Integrating the Functions of Institutional Research, Institutional Effectiveness, and Information Management

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Abstract

The objective of this paper is to identify common essential information and data needs of colleges and universities and to suggest a model to integrate these data needs into one office or department. The paper suggests there are five major data and information foundations that are essential to the effective functioning of an institution: (a) accreditation support; (b) analytical reporting; (c) assessment; (d) data management and reporting; and (e) planning and scanning. Additionally, this paper presents the top five tasks within each of the five major foundations and offers insight on methods and best practices to organize and accomplish these tasks. The paper is not designed to provide an in-depth coverage of each data foundation.

Keywords

Institutional Research, Institutional Effectiveness, Information Management, Assessment, Accreditation, Data Diamond

Introduction

There is extraordinary diversity of thought in higher education today in defining and implementing organizational structures and methods that best fulfill the complex and often overlapping data and information needs of a college or university (Volkwein, 1990).

Several factors have simultaneously converged to contribute to this paradox including improvements in information technologies that have made data management and reporting tools more widely available throughout an organization (Speier & Morris, 2003), increased calls for accountability and the resulting need to provide evidence of claims (Ruppert, 1994), and the desire of managers and leaders to make data-informed decisions based on the "complicated" understanding of multiple rather than singular perspectives (Bartunek, Gordon, & Weathersby, 1983). Adding to this complexity is the economic crisis, which is notably impacting higher education and forcing budget cuts, and consequent restructuring, in many institutions (The National Center for Public Policy and Higher Education, 2009).

The traditional office within higher education tasked with organizing data and information intelligence is institutional research (IR). The definitions of institutional research, and opinions on what activities comprise institutional research, seem to be as numerous and varied as the over 4,000 members from 1,500 plus higher education institutions who belong to the Association for Institutional Research (AIR, n.d.). Saupe (1990) provided a succinct and accepted definition of institutional research as, "Institutional research is research conducted within an institution of higher education to provide information which supports institutional planning, policy formation and decision making" (p. 1). Another definition from McLaughlin and Howard (2004) states, "The mission of institutional research is to enhance institutional effectiveness by providing information which supports and strengthens operations management, decision making, and unit and institutional planning processes" (p. 17). Generally, institutional research can encompass and provide data and analysis for all departments of an institution including enrollment services, student life, administrative services, alumni relations, and academic affairs.

While most IR offices can fit under the umbrella of the above definitions, Volkwein (1990) noted there is tremendous diversity within institutional research in structures and tasks, and, therefore, there are also inherent ambiguities including role contradictions between data demands and professional training, whether IR activities are centralized or decentralized, where IR belongs in the organizational structure, and the role of IR in assessment. The office name might include *planning* or *assessment* or it may be called *institutional studies*. The tasks and responsibilities can range from data gathering, analysis, and reporting to supplying national survey data, strategic planning support, enrollment management support, policy support, assessment, accountability, accreditation, effectiveness, and information management including development and/or maintenance and oversight of data warehouses or data marts. A comprehensive inventory of IR activities developed by Chambers and Gerek (2007) provides a sense of the breadth of IR functions.

The historical diversity of structures and tasks within institutional research has also facilitated an ambiguity concerning the nature and scope of institutional research versus other offices or departments. Saupe (1990), in describing the expanding and overlapping data functions within an institution, pointed out that offices of institutional research are often assigned responsibilities other than research, such as state and federal reporting, providing data for press releases, encouraging consistent use of official institutional data, providing advice on—and at times being centrally involved in—the development and operation of computer information systems, staying abreast of the literature on higher education, and providing advice on planning and policy.

In discussing the evolution of institutional research, Volkwein (2008) further states that there are strong organizational connections that unite what he calls the "golden triangle" of (a) institutional

research and analysis; (b) planning and budgeting; and (c) assessment, effectiveness, and accreditation. Further evidence of the evolving nature of IR was provided by Lindquist (1999), who conducted a 1998 survey of AIR members and found the topics of high importance to be accountability and performance indicators (71%), information systems and data management (63%), technology issues (63%), persistence and retention (63%), and outcomes assessment (61%).

While the nature and scope of IR has been argued and discussed over the years by those both within and outside of IR, other offices outside of IR that are concerned with data and information have been establishing a foothold within institutions of higher education. Today, there are three commonly known departments or offices, or some form of these offices perhaps under a different name, which deal with information and data management and reporting functions in colleges and universities across America. These are Institutional Research (IR), Institutional Effectiveness (IE), and Information Management (IM). Assessment may be part of IR or IE offices at some institutions, or be a stand-alone office at other institutions. Although the nomenclature, structures, tasks, and responsibilities of these three offices are rarely identical from campus to campus, when viewed holistically, most data responsibilities can be found in some format within one of these three offices.

The second of the three offices is Institutional Effectiveness. Institutional effectiveness has become a term of art in higher education, driven primarily by the expectations of regional accreditation. It hinges on bringing together assessments of all components of an institution to provide evidence of accomplishing its mission and goals.   IE offices typically include assessment functions but may also include IR functions such as data reporting and analysis, designing and administering campus surveys, accreditation support, promoting data-informed decision making and conducting academic program reviews. Some IE offices also provide leadership in strategic planning. While some institutions limit IE to assessment activities alone, regional accrediting bodies generally expect the synergistic interaction of activities in assessment, other evaluations, data from institutional research, strategic planning, and budgeting to provide demonstrable institutional effectiveness. For example, in allocating an institutional budget to various units and activities, or in making budget cuts, it is expected that decisions are driven by findings of assessment, institutional research, and information on progress toward strategic goals, thus moving strategic priorities forward and engaging in continuous improvement. In this sense, IE brings together the other components discussed in this paper (i.e., information management and institutional research) to assure and demonstrate that the institution is meeting its mission effectively.

The third office is Information Management. The scope and definition of information management can be as broad and varied as the scope of institutional research, and certainly, not all aspects of IM apply to the data management discussed in this paper. However, a general definition of IM responsibility is to develop and manage information systems and applications throughout an institution. This data management is complex, difficult, and inherently linked to IR and IE in two major aspects: (a) it is difficult for institutional researchers to provide needed reports and analyses if data management is flawed, and (b) as the experienced users of data, no one is better suited to assist in the development of data definitions and structures than institutional researchers (Miselis, 1990). Therefore, the two components of IM of particular relevance to IR and IE are the development and support for an enterprise data warehouse, as well as the provision of business intelligence and analytical tools that make possible timely access to data. These aspects of IM are critically related to both IR and IE in enabling consistency and centralization of data in an integrated manner that facilitates data-informed decision making.

Objective

The traditional ambiguity of data and information functions within IR has expanded into the realm of ambiguity among the offices of IR, IE, and IM, with data and information functions at a college or university often overlapping between the three offices. Therefore, the objective of this paper is to identify common essential information and data needs of colleges and universities and to suggest a model to integrate these data needs into one office or department that can synergistically create a data-informed institution that eliminates duplication, competition, and antagonism between disparate offices. The paper suggests there are five major data and information foundations essential to the effective functioning of an institution that can currently be found to varying degrees within offices of institutional research, institutional effectiveness, or information management. Ensuring that these major data foundations are addressed in a coherent manner and integrated into one office or under one umbrella can create a more effective mechanism for fulfilling an institution's information and data requirements.

Framework

The complexity of data interactions, as well as the confluence of organizational structures within higher education encompassing data, information, and intelligence gathering and reporting has been documented and discussed by multiple researchers. To mention only a few, Terenzini (1993) expounded the concept of three tiers of organizational intelligence: technical and analytical intelligence, issues intelligence, and contextual intelligence, which acknowledge the complex and ongoing changes in tasks and tools confronting institutional researchers. Sayers and Ryan (2009) argue for the efficacy of creating a "decision support network" or an integrated data and information model that links the four areas of planning, assessment, data gathering, and budget management. Volkwein

(2008) argues that "professional bureaucracies" (i.e., formal, large, structured offices with doctorate-level education and significant years of experience), which centralize IR activities, are the most effective structure for handling institutional intelligence and effectiveness.

In a similar vein, this paper argues that rather than decentralize and create separate silos between the functions of IR, IM and IE, institutions should examine the effectiveness of combining these functions under one umbrella. The five major data and information foundations of an institution are defined in this paper as: (a) accreditation support; (b) analytical reporting; (c) assessment; (d) data management and reporting; and (e) planning and scanning. These five basic foundations are shown in Figure 1 and described in more detail in Table 1.
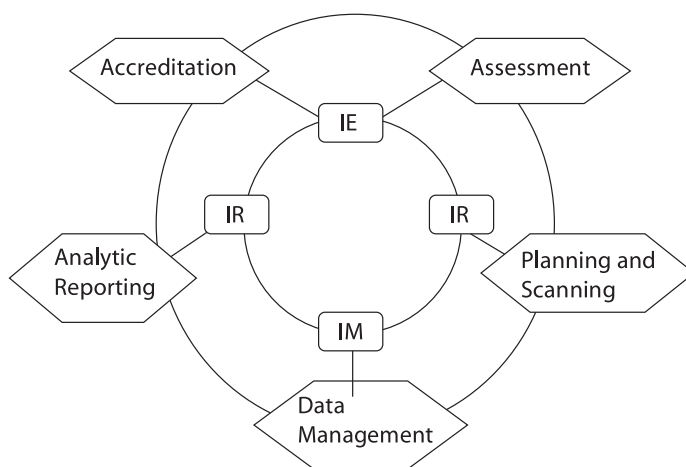

Figure 1. Five basic institutional information foundations.

Additionally, this paper presents the top five tasks within each of the five major foundations and offers insight on methods and best practices to organize and accomplish these tasks. The paper further argues that if all 25 identified tasks are well-implemented and integrated within an institution, this will create a truly data-informed and data-integrated institution that can demonstrate

Table 1

Primary Tasks for Five Institutional Information Foundations

Data Management and Reporting	Analytical Reporting	Planning and Scanning	Assessment	Accreditation
Centralize institutional data	Establish a calendar of analytical reports	Develop IR strategic plan	Establish electronic system for assessment reporting	Conduct gap analysis for regional accreditation
Develop tracking system for ad hoc data requests	Develop key performance indicators	Be involved in development of institution strategic plan and provide environmental scanning	Monitor assessment reporting	Establish an evidence repository
Administer Federal and State reporting requirements	Report on historical trends	Develop list of peer institutions	Conduct and analyze surveys	Provide institutional and programmatic data
Develop interactive online reports	Utilize research from literature and other IR offices	Promote integrated campus planning	Assist departments in assessment planning	Collect and update information on regional and specialized accreditation
Develop a dedicated, secure web presence	Communicate findings to key decision makers	Report annually on strategic planning progress	Summarize key findings from assessment	Establish appropriate processes for accreditation

institutional effectiveness. The paper provides useful, implementable suggestions on creating an effective data and information structure within an institution. Targeted audiences are those establishing a new IR or IE office, those who are reorganizing institutional data and information organizational structures, and those with existing offices who are looking to expand the data services they provide.

Top Five Data Foundations

Data Management and Reporting

Data management and reporting are two of the most basic, fundamental responsibilities of institutional research offices (Wilton, 1990). IR offices are relied upon to provide accurate, timely data in an understandable format in order to support decision making, planning, and policy development. In addition to submitting national and state survey data, a major role of IR offices is responding to ad hoc data requests. Automating reports that refresh on a daily or quarterly/semester basis can relieve much of the pressure of ad hoc requests thereby freeing time for other activities, to say nothing of providing consistent numbers.

However, a classic problem faced by IR offices can be described by the old adage "garbage in, garbage out." If the data culled from enterprise data systems is full of errors or is scarcely populated, the resulting report will consequently be full of errors and not be reliable. Therefore, in order to build trust in IR reports, it is advisable for the IR office to have responsibility for data management and for ensuring that a data warehouse or data mart is established to centralize key management data into

one "official" source. This responsibility is typically shared with the Information Services/Systems (IS) function. The partnership may also include other functional areas and/or an information center. It is key, however, to have the heavy involvement of the IR office with its extensive knowledge of the functional aspects of the data.

Additionally, reports that are produced from the IR office should be recognized as the official statistics of the institution in order to eliminate conflicting numbers. As part of data management, both a tracking system to monitor data requests and their statuses, as well as a yearly calendar of repeating events should be implemented. Lastly, in today's digital world, a dedicated, secure website accessible from anywhere in the world should be established to make reports available 24 hours a day. The following are top five activities to actualize effective data management and reporting.

1. **Centralize the collection, management, and reporting of institutional data through the Office of Institutional Research to ensure accuracy and consistency of data. This should include the establishment of a data warehouse or data marts, as well as a data steward group to monitor data policies.**

The concept of a Data Diamond was presented at the 2008 AIR Forum (Posey, Few, Elkins, & Crosby, 2008). At its core, the Data Diamond revolves around the four "c's" of centralization, conformity, consistency, and clarity—all monitored by a Data Steward Group (DSG) and encompassed within a strategic plan. The primary information management components that compose the foundation of a Data Diamond are (a) the creation of clean datasets, including tables, definitions, and critical documentation; (b) the building of interactive online reports; (c) the development of a website with both public and private capabilities to create one-stop shopping for data customers; and (d) the establishment of a DSG, or an oversight monitoring committee for data management. In

addition to IR and IM, this group should involve Student Records, Financial Aid, Finance, Personnel, Facilities, and Alumni as key functional areas. It may also involve the internal administrative data services like Compliance/Risk Management, IS Security, and Business Continuity.

The establishment of a data warehouse or data marts as the official source of enterprise data can provide the centralization and conformity of a Data Diamond. This also goes a long way toward providing the rationale and means for the elimination of multiple shadow databases, which can create both security and consistency issues. The data warehouse is basically a repository of an institution's stored data and is designed to facilitate the retrieval and analysis of data. There are a variety of out-of-the box solutions which can be implemented, or one may choose to take a more customized approach. It is not the purpose of this paper to discuss the details and complexities of building a data warehouse or which product to utilize; rather, the goal is to point out the importance and benefit of doing so. There are many sources available for research on data warehousing including the Higher Education Data Warehouse Forum (n.d.) at http://hedw.org

Establishing a data management or DSG composed of key stakeholder data developers and users from throughout the campus will provide input, oversight, and monitoring capabilities to create and maintain a Data Diamond within the institution's data reporting systems. The purpose of the DSG is to establish policies and business rules for, and monitor efficiencies of, the data systems. The DSG should comprise data users from throughout the university including administrators, faculty, and staff as they all have vested needs for accurate data in order to effectively fulfill their job responsibilities. As end-users of data, each group brings differing perspectives as to what data are critical and in what format they should be displayed. This broad perspective can be invaluable in creating holistic data policies.

The DSG can also be responsible for determining and assigning access roles to end-users based on their need to perform job functions. The DSG should be charged with authority to make final data decisions. An additional role the DSG members can perform is to bring to the forefront knowledge of the top reports that need to be developed. The frequency of DSG meetings initially may need to be as often as once every two weeks but may evolve into monthly meetings.

2. Develop a tracking system for receiving and responding to ad hoc data requests. Respond in a timely manner and prioritize requests.

The development of an effective tracking system should be a priority for all IR offices. Given the eclectic nature of requests, the rapid pace with which requests can be received, the varying amount of time different requests can take to fill, the need for follow-up to clarify data requests as well as follow-up to ensure the correct data were provided and that all questions have been answered, and the underlying need to prioritize the importance level of each request, a well-designed tracking system is critical to the effectiveness of the office.

The elements of the tracking system should be customized for your institution. However, a suggested list of variables to track includes the following: an issue number, date submitted, start date/review date/due date, priority level, assignee (who will fill the request), status of the request (open, filled, on hold, waiting customer response, work in progress), title of request, description of request, requestor's name, requestor contact information, request type (data output, correction, assistance, training, etc.), peer review required/not required, time estimate to complete task, budget (if applicable), delivery format (Excel, Word, online report, etc.), and notes.

There are a variety of formats for developing a tracking system. The use of an Excel spreadsheet can be effective for small offices. For larger offices,

more sophisticated databases or proprietary systems might be developed. The key is to find a system that works for your office and make it a business rule to utilize it for all data requests. Having an IR office email for all data requests such as datareq@yourinstitution.edu is also useful, especially if it can feed into the tracking system. You should also consider the development of a standard data request form that will allow easy synchronization with your tracking system. The advantages provided by a proprietary database tracking system can make it well worth the time and resources needed to provide automation and ease of tracking.

Setting an office business rule for amount of time to respond to a request is a good idea. As a first step, there should be some acknowledgment sent back to the requestor that the request has been received. This can be automated or assigned to one person in the office as a job responsibility. Tracking the start, review, and due dates is important to build trust in the IR office. Providing accurate and timely data should be the goal.

3. Administer and file all national, state, and local reporting requirements such as IPEDS, Petersons, Common Data Set, *U.S. News & World Report,* VSA, etc. This should include the development of a yearly activity calendar with required dates of submissions.

The data collection for, and timely submission of, national and state reports is a fundamental requirement for IR offices. At times, staff may view this task as cumbersome or tedious, but its importance to the institution should never be underestimated. Indeed, in today's digital world, the general public, reporters, parents, prospective students, and administration and internal staff, all can and often do access these reports to gather information on an institution. These reports also provide a quick comparison between institutions, as the reports require standard methodologies in collecting and submitting data. Among the

more common reports are IPEDS, the Common Data Set (CDS), College Board, *U.S. News & World Report,* Petersons, and the Voluntary System of Accountability (VSA) for public universities and U-CAN for private universities. Often, the IR office simply plays a coordinator role in gathering the data and assembling the report, such as the keyholder with IPEDS. In this role, IR may fill out the student demographic and other common sections, while sending other specialized sections of the report such as finance and human resources to the respective departments to complete and return to the IR office.

In addition to understanding the important function these reports serve, there are three other key issues to be aware of with these reports. First, timely submission is critical as there are usually deadlines associated with submission and publication, which means paying close attention to due dates ahead of time in order to begin the report with enough time to complete by submission. Of special note here, is getting the special sections to other departments with adequate time for them to be able to complete and return to you. Second, make sure the required methodologies are understood and implemented. The required methodology may be different from how you report data internally or even on other reports. This is important in order to guarantee accurate comparisons to other institutions. Third, all data should be at least double checked. It is not bad policy to require any data reports delivered from the IR office to go through at least three pairs of eyes before being released, and, in this case, because the data are often available to both internal and external audiences, it is even more critical to thoroughly review the data before submission.

Lastly, the development of a yearly activity calendar should be a standard tool in all IR offices. The calendar should include start dates, review dates, and due dates for all external data reports, as well as internal and external surveys of students, faculty, alumni, etc. Also included are analytical reports produced on a regular cycle. As a bottom line, any activity that occurs on a regular basis that has timelines and deadlines should be included on the calendar.

4. Develop interactive online reports that are updated daily and by quarter/semester.

As mentioned earlier, data management and reporting are fundamental, indispensable responsibilities within a college or university. Inherent within this need, the provision of accurate and timely data is critical. However, the constant, rapid-fire, "I need the data yesterday" nature of ad hoc requests can often detract from both timely delivery and accuracy. It is therefore helpful to design a system that allows for reports to be developed in advance without the time pressure, which allows for careful thought about methodology and for double-checking results.   It is also beneficial if end-users are able to access the reports at any time from any place. The development and delivery of online reports accomplishes both of these criteria.

It is not the goal of this paper to discuss which tools are best for online report development but rather to suggest that to create effective data reporting, the best business intelligence (BI) tool for your institution should be researched and implemented. The authors' experience is with Microsoft Reporting Services and Sequel Server, and this tool has proven to be relatively inexpensive and effective. Whichever tool is chosen, the reports should allow for easy selection by the end-user via drop-down menus of parameter selection such as year, quarter/semester, program, etc., in order to provide an easy method to filter data.

Security and access should also be given high priority in designing an online system. This can include encrypting the data that sit on the server, as well as utilizing two servers, one for data storage and development, and the other for deploying the reports to the web. In terms of access, this can be assigned by roles or job function (i.e., one has access to specific reports as needed to perform

job responsibilities). It is also a good idea to have all staff go through FERPA training before being granted access to reports.

The prioritization of which reports to develop should be based on institutional priorities. Be advised that the report development and implementation does require dedicated personnel with the proper skill set. It is not hyperbole to say that these reports will become extremely popular and well-utilized throughout the campus. In fact, the office will most likely always have a queue of reports waiting to be developed. The following are some suggested secure reports requiring a staff log-in that might be useful on many campuses.

    a. **Course enrollments and credit hours.** These reports can update both daily and by quarter/semester and data columns can include department/program, course number and section, course title, faculty, class times, days, credits, room/building, room cap, academic cap, number of students enrolled, number of seats available, number of students denied. Selectors might include year/quarter/semester, program/department, and course type.

    b. **Application counts, status, demographics.** A suite of reports can be developed for new student applications including daily application counts by major, application status by major, and applicant demographics. The reports might include a comparison to the previous two years on a day-to-day basis. An "All Application" report is also useful for enrollment management. This report can drill down to applicant name, application received date, status of application, student identification number, requested major or major, applicant demographics, SAT/ACT scores, high school information such as GPA, and contact information. Parameter selectors can include registration status and application class in addition to others.

    c. **Student headcount, FTE, demographics, eligible to register.** In contrast to the application reports, this set of reports deal with continuing, returning, or new students. A daily student headcount by class, daily headcount by program or major, a daily FTE report, and an eligible to register report of continuing and returning students are examples of these reports. For example, the eligible to register report can contain student ID number, name, contact information, class standing, total credits earned, quarter/semester last registered, whether there is a registration hold, and if tuition exempt. Parameter selectors can be continuing student versus returning, registration status, graduation status, and class level.

Lastly, an online public fact book and a quick facts page should be developed and deployed on the public site of the IR website. A quick facts page should be a standard on every IR website. The quick facts may be only for fall quarter/semester and ideally, may even contain a link to the previous year's quick facts. Each institution will decide what facts to display but a few suggestions are FTE, headcount by class, gender, race/ethnicity, full-time/part-time status, age breakouts, residency status, county of residence, top high schools, top community college transfers, faculty counts, average class size, total student credit hours, and tuition rates.

5. **Develop a dedicated, secure web presence to make data and reports available 24/7 from anywhere in the world.**

Once data reports are developed, the IR office needs a mechanism for displaying reports and for making them available 24 hours a day from anywhere in the world. This can be accomplished very effectively through the creation of a dedicated secure IR website. The creation of an IR website can provide the centralization, conformity, consistency

and clarity of a Data Diamond because the online reports will be located in a one-stop website, while pulling data from the data warehouse or data marts. The online reports should also be designed with drop-down menu selectors that allow end-users to easily filter and select data. Reports should allow for exporting to Excel, CSV format, or pdf and printing. Although the online secure data reports and an online fact book will be main components of the IR website, it also provides a central repository for other IR deliverables such as analytical reports, survey results, environmental data, quick facts, and links to relevant data sources. As end-users become comfortable with the site, this will become the first place they will look when seeking data. The ultimate goal should be to replace static Excel reports sitting on a hard drive with interactive updated reports accessible on the web.

Be advised that the creation of an IR website requires many skills, resources, and time. The ideal scenario is to have the skill and resources contained within the IR office because of the constant and ongoing need for updates and maintenance. As a fallback, the IT or marketing departments usually have webmasters on staff and may be willing to assist. However, the high-level technical site required for institutional research, including the need for a secure log-in for staff along with the required maintenance, makes it advisable to have the web expertise reside within the office.

Additionally, drafting a project plan that defines the parameters of the website is advisable before undertaking the website development. What will be the navigation and menu system of the site? What data will be stored? How and how often will the site be updated? These are all necessary components of the project plan. Always keep in mind, as a core requirement, the usability of the site. Are end-users able to easily find the data or information they are seeking? A proven method to assist in the development of the project plan is to solicit input from a wide variety of key data-users.

Analytical Reporting

Although the reporting of data statistics through spreadsheets and online tools such as Microsoft Reporting Services is a vital function of institutional research, these reports alone are often not sufficient to serve the complete information needs of an institution. The provision of value-added, in-depth statistical analyses that transform data reports into understandable, actionable information is often required. These analytical reports should be produced on a regular cycle during the academic year and be centered on institutional priorities and performance indicators or benchmarks. The reports should be added to the yearly calendar mentioned in the previous section. The indicators and benchmarks should be guided by national norms and standards available from peer institutions. It is important to track historical trends within the institution and to summarize changes in these trends. And above all, once analyses are produced, the results should be effectively communicated and explained to key constituencies and senior managers and leaders. These analytical reports should help to inform assessment activities throughout the year. The following are a suggested list of the top five activities to implement in order to fulfill this important data foundation.

1. **Establish and implement a work plan of analytical reports to be developed during the academic year, based on university priorities and areas emerging from key performance indicators and assessment data.**

The provision of well-designed analytical reports to key constituencies should play a major role within any IR office. In addition to being of high value to the institution, these types of reports are the reason why many chose to join the IR profession; they are professionally stimulating and rewarding. These reports should be added to the IR yearly calendar to be produced on a regular basis. It is advisable to create templates that facilitate

not only the report development on a continual cycle but also add an ease of understanding for the readers who will become accustomed to receiving standardized reports. The templates will provide easy production of reports with standard statistical techniques, tables, and analysis with updated data.

Every institution is unique in reporting needs; therefore, IR personnel should take the time to discover what reports are most needed within their specific institution. The following are a "Top 5" list of analytical reports provided only as a guideline but are certainly reports found to be of value at many institutions.

- Retention/Persistence/Graduation studies with odds;
- Space utilization and management reports;
- Productivity reports (faculty workload, grants and research, student credit hours);
- Enrollment management reports with odds of enrollment and characteristics of applications and enrollment; and
- Finance/revenue reports (revenues and expenditure trends).

2. Develop key performance indicators to measure effectiveness compared to peers and national standards.

Setting key performance indicators (KPIs) is necessary in order to measure institutional effectiveness. The measurement of the KPIs aids both accountability issues in accreditation as well as informs institutional improvement in assessment. However, just as the identification of peer institutions can be a political process and therefore presents difficulty in reaching consensus, obtaining agreement around the identification of key performance indicators can also be an intense political process. In particular, close attention needs to be paid to the methodologies selected to measure the indicators. For example, if it is agreed to have the student/faculty ratio as one of the performance indicators, administration and faculty might have different ideas on how and who to

count as faculty. This is where it might be advisable to adopt a standard methodology from one of the national reports such as the Common Data Set. Additionally, the identification of where the data will come from to measure each KPI should be defined at this development stage.

The KPIs should be established for the institution but certainly can be a part of unit assessment plans as well. For the institution-level KPIs, it is advisable to involve a broad, representative spectrum of constituents from throughout the college or university community. This broad involvement ensures that the KPIs will be the most relevant and important measures to track. The KPIs should be tied to existing plan goals in order to ensure relevancy. The State Higher Education Executive Officers (SHEEO) website provides an excellent reference site for state accountability measures and performance indicators (http://www.sheeo.org/links/links_results.asp?regionID=53&issueID=2).

A mechanism or mechanisms need to be defined as to how and when progress on the KPIs will be reported. This could be as seldom as within an annual report or as often as a continually monitored dashboard available on the IR website. Somewhere in the middle may be quarterly/semester reports that advise budget and other policy decisions.

A helpful tool to create a balanced set of indicators that recognizes the many dimensions that contribute to a successful organization is one borrowed from the world of business, aptly named a balanced scorecard. This tool was introduced by Robert Kaplan and David Norton in 1996 in the *Harvard Business Review* in recognition of the fact that focusing solely on the financial aspect of an organization is insufficient for success. The balanced scorecard identifies four perspectives that an organization should consider in planning and assessing performance: (a) financial, (b) customer, (d) business processes, and (e) learning and growth. This tool has been used successfully in institutions of higher education, either in the original format

or as a modified version, such as that described by Carpenter-Hubin and Hornsby (2005).

3. **Monitor and report on historical trends within the institution and summarize key findings that merit high-level consideration at the institution.**

With the constant demand upon IR offices to produce current data reports, the value of historical trends can sometimes be overlooked. However, it is within historical trends that the most informative data can often be found. Only by looking at data in the context of trends does one gain a sense of importance or relevance. What may initially appear to be alarming or encouraging may well be tempered by a 5- or 10-year perspective. The trend data reports also provide an easy-to-find source of historical data.

Because it generally does not require much more effort to generate several years of data than a single year, one should always consider gathering several years of data, if available. For example, if the data are extracted using SQL coding, why not simply write the code for several years instead of one? This is a good "best practices" business rule to establish for data coders.

The historical trends are also great candidates for charts, which can graphically spice up any report or website in addition to providing the rich and informative data. Most software programs today have relatively easy-to-use graphing capabilities. These trend charts also are often required in self-studies and accreditation reports.

4. **Utilize research already available by keeping up with IR literature and seek assistance of experienced members of IR community nationally and internationally to inform your work on research studies.**

There is a wealth of guidance available for developing quality analytical reports. Although each IR office certainly needs to determine the methods, techniques, and reports that are most suitable for its respective institution, there is no need to reinvent the wheel. By actively reading published literature, one can often find existing studies and models to apply to your reports. A great source is published literature available through online databases usually available through an institution's library. Another recommended source is Pascarella and Terenzini's updated 2005 work, *How College Affects Students: A Third Decade of Research* (Vol. 2).

Joining professional organizations can also provide a tremendous source of guidance and assistance. The Association for Institutional Research (AIR), The Society for College and University Planning (SCUP), and The Higher Education Data Warehousing Forum (HEDW) are only three of the various professional organizations from which one can benefit through networking and shared expertise. Additionally, there are many electronic mailing lists to which one can subscribe to in order to benefit from the expertise of colleagues. The SPSS [SPSSX-L@LISTSERV.UGA.EDU] and SAS [SAS-L@LISTSERV.UGA.EDU] listserves, the HEDW [hedw@Princeton.EDU] listserve for data warehousing, and the Reshaping IR [RESHAPING_IR@LISTSERV.CSUFRESNO.EDU] listserve for IR practitioners are only a few examples.

Lastly, assuming an office has established a budget for training, there are a variety of associations and companies that provide training on a contract basis. In addition to increasing the skills within an IR office, this training can be a positive motivator for staff who benefit from the professional development. All of the large software companies provide some version of training, either on location or online. There are also many consulting companies who conduct specialized training as well. There are an ever-increasing number of online webinars also available, some free and others at minimal cost. This includes those provided by AIR http://www.airweb.org/?page=685.

5. **Effectively communicate findings of analytical reports on actionable items to key decision-makers and campus community, as appropriate.**

As basic as it sounds, a key action needed to ensure the success of an IR office is the effective communication of analyses to key stakeholders. If produced reports simply sit buried in the IR office or even on a web page, all the effort and hard work of the office will be for naught. Establishing standard procedures to deliver analytical reports should be a business rule within every IR office. There are several methods available to most offices to effectively employ this strategy. First, every institution usually has email lists of existing committees. Make a list of relevant committees and groups on campus and email reports to those committees to whom the work is relevant. There is no need to be overly discriminating here; often an analytical report can be inconspicuously useful to a committee that might not seem to have a direct interest. And promotion of the IR office's work is a good thing. The senior management team should always be included among these groups.

Second, be proactive in asking for time on committee meeting agendas. The conventional "dog and pony" show can be quite effective when sharing results. In addition to creating valuable face-to-face interactions, live presentations of data can provide the opportunity for the audience to ask questions, thereby clarifying any possible confusion around the report.

Lastly, always post your reports on your dedicated website using a clearly defined menu that simplifies an end-user's ability to locate the report. It is advisable to have a highly visible space on your website dedicated to "What's New" or "Newly Published Reports." It can also be effective to convene occasional meetings of known end-users of your data, to walk them through your website and demonstrate how to find data within the site.

As a bottom line, be proactive in getting your analytical reports out in as many ways as possible to as broad an audience as possible.

Planning and Scanning

Strategic planning and the accompanying environmental and internal scanning required for effective strategic planning are extremely important functions for an IR office to perform. In addition to providing underlying institutional data from assessments, scans, analytical reports, peer and national benchmark comparisons, and data from enterprise data systems, the IR office can bring a holistic institutional understanding to inform the strategic planning process. In fact, it is the strategic planning process that ties together all the activities in which the IR office is involved. The IR office can also provide a critical function in helping to integrate all planning across campus. This can include identifying cross impacts and tracking linkages to budget. It is also important for the IR office to stay involved in strategic planning by helping to monitor progress on the goals of the strategic plan. This not only provides valuable assessments but also maintains the strategic plan as a living document, rather than something that simply sits on the shelf. In addition to supporting the institutional strategic planning process, the IR office needs to develop its own strategic plan that clearly defines its roles and responsibilities in order to effectively fulfill its function within the institution. McNamara (n.d.) provides a good overview of strategic planning including understanding strategic planning, implementation, benefits, and basic models.

1. **Develop an IR office strategic plan that clearly articulates mission, values, goals, and objectives in order to assess the progress of the IR office.**

Although support for strategic planning at the institution level is a common role for IR offices to perform, how many IR offices develop their own

strategic plan? The importance of this cannot be overemphasized. A significant barrier to the success of an IR office can occur when the mission and goals of the office are not clearly articulated because this can enable "mission creep" (i.e., stretching an office beyond its resource capabilities through requests for projects and services outside of the defined scope of the office). As discussed earlier in the paper, the definitions of IR are wide and broad, and a nebulous definition of IR responsibilities can lead to constituents placing unreasonable demands upon the office. The solution to this is the publication and promotion of an IR strategic plan that informs everyone of the scope and mission of the IR office.

The strategic plan should be developed in concert with senior administration and other key data users and should be based upon the mission of the institution to ensure that the IR office is relevant to the effectiveness of the institution. When there is strong linkage between the IR mission and goals and the mission and goals of the institution, all reports and services provided have a better chance of being utilized. In other words, it is up to the IR office to clearly define the meaning of IR at your institution.

There are many existing models of strategic plans to review and adapt. One suggested source of reading is the Higher Education Resource Hub (n.d.) website (http://www.higher-ed.org/strategic_plans.htm), which provides links to various strategic plans as well as other strategic planning resources. After studying various plans from other institutions, a plan customized for the IR function at your institution can be crafted. At a minimum, it is suggested that the plan include a mission statement, values, vision, a SWOT (strengths, weaknesses, opportunities and threats) analysis, and goals/objectives/metrics. The goals section should also contain the calendar of critical IR timelines for reporting and surveys.

Assessment of the IR strategic plan should be conducted on an ongoing basis. If IR is the office preaching assessment, then it is purposeful for IR to lead the way by assessing itself. Customer satisfaction can be measured through surveys, as well as focus groups. Additional assessment can be conducted through analysis of data delivery, timeliness of delivery, and implementation of stated goals.

2. **Be involved in the development of the institution's strategic plan and provide relevant institutional data to support the development of the plan including a SWOT analysis. Conduct environmental scans and perform surveys of stakeholders to support strategic planning efforts including new program development.**

The development of the institution's strategic plan is an important activity that should be the guiding influence to enhance, and perhaps, transform the institution. It is an activity in which IR should be involved because the use of relevant data, the knowledge of environmental factors that may impact the institution, and the broad participation of stakeholders in charting the course for the institution's future are all hallmarks of a useful strategic plan, and these are areas in which IR has expertise. There are some foundational institutional data that should be considered in developing a strategic plan and could serve as benchmarks. They include the following:

- Student trend data on enrollment, degree production, retention, and graduation;
- Characteristics of students entering the institution (demographic and academic performance);
- Data on academic program productivity/instructional activity;
- Fiscal data including allocation/expenditures by divisions and programs; endowment information;
- Faculty numbers, characteristics, and distribution among academic areas;

- Research and scholarly activity (if appropriate to institutional mission);
- Space and physical facilities information to assess current status and gaps; and
- Issues revealed through assessment, including institution-wide surveys such as those relating to engagement, opinions on institutional services, and basic skills.

In addition to institutional data, it is advisable to conduct a SWOT analysis to determine strengths that the institution may capitalize on and further develop, weaknesses that must be addressed in order for the institution to advance, opportunities in the environment that could be utilized, as well as plan for mitigating potential threats to the institution. A related activity is conducting an environmental scan, which can include an analysis of competitors, market research, and analysis of viability of contemplated new programs. To have wide participation and buy-in for the plan, it is essential to seek input from stakeholders on the SWOT analysis and allow them to provide their insights and perceptions related to the direction of the institution. IR can also be effective in helping to state goals in measurable terms so that the implementation can be managed and assessed effectively. Measurable goals should also have benchmark data against which to assess progress. Some institutions find SMART (specific, measurable, attainable, realistic, timely) goals useful in strategic planning. The utilization of a balanced scorecard as mentioned in the previous section is also useful for assessing progress within a strategic plan.

3. Develop a list of peer institutions.

As mentioned previously in the paper, the development of inter-institutional peer comparisons plays a large role in establishing benchmarks and assessing progress in meeting these benchmarks. The availability of comparative data will add validity to policy development and operational decisions that affect salary and budget decisions. There are four major groups of peer institutions that can be identified: peer, aspirational, competitor, and predetermined (Teeter & Brinkman, 2003). Perhaps the most common groupings and those best utilized for comparative data reports are the peer group that identifies similar institutions and the pre-determined group based on athletic conferences, history, or geography; although, there is certainly high value in identifying aspirational and competitor peers.

Be forewarned that the establishment of peer groups can be one of the most political issues an institutional researcher will encounter. It is not uncommon for the IR office, top administration, deans and faculty, and governing boards to all have different ideas of who an institution's peers should be. Therefore, it is advisable to establish a well-thought-out approach to researching and establishing the peer comparison institutions. Although any selection method will be open to political attacks and agendas, the following is one suggested method that can help minimize attacks and gain consensus.

As a first step, create a list of possible variables to use in comparisons. The list should include all known factors that influence campus culture and decision making. The list might include variables such as the total number of students, ratio of underrepresented minority students, tuition cost, program mix, faculty salaries, amount of grants and research, geographic location of campus, etc. With some inquiry and research, it is relatively easy to generate a list of 40 to 50 variables.

Once the list is completed, it can be placed into a spreadsheet format and presented to a broad group of key constituencies to rank or weight the variables in order of importance. For example, many institutions have some type of leadership council of campus leaders including deans, directors, students, and top administration. The variable spreadsheet can be presented to members of this council to rank the top 10 variables in order of importance, both for peer and aspirational peer comparisons.

The results can be tabulated to create a weighting system. The tabulated results should then be re-presented to the leadership council for confirmation and tweaking. With agreement on the variables, the IR office can then go about finding peer institutions based on the agreed-upon variables of importance. The resulting peer list can then be presented to the leadership council for discussion and affirmation. At the September 2010 Southern Association for Institutional Research (SAIR) conference, McLaughlin, McLaughlin, and Howard provided a detailed explanation of a process to select variables and apply weights in order to create peer institutions based on nearest neighbors.

4. **Promote the development of aligned campus planning including links between unit plans and the strategic plan, as well as integrating all major campus plans to show links and impacts between campus initiatives (finance plan, academic plan, student life plan, development plan, and strategic plan).**

Although the concept of integrated planning tied to budget has existed for a number of years in the business environment, there is not much evidence of its effective implementation in higher education. Integrated planning, in general, refers to the connection of planning functions that include technologies, applications, and processes across an institution to improve institutional alignment, student success, clarity of direction, and financial performance. Most institutions have a variety of major plans on campus ranging from an academic plan, a student life plan, a facilities capital plan, an advancement plan, an enrollment growth plan, a finance plan, and a strategic plan. While it is commendable that individual departments develop plans detailing major initiatives, if these plans are developed in isolation or do not take into consideration the impact on other plan initiatives and the total impact on budget, an institution may find itself in an antagonistic position with conflicts between departments. Additionally, as

the current economic crisis and resulting budget cuts have shown, if institutional priorities are not clear, making budget cut decisions can be quite difficult. Traditionally, strategic planning was supposed to facilitate this planning, and while the concept of strategic planning has merit, the successful application of the plan is often lacking. In reality, strategic planning often does not drive the critical decision-making process. Leaders can make decisions using incomplete information, which can cause sub-optimal resource allocation. While each functional department silo is often disconnected at the strategic level, the disparate plans are indeed connected at the operational level.

There is a need to create a comprehensive understanding of strategic directions, in other words, to create a clear path from decision making to institutional priorities related to mission and budget. This requires a clear understanding of an integrated relationship of major campus plans and supporting plans. Because this requires cross-institutional understanding, this is a key function that the IR office can perform. Although this is not a traditional role of IR, who else is better situated to serve this critical function? The IR office can not only record the overlaps and impacts between campus plans but can also track and monitor impacts to budget.

An initial step to promote integrated planning can be to call all the major plan stewards and senior administration together for a one-day retreat to discuss the implications of non-integrated planning. Have each plan steward record his or her respective plan initiatives year by year over the next five or six years. Then put all the initiatives together by year. It becomes graphically clear that each plan initiative may impact other plan initiatives. For example, if the academic plan calls for the introduction of a new high-demand major the next year, the following questions may arise: How will this impact the student life plan? What additional facilities will be required? What role might the advancement office play?

5. **indicators and goals and provide an annual report on this progress to institutional leaders.**

    A strategic plan is only as useful as the actions it generates. Equally as important as developing a strategic plan is the development of a systematic mechanism to monitor progress on the goals of the strategic plan. This task may fall within the purview of the IR office. For successful implementation, each goal within the strategic plan should have these elements:

    - a responsible party identified for its implementation,
    - a timeframe,
    - anticipated results, and
    - assessment of the actual results.

    As discussed above (item #3 under Planning), the units should have unit-level strategic plans or at least goals that link to the institutional strategic plan goals for which they are responsible, and should report on results of their actions on the goals on an annual basis. IR may decide to use a commercial product to gather and monitor such planning information, or develop one in-house. Either way, it is essential to monitor progress on the strategic plan in order to have a truly effective strategic plan that moves the institution forward. IR would need to assess this progress based on the information gathered from the various units responsible for the implementation of each goal. The institutional leaders need to be apprised of the progress so that determinations can be made for changes in strategies, in allocation of resources, or, sometimes, in modification of goals that are informed by the feedback loop during implementation. Strategies from the world of business, such as the balanced score card, can be adapted to determine the success and need for modifications along the way.

Assessment

Assessment has become a cornerstone of both regional and specialized accreditation within the past two decades. Regional accrediting bodies expect that the institution regularly assesses whether it is meeting its outcomes in all aspects of its operation, including financial solvency, academic programs, student support, educational support, and administrative units. This includes assessment of central activities that cut across units or even the entire campus, such as general education. Specialized accrediting bodies also expect systematic assessment of various components of the programs undergoing assessment. It is imperative that an institution have a formal, institution-wide assessment system that is documented consistently, over a period of time. This is not an activity that can be undertaken simply during the year of accreditation. Accrediting bodies expect that assessment activities are a normal part of how the university operates, are continuous, and result in demonstrable improvements over time. A central office, such as IR, needs to have the authority to institute, monitor, and make revisions to an assessment system. The essential activities that should be undertaken by a central unit on behalf of the institution include the five activities that follow.

1. **Establish an electronic system for regular reporting of assessment plans and results.**

    Include elements required for your institution's regional accreditation and sufficient flexibility to adapt to specialized accreditation assessment requirements as well. Critical elements that all accrediting bodies require for assessment include identification of desired outcomes, measures of the outcomes, analysis of the measurement results, and improvements based on the results. The electronic system should capture, in summary form, the elements specified by the regional accreditation body for the institution. While the system may be built to meet the regional accreditation requirements for reporting, it should have sufficient flexibility that programs with specialized accreditation may meet their accreditation requirements with respect to assessment as well, with one activity, rather than

two sets of assessment activities to satisfy regional and specialized accreditation. Several commercial products are now available to document assessment activities. Alternatively, an institution may develop its own system.

2. Monitor reporting into the system to ensure universal participation.

It is important to establish a university mechanism for regular review, feedback, and evaluation to ensure assessment is meaningful and resulting in improvements. In an institution's early years of assessment activities, considerable monitoring is required to ensure that all units are participating. Faculty who are accustomed to perceiving themselves as completely independent agents are unaccustomed to collective discussions about assessment results that demonstrate the achievements of students in aggregate. Faculty are now required to work together to identify program outcomes and to demonstrate that students are indeed achieving those outcomes. For programs that undergo specialized accreditation, the assessment should address the outcomes and elements specified by the accrediting body, if any.   The monitoring and review should ensure that all of the steps of the assessment system are being completed and followed, including making improvements. In the absence of this last essential step of "closing the loop" by making improvements based on assessment results, one has not truly engaged in systematic assessment and would not be able to demonstrate institutional effectiveness.

The monitoring, review, and feedback could be done by IR staff, if sufficiently knowledgeable, or by a committee of appropriate individuals including faculty, convened by IR. It is advisable to have an assessment committee on campus so that the ownership and expertise is not simply concentrated in IR. Committees may also be identified to be responsible for assessment activities that cut across units, such as general education or a Foundations of Excellence (http://www.fyfoundations.org)

review of first-year programs. In such activities, the committees would document that students are meeting the learning outcomes identified by the institution for general education (sometimes referred to as the core) or Foundations of Excellence through assessment activities and recommend improvements based on analysis of assessment results. While the committees may not assess students directly, they would analyze student products (perhaps from courses involved in general education or the Foundations of Excellence) and develop an assessment report for the activity.

3. Conduct national and in-house surveys at the institutional level for assessment purposes, such as the National Survey of Student Engagement (NSSE), student exit surveys, alumni surveys, feeder institution surveys, external community surveys, and faculty/staff/student satisfaction surveys.

Assessment requires both direct and indirect measures. The indirect measures include surveys and usually include those listed above. Participating in NSSE/FSSE and other national surveys provides a convenient means of comparing performance of the institution to that of peer institutions. They may be administered about once in three years in order to track changes (more frequent administration may not provide enough new information to outweigh the cost of administering the survey). Some surveys may be developed in-house. It is advisable to include the campus assessment committee, or a campus survey committee, in these decisions and even in the development of local surveys. Beware of assessment and survey fatigue, which will make it difficult to convince respondents to complete yet another survey. It is therefore necessary to be strategic in which surveys are to be utilized and obtain the most important information from them. IR will probably be responsible for administrating the institution-wide surveys, and IR may be called upon to assist units to devise and analyze their own surveys for the unit assessment reports.

Examples of national surveys widely used for assessment are available on the National Center for Postsecondary Improvement website (http://www.stanford.edu/group/ncpi/unspecified/assessment_states/instruments.html#institutionalEffectiveness). *[Note to compositor: In the bulleted list below, please remove the embedded URLs. They are old links that return error messages, and the information is provided in the URL above.]* The instruments listed on the site are organized into four categories:

- Institutional Effectiveness (surveys the opinions and institutional experiences of the students, faculty, staff, administrators, or alumni);
- Basic Skills (measures the general cognitive capacity of the students);
- Affective Development (surveys the values and social development of the students); and
- Major Field Exams, including Biology, Business, Chemistry, Computer Science, Criminal Justice, Economics, Education, History, Literature in English, Mathematics, Music, Physics, Political Science, Psychology, and Sociology.

AIR also has several assessment resources listed on its website (http://www.airweb.org/Resources/Links/Pages/LinksQualityAssessment.aspx).

4. Assist all campus departments in the development of assessment plans including outcomes and measures. Provide institutional and unit-level data to support unit assessment activities.

Individuals and units throughout the institution need ongoing professional development in assessment. Although the most intensive training needs to occur when the assessment system is introduced, it takes a few years for individuals to become proficient in assessment. In addition, the individuals responsible for overseeing assessment in the various units change over time, and it is necessary to train new individuals as well as provide refreshers to others. The IR office will need to organize systematic professional development, either by providing it or arranging for experts within the institution and/or external to the institution to provide it.   Such assessment workshops may address the following topics:

- introducing the institution's assessment system;
- writing program outcomes;
- determining viable direct and indirect measures;
- developing rubrics for assessment;
- using portfolios for assessment; and
- closing the loop: making improvements based on assessment.

It is very helpful to make available on the IR website assessment resources from the vast literature on assessment, including publications from the regional and specialized accrediting bodies on assessment and resources from other institutions.   One such comprehensive resource from Schechter (n.d.) is posted on the North Carolina State University Planning and Analysis website at http://www2.acs.ncsu.edu/UPA/assmt/resource.htm.

IR should provide data that units need as part of their assessment activities or provide advice on collecting new data. For example, if an outcome deals with retention issues within an academic program, IR can provide the data that will help assess if the activities undertaken to improve retention have been successful.

5. Summarize key findings from assessment that merit high-level consideration for action at the institution.

The assessment information gathered across an entire institution is voluminous. While many assessment findings can be acted on by the units conducting the assessment, other findings may be at an institutional level and require the attention and action of the institutional leaders. IR or the assessment committee will need to

review assessment findings and ascertain the most important actionable issues that require institution-level attention and present them succinctly to the leadership, along with possible solutions. For example, if NSSE results indicate that students across disciplines feel they do not have adequate access to faculty members, this could be an issue that is discussed at an institutional level with faculty and academic administrators to determine what actions may be taken to address this concern. Because closing the loop by making improvements is essential to good assessment, IR needs to find effective means of bringing high-level findings to the attention of institutional leadership, making them part of the conversations surrounding resource allocations, and identifying strategic priorities.

Accreditation Support

Institutions of higher education in the United States engage in the peer-review process of accreditation for quality assurance and accountability. Accreditation takes three forms: national accreditation for special types of institutions, regional accreditation, and specialized or programmatic accreditation (WorldWideLearn, n.d.). All of these forms of accreditation are high-stakes activities, and an IR or IE office can play key roles in assisting the institution in these important endeavors. Regional accreditation places its stamp of approval on the entire institution and is granted by one of six regional accrediting bodies. Most institutions of higher education in the United States have regional accreditation. Some institutions that have a very focused curricula, such as theology, health education, or career education, are accredited by national accrediting associations. In addition, there are specialized accreditation agencies for discipline-specific programs and special types of accreditation that may be limited to those institutions offering such discipline-specific programs.   These regional, national, and specialized accrediting bodies are, in turn, recognized by the

U.S. Department of Education. Loss of institutional accreditation is a severe blow. It results in not only the loss of recognition by peers, but it is often fatal to an institution because it withdraws eligibility for Title IV funds (i.e., the students of the institution are no longer eligible for federal financial aid). Specialized accreditation is specific to a particular discipline, such as business, engineering, nursing, or education. The loss of specialized accreditation, even within a larger institution that maintains regional accreditation, can have a significant negative impact on the ability to recruit quality students and faculty and to attract external funding. In some cases, particularly in the health disciplines, it makes graduates of the program ineligible for licensure or certification. It is therefore imperative that the institution and academic programs seek and maintain both regional and specialized accreditation. Institutional effectiveness is an essential requirement in institutional accreditation and is discussed within the assessment section as well as within this section.

Below are five activities in which institutional research can engage to help attain successful accreditation.

1. **Conduct gap analysis for regional accreditation criteria and ensure a strategy to address gaps.**

   In preparing for institutional accreditation, at least three years prior to the year the self-study is due, an institution should conduct an institution-wide gap analysis to determine if there are any areas of weakness or noncompliance in relation to the regional accrediting body's standards. This analysis can be conducted by an office, a select group of individuals, or a committee structure where subcommittees are responsible for clusters of standards. The organizational structure for institutional accreditation should be one that works for the particular institution, considering its strengths and organizational culture. Whatever the structure chosen, the effort, starting with

the gap analysis, must be well organized by an entity at the institution and must obtain comprehensive information from all facets of the institution, including academic, student support, educational support, and administrative units. For each standard, the unit organizing the effort must become familiar with what the accrediting body expects within each standard, and the documentation and information required. It is necessary for an individual or group of individuals leading the effort to attend one or more of the training sessions provided by the accrediting body to become familiar with the expectations for each standard. It is also very helpful to become familiar with the publications by the accrediting body regarding particular standards and with a few self-studies of other institutions that have successfully navigated recent accreditation visits by the same accrediting body. Armed with this information, a gap analysis should be conducted for each standard, identifying the following types of information:

- Based on knowledge of the expectations of the standard, is the institution in compliance?
- If so, what activities, policies, practices and documentation exist to demonstrate compliance? Where is this information available?
- If not, what needs to be done in order to bring the institution into compliance?

Develop an action plan for each area of weakness or non-compliance and obtain the support of the highest levels of leadership at the institution to implement the plan in a timely manner so that the institution is in full compliance prior to submission of the self-study. The most important standards, which can have a significant impact on the successful outcome of accreditation, merit special attention to ensure compliance. These core standards vary by the institutional accrediting body, but generally include governance, evidence of fiscal stability, institutional or educational effectiveness and assessment, and sufficiency of

faculty. For example, the Western Association of Schools and Colleges (WASC), a regional accrediting body, defines two basic areas of core commitments: institutional capacity and educational effectiveness. An example of a format for a gap analysis is included in Appendix A.

2. Establish a repository that is kept up to date and which provides, or indicates the location of, documents and evidence needed for regional accreditation.

As one conducts a gap analysis, one becomes aware of the types of documents that will be needed to demonstrate compliance with each standard. Often the documents are scattered throughout the campus, may be incomplete or out-of-date, and reside with individuals who may not be at the institution by the time the self-study is developed. It now becomes necessary to begin developing an electronic repository of the documents that is readily accessible as the self-study is developed. The repository can be organized by standard and can also contain a library of documents to be referenced for more than one standard. Examples of general documents that may need to be referenced by several standards include:

- The current mission statement of the institution;
- The current strategic plan;
- Minutes of meetings of the governing body;
- Minutes of meetings of important committees or bodies such as the Faculty Senate;
- The institution's policies and/or regulations;
- The institution's procedures for various activities; and
- Any other documents that have helped to shape the institution's current activities.

Beyond these fundamental documents, each standard will also require additional specific documents. For example, the standards on assessment will require a database documenting assessment activities by each unit throughout the

institution. Generally, accrediting bodies require several cycles of assessment data; it will not be sufficient to provide data only for the year in which accreditation occurs. Such a database is discussed in greater depth in the section on assessment in this paper.

It is important to not only establish the repository but also to keep it up to date so that by the time of the self-study and site visit, current documents continue to reside in the repository. If the repository is kept up even following the successful reaffirmation, it will be a very helpful tool for the institution's normal functioning and will make it much easier to mount the next reaffirmation effort.

3. **Make available necessary institutional and programmatic data for accreditation reports and program reviews.**

Self-studies for institutional accreditation usually require extensive data to demonstrate compliance with some standards. This may include both data about the institution itself as well as comparative data for peer institutions. It is important that IR provide these data so that they reflect official institutional data and are consistent with data the institution has reported to IPEDS and other national reporting systems. Accreditation teams may review and compare data in the self-study with data reported by the institution elsewhere, and inconsistencies will raise questions. IR can provide data that bolster arguments made in the self-study that the institution is in compliance with standards such as listed below.

- Data that demonstrate the institution is meeting the various components of its mission;
- Data that demonstrate that the institution is educating and graduating students at rates comparable to or better than its peers;
- Data on enrollment and graduation;
- Data on sufficiency of faculty and their qualifications;

- Data on financial status of the institution; and
- General information for the institution, such as historic information, governance structure, institutional policies and procedures such as those governing admission, graduation, and transfer of students.

The data required from IR for specialized accreditation may be less extensive than for institutional accreditation. The data may include some institution-level data as well as data specific to the program seeking accreditation and peer data for the particular program. Again, it is important that the data be provided from IR so that they reflect official institution data that are consistent with data reported to external entities such as IPEDS, rather than relying on data generated internally by the program alone. Programs may use definitions that vary from data definitions in common usage and end up with data that are inconsistent with nationally reported data. If the accrediting body specifies particular data and definitions of such data, IR could work collaboratively with the program to generate the data required.

Another means of assisting academic departments to meet institutional accreditation requirements is by helping them conduct program reviews. Program reviews became widely used as quality assurance activities in the United States beginning in the 1970s (Bogue & Saunders, 1992). Since that time they have evolved as an important component in demonstrating institutional effectiveness to accrediting bodies. The espoused purposes of program reviews in many public and private institutions now reflect increased institutional aspirations, accountability, and a focus on student learning. While faculty committees may be conducting the academic program reviews, many IR or IE offices provide the appropriate data and may coordinate the program review activities of their institutions. Program reviews may take many forms, ranging from a quantitative emphasis to a qualitative emphasis in judging the viability, quality, and accountability of programs. The reviews may

also involve external consultants who are experts in the disciplines being reviewed or internal institutional committees that review the program's performance on a set of standards much like specialized accrediting bodies. In fact, for programs that undergo specialized accreditation, it may be advisable for such accreditations to serve the purpose of program review, rather than engaging in a duplicative activity. A discussion of various forms of reviews and how one may select a methodology best suited for one's own institution may be found in the *AIR Professional File* article, "Program Review: A Tool for Continuous Improvement of Academic Programs" (Pitter, 2007).

4. Collect and update annually, information on regional and specialized accreditation and upcoming accreditation site visits.

While regional and national accreditation is addressed at the institutional level, specialized accreditation is usually best addressed by the academic unit undergoing that accreditation. Therefore, a dean or department head would be responsible for specialized accreditation activities. However, it is important that the institutional leadership is aware of all the major accreditation events at the institution. To this end, a central office, such as IR, should maintain on an annual basis, a listing of all accreditations at the institution, the period of accreditation, when the next self-study and site visit would be due, and plans for seeking any new accreditation. A sample format for such a document, utilized by the State University System of Florida, is included in Appendix B. A document such as this ensures that the university leadership is kept aware of upcoming specialized accreditations each year and is not caught by surprise. In the absence of such information, the unexpected departure of a key individual in an area scheduled to undergo reaccreditation, or lack of information on the part of key individuals in the area, could lead to disastrous results. It also enables the institutional leadership, such as the Provost,

to engage in proactive discussions with the units scheduled for accreditation visits to anticipate and address any issues. The units undergoing specialized accreditation should conduct their own gap analyses, similar to that conducted by the institution for regional accreditation, and should seek the assistance of institutional leadership or other offices when needed.

5. Establish appropriate university processes for accreditation.

The development, review, and submission of the self-study for regional accreditation is a complex, comprehensive, time-consuming activity that must be well-organized at the institutional level following the completion of the gap analysis described earlier in this paper. The development of a traditional 10-year review self-study typically spans approximately 12–18 months. The responsibility for the writing of the self study should be deliberately assigned, by standard, to individuals or units most knowledgeable about that standard. Clear timelines should be established for writing, review by multiple individuals, revisions, approval by the institutional leadership (usually signed by the President), and timely submission. It should be noted that some accrediting bodies are moving to seven-year reporting cycles that require more continuous reporting within a shorter cycle. Additionally, the Academic Quality Improvement Program (AQIP) provides a systematic process to accreditation that reflects the principles of continuous improvement (AQIP, n.d.). Self-studies for institutional accreditation include extensive documentation and, therefore, are now generally submitted electronically. An electronic format should therefore be developed for the self-study and documentation, following guidelines by the accrediting body, must be followed by all the authors of the self-study. Integrity is an important aspect of the self-study, and some accrediting bodies, such as SACS, even have a standard relating to institutional integrity. It must be made clear at

the outset, to all parties concerned, that veracity must be maintained throughout the self-study. If a gap analysis has been conducted well in advance, and weaknesses addressed, then an institution can, with integrity, claim to be in compliance with all standards and demonstrate that compliance in the self-study. The document should undergo thorough review by individuals who are familiar with the expectations of the regional accreditor.

The process for specialized accreditation is more decentralized. The self-study is developed by individuals in the unit undergoing accreditation. At large institutions, the entire operation of preparation for reaccreditation by a specialized accrediting body may be conducted at the unit level with little oversight at the institutional level. But at the outset, the institution should have clear procedures and expectations related to the development of the self-study, its review, and, if required, approval by the President or designee. The procedures could cover the following:

- Institutional process for seeking initial accreditation (i.e., this decision should be made in consultation with the Provost and/or President, not by the unit seeking accreditation alone);
- Expectations for performance of a gap analysis and the development of the self-study, including integrity and not being overly negative in the self-study merely in order to gain unrealistic resources from the institution;
- Any required institution level review of self-study prior to submission;
- The process for scheduling meetings between the Provost and/or President during the course of the site visit, if required;
- Process for responding to the site visit team's report and final report and action from the accrediting body; and
- Procedures for making accreditation findings and final actions public, whether they be positive or negative.

If the institution's history of specialized accreditation is not strong (i.e., programs have a history of being found noncompliant with several standards), it may be helpful to institute a discussion of the findings of the gap analysis between a central office, or even the Provost, and the head of the unit prior to development of the self-study. It may also be prudent to have an institution-level review of the self-study prior to submission.

Conclusion

Demand for accurate, timely, accessible, and understandable data, along with value-added information and analysis remains strong in today's higher education environment of accreditation, assessment, and reporting.   Although the need and demand for data are clear, how to best structure an institution's data offices remains less clear. There is often overlap and similarity between the functions of various offices charged with data collection, storage, analysis, and reporting, in particular, among the offices of Institutional Research, Institutional Effectiveness, and Information Management. Conversely, there is a stream of thought that the functions between these three offices are distinct and should therefore be located in separate offices.

This paper argues that there is indeed a connection between the responsibilities of IR, IE, and IM and that colleges and universities would be well-suited to recognize these connections and take steps to ensure synergy among data and information activities. The paper has outlined the main functions and activities that, if integrated, would create an effective infrastructure for all data and information needs of a college or university. The activities outlined are the essential IR, IE, and IM undertakings that would aid an institution to function effectively and meet its mission.

Addressing these activities synergistically, either by combining them under one umbrella office or by creating formal and informal links that ensure close collaboration creates an environment that positions an institution for success by assuring that important

information and performance measures do not fall through the cracks of isolated offices. For example, IM data that reveal a single important issue such as declining graduation rates could generate activities in all five foundations and across all three areas. IR could undertake an analytical study to suggest possible causes of the decline; assessment activities in the general education core and in academic programs could examine possible issues contributing to the declining graduation rate and suggest actions to reverse the trend; the issues may rise to the level of needing to be addressed in the strategic plan, and peer data could place the issue in context; and, addressing the issue may assist in meeting accreditation standards. Examining an issue through multiple lenses bringing their focused power to bear on the issue is more likely to reveal effective ways of addressing it rather than fragmented and isolated approaches. The synergy between the activities also aids university leadership by framing issues and solutions holistically so that the interconnections and implications are made explicit for them, reflecting more realistically the complex relationships inherent in academic issues.

Note: The following list of references and bibliographic resources was compiled to support this study. While many are not cited directly in this paper, they are included because the authors felt that they provide important information to facilitate a deeper understanding of the topic and support future research on the issues in this study.

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Appendix A

COMMITTEE REPORT – GAP ANALYSIS/AUDIT OF STANDARDS

for Regional Accreditation

University Level Audit

Name of Committee:

Standard #	Statement of Standard in Accreditation criteria	Compliance Status	Date	Narrative (Bullet Format- explain compliance status or lack thereof)	Ways to Improve	Documentation Cited

Appendix B

Accreditation Status Update

Programs That Are Accredited By Accrediting Organizations and Associations Recognized by the Council for Higher Education Accreditation

Selected Accrediting Organizations and Associations Participating in Council for Higher Education Accreditation (CHEA), 2011–2012	Specific Colleges, Schools, Programs, Tracks, or Other Units That Are Accredited	All Associated Degree Programs (programs, tracks, and programs or tracks within larger units that are accredited by the accrediting body)			Accreditation Status	Date of First Accreditation	Date of Most Recent Accreditation	Date Current Accreditation Expires (Month/Year, if Available)	Dates of Site Visit, if Scheduled During the 2011–2012 Year
		Names	CIP Codes	Degree Levels Old New					
(Regional and National Institutional Accrediting Organizations)									
Southern Association of Colleges and Schools (SACS)/ Commission on Colleges (COC)									
(Specialized and Professional Accrediting Organizations-CHEA Participants)									
AACSB International - The Association to Advance Collegiate Schools of Business									
Accreditation Board for Engineering and Technology, Inc. (ABET)									
Accreditation Council for Pharmacy Education (ACPE)									
Accreditation Review Commission on Education for the Physician Assistant (ARC-PA)									
Accrediting Council on Education in Journalism and Mass Communications (ACEJMC)									

(State University System of Florida, 2010)

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