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Institutional Research and Planning: Its Role in Higher Education Decision Support and Policy Development

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Introduction

Contemporary higher education institutions (HEIs) are faced with new challenges, including economic reductions, debates on the public versus private good of higher education, changing governance and academic structures, rapidly changing technologies, increasing requirements for quality assurance and institutional rankings and how to balance the missions of teaching, research and service. Although higher education in one region or country may have some traditions that are different from other geographic areas, there are many common goals and organizational elements that are shared. Within this context, institutional research (IR) practitioners have the knowledge and skills to deeply assist in providing decision support for many of the issues that challenge our increasingly globalized world of higher education.

Although the term 'IR' has only been in vogue since the late 1950s (Reichard, 2012), tasks related to IR have existed as long as there have been institutions of higher learning. The roots of IR reside in the United States, where its practice is clearly identified in terms of its roles, functions and professional endeavours (Calderon and Mathies, 2013; Sauge, 1990). The term 'IR' has greater salience in the United States, Australia, the United Kingdom and in other European countries; but it is increasingly recognized in other regions of the world.

Across regions and national systems of education, there are vast differences in the composition, governance structure and funding arrangements of HEIs and that makes a single IR typology difficult, if not impossible. There are some prominent functions that resonate across many IR units; however, there are also different areas of emphasis, and it is fitting to ponder what is meant by institutional research. This chapter will provide a brief discussion of the decision support function known as institutional research (IR), how it varies in
HEIs across the world and how it relates to scholarly research on higher education. This chapter will also discuss IR’s extended reach and how it is used for effective institutional decision-making that support government priorities, civil society and addresses market forces that affect higher education. In this chapter, the term ‘policy development’ is used broadly to indicate activities related to higher education organizational planning and strategy, as well as the implementation and evaluation of organizational plans.

What is institutional research?

Perhaps the most widely used definition of IR is that by Saupe (1990), which describes it as the sum of all activities directed at empirically describing the full spectrum of functions (educational, administrative, and support) at HEIs which are used for the purposes of institutional planning, policy development, and decision making (p. 1). Similarly, Neave (2003) says that IR provides intelligence to the institution’s leaders to enable them to shape the policy, posture and institutional development. In essence, IR is viewed as a set of functions, activities and roles that practitioners perform to assist decision-makers in making well-versed or evidence-based decisions. Institutional research (IR) is the sum of activities that aim to explore the intricacies of an institution — including its origins, where it is and where it is going, and understanding its sets of relations within the wider social, economic and geographical context in which it operates and has a reach. From an IR perspective, the study of and research on higher education is channelled through the various lenses of actors, activities, purposes and other elements that characterize institutions. Along with internal stakeholders, the role and breadth of the country’s or region’s government will affect the work tasks and level of engagement expected by the IR unit. Compared to other systems of higher education around the world, and noting the recent changes that are occurring across the globe related to decentralization, the United States has, overall, experienced less control and coordination (McLendon and Hearn, 2009). The balance of centralized versus decentralized control affects IR in the types of data reported, and perhaps even how the data will be utilized by government and institution officials.

Fincher (1985) described IR as a specialized administrative function and fittingly styled its practitioners as organizational intelligence specialists. In considering the existing literature on the foundations and practice of IR, IR offices are seen as the engine rooms of the university; developers of policy-related research and research-led policy and catalysts for institutional change. Fincher’s work prompted Pat Terenzini to consider the forms of personal and professional competence, institutional understanding and knowledge needed for effective IR practice. The Three Tiers of Institutional Intelligence (Terenzini, 1999, 2013) describe the skills and broad knowledge that are required for effective IR
practice. According to Terenzini, Tier 1’s *technical and analytical intelligence* is the foundational building block. It includes technical knowledge of basic higher education definitions and categories, and analytical knowledge of social science research. The acquisition of basic definitions and categories provides Tier 1 practitioners with an understanding of higher education people and organizational structures. Analytic knowledge includes a basic understanding of how to measure, collect and analyse data, along with principles of research design, statistical methods and use of statistical software. While many of these research and technical skills are often learned in one’s graduate programme, some of the knowledge can be acquired or further enhanced through on the job training. In particular, definitions and systems that are unique to an institution must be learned on the job (Terenzini, 2013).

IR officials who have a solid understanding of the institution’s organizational structure, leadership and organizational practices may be engaging in Tier 2, *issues intelligence*. At this tier, the researcher is aware of issues that contribute to senior leader decisions and constraints that may affect those decisions. Tier 2, similar to Tier 1, is most often learned through a mixture of on-the-job training and formal coursework. This knowledge comes from practical experience, as well as being informed through regular review of scholarly writings in the field.

Terenzini’s (2013) third tier, *contextual intelligence*, is the ‘pinnacle of the pyramid’ (p. 143) and occurs for the seasoned professional who understands how to blend the intelligences of the first two tiers. It includes an understanding of the institution’s evolution, formal and informal political structures, how business is accomplished, and who are the key players. It also includes knowledge of the local, state, national and international environments and how they impact the organization. Terenzini purports that this highest tier can only be acquired through ‘on-the-job’ work experience and is the form of intelligence that earns IR professionals legitimacy, trust and respect (1999).

Some of what is known about institutional research comes from several multistate and national surveys conducted in the 1980s and 1990s, gathering information from members of the international and regional groups for the Association of Institutional Research (Knight, Moore and Coperthwaite, 1997; Lindquist, 1999; Muffo, 1999). A recent survey of over 3,300 professional staff members in the United States and Canada (reported in Volkwein, 2011) found that 38% of these units in HEIs have office names including traditional terminology like ‘institutional research’, ‘analysis’, ‘information’, ‘reporting’ or ‘studies’. A second large group (35%) has office names including words like ‘assessment’, ‘accountability’, ‘evaluation’, ‘effectiveness’ and ‘performance’. There is a wide array among these units of other names and combinations of names with ‘planning’ and ‘IR’. Institutional researchers and IR functions are also embedded in offices of strategic planning, enrolment management, budget, policy analysis, information technology and the student registration.
In this chapter, the terms ‘institutional research’ or ‘IR’ encompass all of these variations.

Another survey in 2013 examined work tasks assumed by IR practitioners in the United States and Canada. Initial results found a broad range of tasks being completed, and professionals in larger IR offices completed a wider range of work tasks (Lillibridge, Jones and Ross, 2013). Further analysis of the 2013 data by Webber, Dawson and Rogers (2015) mapped the 769 work tasks to Terenzini’s Tiers of Intelligence and found that the vast majority of reported tasks are situated in Tier 1 and Tier 2. The preliminary sort of all tasks showed approximately 500 reported items falling into Tier 1, 225 in Tier 2 and 50 in Tier 3. This imbalance to lower tiers shows the need for additional discussion and education of issues related to contextual intelligence for IR professionals in the United States. (Webber et al., 2015).

As a professional field, IR is over 50 years old in the United States. IR units and practitioners have engaged in data analysis and reporting for over 25 years in other countries, including Australia and South Africa. With European origins in Sweden and Britain in the late 1950s and 1960s, the trajectory of IR has taken more a path of combining research, policy and practice, given the variety of national systems and purposes higher education serve (Huisman, Hoekstra and York, 2015; Neave, 2003). In the 1980s, as some EU national governments granted HEIs more autonomy in exchange for forms of accountability (Neave and van Vught, 1991), institutions were prompted to use their internal capacity to generate information and data in order to satisfy governmental demands to oversee institutions. This encouraged a greater need for IR practitioners.

In the new millennium, greater accountability needs and changes in government policy promoting higher education have led institutions to recognize the need to expand their IR capacity to compete effectively for students and resources. Although IR does not have an established identity in some regions of the world, institutional leaders increasingly identify the potential for IR to help institutions navigate through times of turbulence and rapid change and to operate in a more resource-constrained and competitive context (Whitchurch, 2008; Woodfield, 2015). IR practitioners’ knowledge of higher education culture, organizational operations, future directions and impact of external stakeholder needs can position them well to contribute strongly to quality assurance and short- and long-range planning.

**Similarities and differences between IR and educational research**

While there are common issues, activities and strategic directions for institutional research (IR) and higher education research (HER), there are some differences as well. Some differences are subtle and others are more substantial.
Awareness of the differences can assist in IR effectiveness and academic planning across all HEIs.

Typically, institutional research serves key decision-makers (primarily executive and senior academic staff) at a college or university, providing competitive advantage in attracting students or academic staff, or in obtaining funding from competitive sources (mainly research grants). Institutional research also assists in providing information to senior leaders who may assist in allocating financial and human resources as part of budgeting and management processes. Higher education researchers, on the other hand, are a community of peer scholars who pursue scholarly study of higher education. Particularly in Europe and Australia, higher education research (HER) may also serve decision-making and resource allocation purposes, often including regional and national governments because basic research may lead to policy suggestions. For example, government officials who serve on education committees may request the study of topics such as assessment of student outcomes, or diversity of students or the effectiveness of funding allocations. Findings from such studies may contribute to new or revised policy. Typically, both IR and HER seek improvement, although HER may be in pursuit of broad strategic policy development and/or knowledge for its own sake. In institutional research, the target of improvement is typically a specific institution’s programme(s) and overall efficiency and effectiveness, while HER examines problems and potential avenues for improvement in a sector or region broadly. Most scholars agree with the applied versus broad, academic-based distinction for IR versus HER. Dressel and Associates (1971) report that successful IR should focus on effectiveness of the institution. Discussing the relationships between research and practice, El-Khawas (2000) identifies three spheres of activity: research, policy and practice. With a strong theoretical base, HER occurs through scholarly knowledge production and through instruction (research evidence shared with students in the classroom). Policy research provides information to address or achieve improvements in high-level strategy and policy development, typically not focused at single institution improvement, but aimed at state-, region- or country-level issues.

With its base in practice, IR is that which is often linked to management of the institution, thus providing practical and focused information. Somewhat similarly, Teichler (2000) sees research on higher education classified according to disciplines, themes and institutional settings. Although the boundaries between policy and practice-oriented researchers blur, Teichler (1996, 2000) suggests that experts be divided into six groups according to their links to academic theory, field knowledge and policy and practice. However, there is overlap; Teichler (2000) sees interrelationships between the academically based HER and those involved in policy and management.

Because the target audience and major purpose for IR versus HER may differ, the format and content of studies often diverge. Institutional research studies
are more likely be infused in a local context and include information regarding the history of the issue within the institution and the implications for decisions related to the results. Moreover, IR would likely be cast in relatively functional or simple terms, with a spotlight on practical implications and complex technical aspects of research methodology or statistical analysis downplayed. HER, in contrast, would likely be cast in terms of the lines of theoretical frameworks that guide the inquiry and relevant research previously pursued. The full complexities of research methodology and analysis would be well developed for scrutiny by experts in these techniques and as the ultimate criteria for credibility and judgment of academic value (and publication prospects). There are times when the lines between IR and HER blur, such as when the IR analyst serves as the scholar in Volkwein's (1999) faces of IR or as a key informant in Neave's *The Evaluative State Reconsidered* (1998). However, in more typical cases, IR analyses are more applied and focus on improvement of a specific institution.

In considering the challenges that face higher education in the future, Teichler (2014) discusses differences between educational research and institutional research, reminding readers that higher education research examines the views, activities and work context of those who study current activities and policies. While anticipating the future of higher education and the role of future actions, higher education researchers can focus on theoretical concepts and relationships. Although policy makers are increasingly looking for useful information that can be directly applied to an issue at hand, to some degree, HER may not necessarily address practical solutions. However, the analytical work undertaken by institutional researchers is more often linked to near-term decision-making and may emphasize the immediate practical value of HER.

With some differences as well as similarities between IR and HER, an overlap represents research that serves both the local institution and broader purposes. It is in the overlap where IR and HER may find opportunities for great cooperation and collaboration. Teichler's (2003) wise assertion of the need to be forward looking recognizes that both IR practitioners and HER scholars must anticipate future activities, trends, potential problems and considerations for resolution.

**The dimensions of decision support for effective institutional decision-making related to government priorities, civil society and market forces**

There have been numerous drivers of change in higher education, and the configuration of the actions by government, civil society and market forces have shaped the directions for higher education's future (Dill, 2014; Pusser, 2014). The breadth and depth of IR depends on the environment within the
HEI and within the boundaries where institutions operate. Generally, there is more institutional autonomy today (Neave and van Vught, 1991); governments set the policy environment and the broad parameters that institutions are expected to fulfil in pursuit of the state agenda. Relatedly, the increased emphasis on accountability and quality assurance has elevated the role for IR. National and local accreditation and accountability systems enable IR officials to play an important role in data collection, analysis and reporting. Changes over the last half-century have been shaped by market forces and have influenced on the nature and pace of change in higher education. These market forces have also affected the conduct of HEIs through their influence as funders. HEI’s role in society is important to social, cultural and economic development, but these roles speak to a variety of interest groups (and sometimes these can be in conflict with one another). Jongbloed, Enders and Salerno (2008) astutely describe the need for universities to carefully consider the relationships with various stakeholder groups. Mindful of incentive schemes and government requirements that may exist (McLendon and Hearn, 2003), institution officials must balance stakeholder needs and desires while also considering implications for governance and accountability.

Moving beyond institutional reporting

Historically, IR and planning offices have been charged with responsibility for extracting, validating and reporting institutional data. Having access to information, tools and methods for analysis has underpinned the foundation for IR to undertake a range of studies to better understand institutional performance, as well as provide foundation for institutional repositioning and setting strategic directions.

Indeed, decisions made by HEI leaders are influenced by funding needs and sources. While there are different levels of each by type of institution, there are four main sources of institutional funds: government, student tuition and fees, enterprise and philanthropy. Each of these entities prompts HEIs to respond to a variety of objectives. All of these drivers and developments are adding a layer of complexity to the nature of work in general. The extent to which institutions are accountable to a variety of actors has increased significantly. Two recent examples include the US Obama administration’s plan to implement a ratings system for colleges and universities that will provide measures of institutional success and subsequent federal funding (http://www.ed.gov/college-affordability/college-ratings-and-paying-performance) and the Australian government’s launch of a ‘MyUniversity’ website in 2012 designed to provide information to students about institutional performance on a variety of measures and to guide students’ choices where and what to study (http://myuniversity.gov.au/). In both cases, individuals in the HE community are in support of the information that can be gleaned from the data, but
they are unsure, about the proposed measures and their ability to authenticate institutional goal completion. This is an example, where IR practitioners have the opportunity to actively consider the state of higher education in general (regionally and globally), identify unique facets of the institution and how those facets fit in the larger higher education issues.

Awareness of broad processes and policies
In many countries, governments have enacted legislation for institutions to provide information about how institutions spend public funds and how HEIs are transforming the lives of those people who benefit from education. In addition, other actors that are supporting the HE enterprise (i.e. funding agencies) also require evidence on how their funds and support are being used. All of this is evidenced by the variety of metrics and reporting regimes that universities utilize in order to demonstrate how resources are being spent, transform and improve the lives of the people who benefit.

These developments elevate the role for institutional research, planning and decision support in institutions. While the pivotal role assumed by IR practitioners has been cemented through the requirements for statistical and other types of institutional information, the increase of accountabilities beyond government are shaping the nature and practice of IR across institutions. This prompts IR practitioners to be not only adept at providing data for general institutional management and accountability but also aware of political climates, relationships across and needs for all levels and sectors of education, and how organizations address these challenges. Equipped with this knowledge, IR practitioners can become engaged in data analysis and information distribution, both elements of highly valued decision support.

The wave of reforms that have shaped HE since the 1990s have resulted in an expansion of administrative staff and have spurred leaders to adopt or refine managerial practices that meet the challenges of expanding staffs and students. This is evidenced in HEIs by the adoption of management tools (such as strategic planning, performance-based funding and benchmarking). HEIs are now competing one against another, behave like business enterprises, are expected to have annual productivity increases and demonstrate profits year after year (see, for example, Stromquist, 2012; Marginson and Considine, 2000; Vaira, 2004).

All of these reforms have led to changes in the nature of institutional organization, as evidenced by how decisions are made. In the past, institutions were focused on the collegial nature of academia, the collective good and the use of educational outcomes. Although debate (has always) existed, decisions were generally made along collegial lines. Now institutions have largely adopted managerial practices in how decisions are made (Olssen and Peters, 2005). Numerous discussions about faculty governance in academic journals
show that the decision-making role for the academic senate has diminished (Amaral, Jones, and Karseth, 2000; Tierney, 2004). There is significant transformation in the way institutions are governed (Maassen and Olsen, 2007; McLendon and Hearn, 2009), which can be attributed, in part, to not only the convergence of competing forces driving change in HE but also a consequence of the fact that institutions are operating beyond their traditional or originally established boundaries. HEI constituents and strategic actors are drawn not only from their local community but also across jurisdictions, and many are operating across multiple national borders. HEIs are drawing students from a variety of geographies and satisfying skills, training and research needs from a range of industry and other stakeholders. In this regard, globalization has added a layer of complexity to the way institutions are governed and the depth and breadth of information needed for decision-making.

The extended reach of IR

This chapter’s discussion thus far has focused on the forces of change that are shaping HEIs and how these have had an impact in the way institutions are managed and governed. In this regard, institutional leaders rely on the services that are fulfilled by professional staff, including those who perform institutional research, planning, and related functions. As argued by Calderon and Mathies (2013), increasingly important functions performed by IR professionals include monitoring and responding to the external environment and devising responses that address the impact that external forces have on institutions. This is less true in the United States (Gagliardi and Wellman, 2014) where IR workers are more focused on Tier 1 tasks and less so involved in policy-level decisions and theory-based research. More so in Europe and Australia than some other parts of the world, IR practitioners have become an instrument of support for decision-makers to navigate change and to position institutions strategically in a competitive environment.

Involvement in strategic planning and policy development

While fulfilling reporting requirements is a central to the practice of IR, it is important that IR be an active participant in the development of strategies and policy setting. While IR professionals are needed to provide information for internal and external accountability demands, IR professionals can be utilized more effectively to inform and leverage strategic change and organizational learning. IR practitioners can assist well in developing as well as providing information for strategic planning, annual benchmarks, scenario planning, forecasting and long-range planning. With deep knowledge of higher education trends and needs, IR practitioners can contribute to discussions on the roles and value of higher education locally, regionally and globally.
Although the practice of IR gets fully involved in planning and strategy formulation in certain regions such as Australia, this is currently happening to a lesser extent in the United States. With a deep focus on data collection and manipulation and responsibility reporting and accountability, IR practitioners are less often engaged in policy-level discussions. Except in a few instances where IR is staffed with multiple members and who are senior in their higher education experiences, US college leaders often have other senior advisors who are called on for strategy decisions. With more intentional focus on Tier 3 tasks, IR practitioners may be able to assume a more active role in institutional strategy and policy formation.

Huisman (2013) adroitly questions if current IR practitioners are too inward looking. His review of mission statements for some IR units in the United States reveals a strong focus on reactive data gathering and monitoring. He postulates that IR practitioners are strong in technical intelligence, but less so in contextual intelligence. In the language of Volkwein’s (1999) four faces, IR practitioners perform well as information authorities, but become less involved as policy analysts and scholar/researchers.

Broadening decision support practice

In some parts of the world, IR practitioners are undertaking studies within and across industry sectors that require specialized knowledge residing outside IR and planning offices. For example, some Australian practitioners are working with industry partners to do scenario planning and forecasting. In addition, they are collaborating to examine influences on the nature of work, the drivers of change and the implications of further tertiary education for this sector. In these broader collaborations, the decision-making process at the institutional level is not only multilayered across various entities (some of which may also respond to different legislative, accreditation and reporting requirements, among many other things), but it is also dispersed across stakeholders within and outside the institution. In turn, this requires that IR practitioners be aware of the wider spectrum of institutional activities, strategic intent and policy within the education industry and across industries over multiple jurisdictions. Further, traditional models of university governance are progressively being transformed so that universities are becoming not only strategic actors competing in decentralized markets in a comparable manner to private companies but are also knowledge production actors supporting public policy goals of government, with an ever-increased public accountability, but with shrinking government financial support. These reforms in HE are changing the nature and characteristics of institutional management and the way activities are planned, developed and assessed and, subsequently, have an impact on the roles, functions and purpose of IR. Dedicated IR practitioners not only are required to adapt and embrace new forms of day-to-day operations also but need to respond by broadening and deepening their skills so they can be effective in
understanding and responding to trends and issues that affect higher education broadly. Institutional management is likely to be further transformed as HEIs are required to respond more to market forces and compete with other institutions for scarce resources, including students (Olssen and Peters, 2005; Pusser, 2014).

The future of institutional research and planning

Much has been said about the forces of change that are rapidly transforming higher education: globalization, demographic shifts, rapid technological changes and innovation are among the drivers. These key drivers are having an impact on every facet of human activity. Technology has increased the accessibility to larger amounts and more timely data, along with the capacity for analysis to support decision-making. Globalization has exponentially increased the mobility of people and skills, capital, trade flow between countries and borderless diffusion of knowledge and production chains. Demographic shifts have widened diversity in the student mix. All these changes are influencing the way HEIs are perceived to benefit society.

The alignment of competing demands from the state, the civil society and market forces are determining the future of higher education (Dill, 2014; Pusser, 2014). Governments expect that HEIs will contribute to their public policy objectives, and governments ensure completion of these objectives through the funding arrangements and other instruments (e.g. mission-based compacts between government and HEIs and reports on institutional performance made available on websites) to ensure compliance with the array of demands placed on HEIs. The space that HEIs occupy in society is considered important to economic development, but the alliances between HEIs and a variety of associations and interest groups are dispersed (and these can conflict with the stated mission of HEIs). Further, the adoption of market-driven mechanisms to support and develop higher education is shifting the dynamics in how institutions operate, behave and interact with its various stakeholders and strategic actors.

In many regions of the world, IR is a recognized and established part of higher education. Armed with knowledge and experience, IR professionals can continue to provide information for organizational planning and required accountability reporting, but when positioned well, they can be contributors in the shaping of national and perhaps international policy. At the US national level, higher education scholars are often part of US Department of Education discussions on topics such as student financial aid, the growth of science and engineering fields and post-degree employability. Such contributions require deep knowledge and appreciation of local and domestic imperatives, all of which are fundamental to the institutional strength and future viability. As IR practitioners continue their focus on the individual institution, awareness of
the broader region, including possible scenarios and implications for change is in order. The development of strategic plans in HEIs is no longer optional, and the input of IR practitioners in this process is pivotal. This is happening to a greater extent in certain regions of the world, and can become more intentional in other regions such as the United States.

Historically, the focus of IR has been on self-studies for institutional planning and some specialized research on relevant issues that impact a particular institution (Gagliardi and Wellman, 2014; Volkwein, Liu, and Woodell, 2012). However, due to global and market forces that are ubiquitous, the scope of effective IR work requires expansion, knowledge about the state of higher education in local and global economies, and a shift to decision support that is infused with deep knowledge of higher education challenges and potential actions that support resolution. While a focus remains specific to providing information for institutional planning, institutional leaders must think broadly. HEIs are part of regional or national systems of education that must respond to varying national policy imperatives.

Balancing IR expectations and tensions

Given the variety of roles and functions performed by IR practitioners, it is not surprising that tensions exist as a result of the varying expectations about what IR does within the institution, and what it does for the education sector overall. Volkwein (1999, 2008) describes the contradictory ‘faces’ by which IR practitioners can be characterized in terms of their organizational role and culture and the purposes and audiences of IR. These tensions apart from remaining unresolved, given the nature of IR and the evolution of HE across the globe, are also the challenges that are likely to define the IR profession in years to come, regardless of the type of institutions in which IR is practised or exercised. Other researchers have also discussed the tensions confronting IR (Calderon, 2011; Huisman, 2013).

With actors or forces of change occurring rapidly, higher education institutions need to respond to a variety of expectations and requirements. This offers a role for IR practitioners as interpreters, adaptors and catalyst for change. Not only do they need to interpret, decode and translate into meaningful context what the expectations of these actors, but, in addition, they need to ensure that our institutions respond and adapt as required (Calderon and Webber, 2015).

Models of governance in higher education are changing, and there are increasingly more external agents that are forcing consideration on how to accomplish institutional goals. This reflects the new public management agenda that has permeated throughout higher education (Estermann, Nokkala, and Steinel, 2011). Some models of institutional governance need to embed actors from multiple jurisdictions (either within the state or interstate and
even overseas). Academics are no longer the obvious successors to steer the course of institutions; in a growing number of instances, external agents are introducing new forms of institutional management. Through legislative and institutional policy changes, the roles for institutional leaders have expanded and the expectations for performance have increased. In a decision support capacity, IR practitioners need to adapt and combine external and internal practices for the long-term sustainability of the profession and HEIs.

As shifts continue to occur in the nature of institutional funding, away from state reliance to a variety of funding sources (government, students, enterprise and philanthropy), the governance boundaries of institutions are likely to be further altered and traditional academic structures modified. For example, where there is an increase in the number of interdisciplinary faculty members who are jointly funded by two or more academic departments, institution practitioners must rethink how to count faculty member effort, research and instruction outcomes, and which unit will receive credit for each activity. Changes in institutional structures like this offer the opportunity for IR to navigate through the transformation, steering a course that supports sound decision-making and clearly articulated strategic directions. Changes in institutional governance together with globalization and technological transformation add complexity to the nature and practice of IR. These shifts are likely to demand greater discernment from IR practitioners in the way advice is given to senior management. The more information that is collected, the greater are the complexities in managing it; and yet it exponentially widens the scope for analysis, and it provides an opportunity for exploring new possibilities and for fostering institutional innovation. Innovation requires IR practitioners to have a very good understanding of the data, as well as the ability to interpret and draw inferences about a variety of internal and external data sources (Webber and Calderon, 2015).

As demand for decision support grows, IR will be advantaged by its position in the organization’s hierarchy and its adeptness to collaborate. Along with accounting for external stakeholder interests, decision making occurs across a range of units within the institution that respond to different legislative, accreditation and reporting requirements. In some world regions, traditional models of university governance are progressively being transformed so that universities are becoming not only strategic actors competing in decentralized markets with private companies but are also knowledge production actors supporting public policy goals of government with an ever-increased public accountability and scrutiny, but with shrinking government financial support (Whitley and Gläser, 2014). Significant reforms in higher education are indeed changing the nature and characteristics of institutional management and the way activities are planned and assessed.
Looking forward

Higher education institutions need knowledgeable and engaged IR and planning practitioners. To maximize IR’s effectiveness in decision support, IR units need decision-makers who provide support, vision and commitment in resources for the objectives institutions seek to achieve. While there is a distinction between IR and HER, there are some important questions that fill the overlapping area. In concert with colleagues who study the future of higher education, it is important for IR practitioners to identify current challenges and considerations for higher education reform. Teichler (2003) delineates a number of important issues that require current attention and prompt strategies for future planning. At the organizational level, IR can monitor numeric trends in enrolments for expansion and diversity, but it can also be an agent of decision support that asks forward-looking questions such as the following:

- Will the institution or regional system move further towards mass higher education and, if so, what are the implications for students and staff?
- For societal needs, what is a reasonable balance of technical versus higher education degree production?
- How does the increase in higher education degrees contribute to employability? Will the current emphasis on degrees production result in substantial underemployment?
- With government financing of higher education declining, how much can students be expected to pay, and without resulting in heightened loan default and
- How is globalized education and collaborative scholarship affecting student and staff mobility, communications and multi-location study?

Answers to these and other similar questions enable the IR practitioner to blend one’s technical and analytic knowledge with a deep knowledge of the institutional and general structures, functions and dynamics of higher education. This blend of proactive knowledge and decision support positions IR to contribute to strong institutional leadership that can be a valued asset to organizational managers.

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