europe as to how data on universities is collected and used. These changes are happening simultaneously at the national level and at institutional levels. Governments are trying to remedy the disfunctionalities of their existing information systems often marked by primary data streams feeding from universities into national registers with different reporting methods and tools and often also major differences in the basic categories of data, nomenclatures and terminology. The trend is towards integrated information systems with focus not only on input data, but also performance indicators. These changes are prompted by the changes in funding schemes, development of national quality assurance and accreditation systems and through influence of European Union's modernization agenda for higher education and ranking agencies. European Union seeks to support modernization of European universities also through policy evidence, analysis and transparency tools (European Commission 2011, p.11): *"it is essential to develop a wider range of analysis and information, covering all aspects of performance - to help students make informed study choices, to enable institutions to identify and develop their strengths, and to support policy-makers in their strategic choices on the reform of higher education systems."* The underlying principle is that of evidence-based policy making in higher education.

The changes in the government approaches are reflected in institutional practices. Universities are introducing units – typically designated as quality assurance and reporting units – with specific responsibility for collecting data from other university units, prepare standard and strategic reports, analyses and support the development of the internal reporting system. Universities are also seeking to develop more integrated information systems. The competencies and resources of such units very much depend on the overall strategic orientation of the respective university. In some universities, such unit is effectively the "performance and quality management unit" directly responding to the top leadership, well-staffed and aided by integrated information system. In most universities, however, institutional research is still an "add-on" function, with limited capacity in terms of people and technological resources, where most time and resources are devoted to compiling data for standard reporting and little, if any, to support strategic decision-making.

Whether or not universities develop performance-based management systems - of which data analytics is a vital part - largely depend on government steering. If the government introduces integrated system for data collection on universities, it will also need to support the universities to upgrade and integrate their institutional research function. The development of institutional research for data-driven management of universities depends largely on the extent of competition among higher education institutions within the national higher education systems, and of the ambitions of the universities to compete within global higher education market.

Acknowledgement

The authors would like to thank Jeroen Huisman and the editors of this volume for their helpful comments on earlier drafts. We would also wish to acknowledge confidential responses to our fact-finding questionnaire received from 11 universities, 6 national Quality Assurance Agencies and 4 governments from the six examined countries: Austria, Croatia, Poland, Romania, Serbia and Slovenia. Finally, we would like to thank Nikola Baketa for his research assistance with preparation of the questionnaires.

References

Bologna Process. (2009). *Standards and guidelines for quality assurance in the European Higher Education Area, 3rd Edition*. Helsinki: European Association for Quality Assurance in Higher Education.

de Boer, H. & File, J. (2009). *Higher education governance reforms across Europe*. Brussels: ESMU. Retrieved from: http://www.highereducationmanagement.eu/

de Boer, H. F., Enders, J. & U. Schimank (2007). On the Way Towards New Public Management? The Governance of University Systems in England, the Netherlands, Austria, and Germany. In: D. Jansen (Ed.), *New Forms of Governance in Research Organizations – Disciplinary Approaches, Interfaces and Integration* (pp. 137-154). Dordrecht: Springer.

European Commission. (2011). Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Brussels, 20.9.2011. COM(2011) 567 final. Retrieved from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0567:FIN:EN:PDF

File, J., Farnell, T., Doolan, K., Lesjak, D. & Šćukanec, N. (2013). *Higher education funding and the social dimension in Croatia: analysis and policy guidelines*. Zagreb: Institute for the Development of Education.

Frølich, N. & Stensaker, B. (2012). University Strategizing. The role of evaluation as a sensemaking tool. In: B. Stensaker, J. Valimaa, & Sarrico, C. (Eds.*), Managing Reform in Universities. The Dynamics of Culture, Identity and Organizational Change* (pp. 63-80). Basingstoke: Palgrave MacMillan.

Harvey, L., & Stensaker, B. (2008). Quality Culture: understandings, boundaries and linkages. *European Journal of Education*, 43 (4), 427–442.

Huisman, J. & Currie, J. (2004). Accountability in Higher Education: Bridge over Troubled Water? *Higher Education*, 48 (4), 529-551.

Jessop, B. (2008). A Cultural Political Economy of Competitiveness and its Implications for Higher Education. In B. Jessop & N. Fairclough (Eds.), *Education and the Knowledge-Based Economy in Europe* (pp. 13–39). Rotterdam and Taipei: Sense Publishers.

Jongbloed, B., de Boer, H., Enders, J. & File, J. (2010). *Progress in higher education reform across Europe: Funding Reform. Volume 1: Executive Summary and main report*. Twente: CHEPS. Retrieved from http://ec.europa.eu/education/higher-education/doc/funding/vol1_en.pdf

Klemenčič, M. (2012). The effects of Europeanisation on institutional diversification in the Western Balkans. In P. Zgaga, U. Teichler & J. Brennan (Eds), *The globalisation challenge for European Higher Education: Convergence and diversity, centres and peripheries* (pp. 117-138). Bern: Peter Lang.

Klemenčič, M. & Brennan, J. (2013). Institutional research in a European context: a forward look. In Special Issue on The Past, Present and Future of Higher Education Research: Between Scholarship and Policy Making. *European Journal of Higher Education*, 3 (3), 265-279.

Loukolla, T., & Zhang, T. (2010). *Examining Quality Culture: Part I – Quality Assurance Processes in Higher Education Institutions*. Brussels: European University Association.

Mathies C. & Välimaa, J. (2013) Is there a need for a European institutional research? *Tertiary Education and Management*, 19(1), 85-96.

Robertson, S. (2008). Embracing the global: crisis and the creation of a new semiotic order to secure Europe's knowledge-based economy. In B. Jessop & N. Fairclough (Eds.), *Education and the Knowledge-Based Economy in Europe* (pp. 89-108). Rotterdam and Taipei: Sense Publishers.

Romania. (2014). *Institutional analysis of data collection and management regarding higher education system in Romania: Conclusions and final recommendations*. Bucharest: Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI). Retrieved from http://pp-is.forhe.ro/sites/default/files/conclusions_data_collection_3.pdf

Stensaker, B., & Harvey, L. (2011). *Accountability in Higher Education. Global perspectives on trust and power*. New York. Routledge.

Šćukanec, N. (2013). *Overview of Higher Education and Research Systems in the Western Balkans: the case of Croatia*. HERDATA Project. Oslo: HERDATA. Retrieved from http://www.herdata.org/research/country-reports/68

Vujačić, I., S. Đorđević, M. Kovačević & Šunderić, I. (2013). *Overview of Higher Education and Research Systems in the Western Balkans: the case of Serbia*. HERDATA project. Oslo: HERDATA. Retrieved from: http://www.herdata.org/research/country-reports/68

Zgaga, P., Klemenčič, M., Komljenovič, J., Miklavič, K., Repac, I. & Jakačić, V. (2013). *Higher education in the Western Balkans: Reforms, developments, trends. Key findings from field research.* Ljubljana: Centre for Educational Policy Studies, Faculty of Education, University of Ljubljana. Retrieved from http://ceps.pef.uni-lj.si/knjiznica/doc/hewb.pdf

Institutional Research and Planning in Higher Education: Global Themes and Context

Edited by Karen L Webber and Angel J Calderon, published by Routledge, 2015.

http://www.routledge.com/books/details/9781138021433/

Content: