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ABSTRACT

The relationship between higher education and government has been described as an ongoing series of social contracts, the expectation that higher education should provide a return to society for the public investment given. This study focused on whether state planners for higher education in five states are expecting institutions to demonstrate how they are meeting state economic needs and the extent to which such contributions were incorporated into state goals and requirements for higher education. For the analysis, the study used a model of public higher education's roles in the economic development of their states. The master plans produced by states were subjected to content analysis to examine the language used in the written goals and priorities for institutions. Areas of the master plans related to these higher education economic development roles and functions were analyzed: (1) human resource development; (2) technical assistance; (3) capacity building; (4) economic research and analysis; (5) research; (6) technology transfer; and (7) new business development. Findings show that the states articulated different aspects of economic development with varying degrees of emphasis, but all acknowledged the economic benefits that accrue to the state from the public investment in higher education. (Contains 13 figures and 46 references.) (SLD)

SOCIAL CONTRACT OR STATE REQUIREMENT?

Social Contract Or State Requirement?:

Economic Development and Higher Education

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Serving the State

Since the establishment of land-grant institutions, governments have expected institutions of higher education to serve the needs of the economy. In a careful retracing of the events leading up to one of the most important federal bills for American higher education-- the Morrill Act of 1862-- Key (1996) notes the Act was concerned with the economics of the day and not education issues. The Act was a bill designed to increase revenue for the government by providing training in the agricultural and mechanical arts-- an enterprise that employed four-fifths of the nation's population at the time (Key, 1996).

The modern model for higher education's service to the state emerged from federal support of research. The Morrill and Hatch Acts of the 19th Century brought problems from agriculture and industry into the universities to be researched. Findings were disseminated through agricultural extension programs and engineering experimentation stations. The government helped spur the economy during WWII through joint ventures between universities and industries, thereby producing many new products and services. Today, with these models in mind, the cycle has turned to how governments can have universities stimulate the economy through cooperation with industry (Newell, 1985; Duderstadt, 2000).

Social Contract

This relationship between higher education and government has been described as an ongoing series of "social contracts"-- an expectation that higher education should provide a return to society for the public investment given. Indeed, governments have had tremendous influence over the nature of this social contract and the society's relationship with institutions (Duderstadt, 2000). Governments play the lead role in determining the "public responsibilities" or "social mission" of universities, although there is always a carefully negotiated balance between that power

and the academic freedom and autonomy of institutions when determining the direction of public higher education (Neave, 2000).

In social contract theory, two independent parties with otherwise divergent interests enter into a relationship in which each makes some sacrifice to produce a common good. For science, social contract defines the rights and duties of scientists in exchange for greater societal participation in establishing the research agenda (Frodeman & Mitcham, 1999). In the research partnership between governments and higher education, governments funds university research with an expectation that, in addition to new knowledge, many benefits will accrue to society--including economic prosperity-- through a continual flow of discoveries that can be converted into new products, medicines, or services (Guston & Keniston, 1994). More generally, higher education institutions are partners with governments in the socio-economic and cultural development of entire nations (Haddad, 2000).

To many state legislators and planners, state and land grant institutions are increasingly seen as important elements in economic policy because of their potential to generate new jobs or create commercial products (Matkin, 1993). The nation is engaged in the "new economy" in which the prime resource for growth is knowledge and the ability to use information (Drucker, 1994; Barrow, 1996). With this change, higher education is seen as generating economic resources and having productive capacities in its own right. And businesses are expecting colleges and universities to emulate them by becoming more competitive-- as they have-- and also train graduates to meet their needs (Oblinger & Verville, 1998).

The public, including employers and the learners themselves, are looking to higher education to do a better job in preparing the workforce, and state leaders are placing more demands on higher education to address these concerns (Wallhaus, 1996). In the new century, the social contract will focus on educating the populace to participate in the knowledge-based economy because the

development of people is the key to economic competitiveness (Duderstadt, 2000). What remains unclear is whether states are exercising their regulatory power in the relationship to capitalize on this potential for economic development, effectively translating that potential into requirements that institutions demonstrate their contribution to economic growth to merit continued public investment.

The Study

Purpose

This study was exploratory in nature and focused on whether state planners for higher education in five states are expecting institutions to demonstrate how they are meeting state economic needs and the extent to which such contributions were incorporated into state goals and requirements for higher education. This was done through an examination of master plans issued by state boards and commissions of higher education with a focus on the types of objectives, priorities, and expectations the planners set for institutions. For this analysis, the study used a model of public higher education's roles in the economic development of their states.

With this approach, this study investigated: 1) the extent to which these state higher education executive agencies have expectations and requirements that public institutions contribute for economic development; 2) if the stated economic development goals are justified given each state's articulation of the relationship between higher education and economic development, and; 3) the potential impacts of such requirements for public financing of higher education.

Definitions

State Master Plans

Analyzing state master plans proved useful because of their significance on the direction of public institutions in their respective states. Master plans are periodically produced and reviewed by most states to set forth goals and priorities for public institutions. And state policymakers use them

in various ways to evaluate the performance of public higher education. The process of master planning is similar to long range planning and

> ...ideally involves the identification of key problems, the accumulation of accurate data...the analysis of their interrelationships, the extrapolation of future alternatives..., the assessment of probable consequences of introducing new variables, the choice of...alternatives as basic goals, a sequential plan for implementing the desired goals, and a built-in feedback system...(Berdahl, 1971).

Typically, the final documents are statements of current and future challenges in the environment and a set a series of goals or commitments for institutions to achieve.

For over 40 years, state governments have routinely set priorities and goals for their public higher education institutions through a master plan. In the 1960s, and 1970's, their focus was on planned expansion and increased access. In the 1980s, the emphasis shifted to institutional quality and equity in admissions. In the 1990s, management, performance, and cost containment were most important (Bogue, Creech, & Folger, 1993, as cited in Bogue & Aper, 2000).

There is evidence to suggest that state agencies are now considering economic development concerns in their planning. Expectations for training and relevant research are frequently addressed through new planning and restructuring efforts, some of which are driven by higher education associations and state commissions. (Barrow, 1996).

State Agencies

An inquiry of the impact of master plans should look at those of the agencies with the ability to exert significant influence on the activities of institutions. Two types of state agencies were examined in this study because of their authority for institutional management and control over budgetary appropriations. These were *governing boards* and *regulatory coordinating boards.* Governing boards are a single entity legally responsible for all management and control activities for four-year institutions in their states. Regulatory coordinating boards can approve academic programs and have influence over academic policies and in some states, significant budgetary authority. The other two

types not studied are advisory coordinating boards and planning agencies (Richardson Bracco, Callan, & Finney, 1999; McGuiness, 1997).

Scope of the Study

The current study was concerned with state planning and goals for higher education, as well as other public statements about the relationship of institutions to their states' economic competitiveness and development needs. The expectation is that the research will produce an analysis of goal and value alignment within state planning agencies. There will be no analysis of the institutions themselves, their capacity to respond, or in what manner various planning structures might affect the academic management of given institutional types. However, implications for institutions will be discussed based on the findings.

Significance

This research explored the relationship between several issues of current relevance to public institutions. State planning for higher education and economic development touches on the balance of institutional autonomy and accountability, the public benefits of higher education, the concept of social contract, and the issue of how higher education should serve the state. Knowing more about the alignment of state goals for institutional economic contributions can reveal shortcomings in the accountability debate, promote new ways for institutions to justify state investment, and open up a broader discussion of the obligations of higher education to society.

Determining the importance of economic development to state policymakers, and the extent to which they see evidence that higher education provides such broad societal benefits could have great significance in the debate over public financing. This study is a first step in that regard. A belief by policy makers that the higher education enterprise produces an insufficient "return on investment" to society might lead to under-investment in institutions. Also, the perception that

most of the benefits accrue to individuals rather than to society as a whole could lead to further reductions in funding (Bowen, 1977).

For their part, institutions are left to find the balance between seeking out funds to accomplish their missions and accepting the conditions that come with the money. A pessimistic view might be that accountability for economic development, in effect making it a state requirement, could be perceived as another encroachment on autonomy to satisfy politicians. A more optimistic outlook would be that showing evidence of economic development is an opportunity for institutions to justify the public investment they so desperately seek. Satisfying that requirement would evidence higher education's contributions to society at large and thereby make it more difficult for states to cut appropriations (Institute for Higher Education Policy, 1998).

Limitations

This study attempted to make inferences about the beliefs and intentions of state higher education planners regarding institutional capacity for economic development from the written master plans and accountability schemes. Even though this study analyzes public documents, it is difficult to get at the motives and intentions of the individual policy makers involved. A more accurate picture of individual state planners could be ascertained by interviewing those involved in the planning process. One could also study those affected at the institutional level to ascertain the implications such plans have on academic management policies and practices. Finally, this study only looked at a small sample. There are almost 40 states that have some form of master plans, although not all of them are the types of boards examined here. Perhaps future studies could examine more or all of them.

Review of Relevant Literature

Previous writings that are relevant to the issues under consideration fall into three categories. The first examines the concept of economic development as it relates to higher education. The

second discusses the recent history of the relationship between public institutions and state governments, specifically concerning the management of growth and the balance of institutional autonomy with the desire of the state for accountability. The final category in this section presents several roles by which institutions contribute to economic development that will serve as a model for the study.

Understanding Higher Education's Economic Development Contribution

Theories of economic growth and human capital suggest that there should be a positive relationship between investment in higher education and economic prosperity, including a concentration of high technology industries. Oftentimes, this impact is expressed in terms of the impact on the local economy from expenditures of students and faculty (Gittell & Sedgley, 2000). The justification of a public investment depends on the presence of substantial social benefits, rather than just private befits to individuals. Paulsen (1996) presents three types of evidence that demonstrate significant public payoffs for the expenditures made in education, including social rates of return, non-monetary benefits (externalities), and the growth in gross national product.

Currently, state governments are looking to higher education to transform low-wage economic structures into high-performance technology based economies. Enhancing workers' skills with training in technology, thereby increasing productivity, has become an expectation state leaders have of institutions (Alexander, 2000). Universities contribute to this process through many of their functions. Business and political leaders are expecting higher education to develop the skills and productivity of its workforce so that states can remain competitive. Another concern which universities can address is the innovation gap between the U.S. and other nations. Also, some seek to have more applied research done at universities with greater regard for its commercial potential (Barrow, 1996).

However, there is also evidence to suggest that state spending for support of higher education for reasons of economic development is not justified. Gittell & Sedgely (2000) found that a state's ability to attract high technology businesses within its borders can be influenced by their ability to attract high-tech workers from surrounding states. This would mean that it is not sufficient to rely only on institutions as the creating a high-tech economy. Other factors that attract business development are equally important and might require state less to invest in those areas rather than just higher education. With that understanding, it is important to closely examine the perceived social benefits of public higher education.

New ways of building local economies are also emerging. A study of three states and their political environment (Gittell & Kleiman, 2000) in relation to access and economic development suggests that the political culture and history of a state can be a determining factor in how well institutions can affect on the economy in their region. Institutions in North Carolina influenced the economy because of long-standing state policies to form partnerships between universities and businesses, research parks, and to develop training at community colleges. Meanwhile, economic development in California was primarily institution-led, while that in Texas was highly decentralized and lacked any kind of statewide planning. Thus each state's ability to link higher education with the private sector was dependent on the level of statewide coordination.

Relationship Between Higher Education And State Governments

Any discussion of government influence on public institutions must examine the recent changes in the way states have viewed higher education and approached policies regarding it. The two relevant issues for economic development concerns are 1) financing growth on limited funds and 2) autonomy v. accountability.

State Financing of Growth

State interest in public returns has piqued because the shift towards mass higher education and the limitations of public expenditures on institutions. From the postwar period up until the 1980s, higher education as an industry progressed through periods of unbridled expansion and maturity during which it could address changes in the environment with little state government intervention. Since then, the industry's growth has been tempered by growing external pressures. Parents and students questioned the economic return of increasingly expensive degrees, while public officials perceived a college degree as an individual benefit with diminishing economic returns for society. Thus, states began to increase their scrutiny of institutions while simultaneously cutting funding to them (Gumport, Iannozzi, Shaman, & Zemsky, 1997).

Part of this is due to a shift from the federal government to the states as the primary support for higher education, a trend accompanying the devolution of power from Washington to the governors and state assemblies. This has placed a considerable strain on state budgets. In such an environment, higher education can be seen as a discretionary expenditure when weighed against priorities like Medicaid, corrections, welfare, and K-12 education. Thus, although recent years have shown increases in state support, higher education was considerably under-funded in the 1980s and appropriated dollars still do not match the available tax revenues per FTE students nationwide (Lovell, 2000).

At present, governments are constantly seeking access to higher education for as many people as possible because they realize that education is an important means of increasing economic productivity and competitiveness. As enrollments in secondary education rise, increased access to higher education for all demographic groups is a priority for lawmakers. However, states are becoming hesitant about committing increased resources to institutions because of competing priorities (Alexander, 2000).

Autonomy v. Accountability

There is certainly a long-standing tradition of institutional autonomy in higher education, and the quality of our institutions is indebted to it. Still, the tremendous influx of public dollars beginning in the 1980s brought with it increased regulation and a need for compliance (Wilson, 1985). Bok (1982) discussed how federal regulations threatened institutional autonomy in the 1970s in his examination of institutions and their social responsibility. However, it is clear that federal government intervention has been needed at times to accomplish certain ends, such as ending discrimination and promoting civil rights.

State support has tended to be more supportive of the core functions of teaching, research, and maintaining enrollments. For this reason, institutions generally have closer relationships with their states. However, tensions increased as states articulated higher expectations from public institutions, including low-cost, high-quality education, increased access, and research, scholarship, and education in support of state economic needs. The twin goals of accountability and autonomy became more elusive (Wilson, 1985).

The states emerged in the 1980s as more dominant players because of increased political leadership. Governors and legislatures shaped state higher education policy more than ever before. They sought changes in the ways institutions operated and saw the state governing and coordinating boards as the means by which to do it. The emphasis turned towards connecting higher education with the states' social and economic goals (McGuiness, 1997).

However, during the 1990s, policy makers became frustrated with how slowly institutions were changing toward their desired ends. State activity focused on outcomes assessment and mechanisms that would target funding and provide incentives for institutions to change in specific ways. These accountability measures focused on performance, productivity, efficiency, and

effectiveness and implemented systems of performance-based funding and reporting (McGuiness, 1997; Cohen, 1998).

Such accountability measures represent a fundamental change in the relationship governments have with institutions because now, by linking state funds to specific outcomes, policymakers are becoming actively involved in institutional management and financial decisions. Thus, control over programs and budgets is gravitating away from colleges and universities and towards the state, which seeks greater efficiency, effectiveness, accountability, and quality (Alexander, 2000). Lawmakers also expected that state coordinating and governing boards would provide leadership as change agents. A large part of restructuring efforts at this was driven by a perceived need to reduce costs, but accountability remained high on lawmakers' agendas (McGuiness, 1997; Cohen, 1998).

However, Alexander (2000) does suggest that accountability is changing and moving towards economic outcomes, but he leaves unresolved the question of whether governments are providing financial incentives to encourage institutions to adjust their missions and practices in accordance with growing economic pressures. However, there is an implication that, given higher education's importance, "the stakes have become far too great to leave [institutions] to their own devices," (p. 427).

Economic Development Roles for Institutions

Higher education contributes to the economy in a variety of ways. Institutions produce skilled workers, transmit expertise to organizations and businesses through consultation services, create knowledge that leads to new discoveries and products, and improve the quality of life in increased community service and the attraction of business investment to a region (Paulsen, 1996).

Institutions play a number of roles that produce this contribution. Each role manifests itself through several functions institutions regularly perform. Although these functions are numerous

and somewhat disparate, many of them are related and can be grouped together to allow for an analysis of planning. Based on work by the American Association of State Colleges and Universities, (1986) and Smilor, Deitrich, & Gibson (1993), this model presents seven economic development roles performed by higher education and a number of related functions. They are:

1. ***Human Resource Development***--Providing training in programs of use to business and industry within the state and providing continuing education services. Outcomes include skilled workers, lifelong learning, and an increased tax base.

2. ***Technical Assistance***-- Helping firms apply existing knowledge, management techniques, and engineering concepts. This function helps organizations better understand existing knowledge for their use and thereby facilitates small business development.

3. ***Capacity Building***-- Helping organizations increase effectiveness by overcoming problems and developing strategies. This function provides them with knowledge of management and engineering tools and produces better leaders and community organizations.

4. ***Economic Research & Analysis***-- Providing objective economic policy information to public and private firms and thereby facilitating more effective long-term economic planning by groups.

5. ***Research***-- Creating new knowledge & discovering new products and services. There are many outcomes of research, but in general they are knowledge creation, pure research, and new technologies, products, and services.

6. ***Technology Transfer***--Licensing technology and innovations to industry. This function allows commercial access to technology for development.

7. ***New Business Development***-- Creating and supporting new firms by developing technology and innovations created within the institution. The creation of new firms creates jobs and increases the tax base.

These roles and functions were used in the analysis of these five state's master plans. Although this model represents previously identified ways in which institutions can contribute to a state's economy, it should not be assumed that every institution can fulfill all these roles and functions. Each might just focus on one or a few. Also, a state might not desire or be able to have all of its institutions collectively play all the roles. Part of the planning process might include strategic decisions about which institutions are bust suited to serve in each of the capacities.

Methodology

The purpose of this research study was to determine if the states selected for analysis are requiring or expecting that institutions perform certain economic development roles through the priorities set for them in master plans. The focus was on the language the state agencies use in articulating those goals and accountability measures. The following research questions guided the study:

- To what extent do the higher education agencies articulate that contributions to economic development are expected or required?
- Are the stated economic development goals consistent with each state's discussion of the relationship between higher education and economic development?
- What are the potential impacts of such requirements for the public financing of higher education?

This study was a qualitative analysis of the language used by state boards and commissions to describe their goals for public institutions, and attempted to make inferences about their understanding of the economic contributions made by postsecondary education. The process was unobtrusive since only written documents were collected and analyzed. The problem is well suited to a qualitative approach because of the lack of previous research on this particular topic and the need to explore these issues in more depth (Creswell, 1994). The process consisted of measuring state plans against an existing model of economic development roles and functions performed by institutions.

Sample

Several considerations went into the determination of the states that were sampled for this research. The first was the governance structure for public higher education. As discussed earlier, there are four general types of structures in existence: Consolidated Governing Boards, Regulatory

Coordinating Boards, Advisory Coordinating Boards, and Planning/Service Agencies (McGuiness, 1997). Governing board states have a single entity legally responsible for all management and control activities for four-year institutions. There are 24 such states, with 15 having a second entity for community colleges.

Regulatory coordinating boards can approve academic programs and have influence over academic policies, while advisory coordinating boards can only review and make recommendations to individual institutional governing boards regarding academic programs. Twenty-four states have these coordinating structures. Two states have planning agencies, which have no statutory authority over institutions and mostly attempt to foster dialogue among institutions over planning issues (Richardson, et al., 1999; McGuiness, 1997). For this study, states were chosen that have agencies with significant control over academic policy and budgets for all institutions. The initial pool included the nine single governing board states and the 14 regulatory coordinating board states whose agencies have significant budget authority.

A second consideration, however elementary, was whether a state agency had a master plan or not. Out of the 23 states, 18 had a document that could be considered a master or strategic plan. A third consideration was whether the planning document had a significant statement on how institutions could serve economic development needs of the state as either a goal or part of a goal statement. This left 14 states. Of these, 2 governing board states (HI & UT) and 3 regulatory board states (IL, SC, TN) were chosen.

Method

For the analysis of the state master plans, content analysis was employed to examine the language used in the written goals and priorities for institutions. Content analysis is a research method that uses language as the medium of analysis. A qualitative examination of written text or transcripts allow the researcher to draw conclusions about subjective reasoning, the public intentions

of individuals or groups, and other factors that influence behavior. Content analysis is most often used to analyze written materials, such as transcripts and archival documents. Its advantage is that it can turn a large amount of data into a more manageable representation or make qualitative data quantifiable (Smith, 2000).

One purpose for using content analysis is to draw inferences, or to look for the material's latent content. The purpose is to go beyond the 'manifest content' and draw some conclusions about the source material and its intended audience. Some researchers have insisted on restricting the definition of content analysis to the manifest content of the communication, while other scholars have held that without going beyond mere measurement there is little reason to do the analysis. Inference is necessary, they say, to serve social science by letting us learn something about society (Borg, & Gall, 1989; Thomas, 1998; Krippendorff, 1980). The study drew conclusions about the state agencies' intentions for institutions under their purview regarding economic development roles.

The Model & Coding Scheme

The seven roles by which institutions contribute to economic development were discussed earlier. The roles and functions were taken primarily from work by the American Association of State Colleges and Universities, (1986) while some of the functions were augmented using a model by Smilor, Deitrich, & Gibson (1993). The researcher chose functions that illustrated the roles from the given definitions but took care to ensure that did roles did not have overlapping functions listed for coding purposes.

Figure 1: Higher Education Economic Development Roles & Functions

ROLES (Master Codes)	FUNCTIONS	(Sub-Codes)
Human Resource Development (HRD)	Vocational Curricula to Help Industry	CURR-VOC
	New Programs & Fields	CURR-NEW
	Continuing Education	CONT ED
	Professional Development	PROF DEV
Technical Assistance (TA)	Training Firms In New Concepts	NEWTRAIN
	Small Business Development Centers	SM BUS
	Productivity/ Economic Development Centers	PROD
	Extension Programs To Industry/Society	EXT
Capacity Building (CB)	Training Organizations In Problem Solving	PRB SOLV
	Building Ongoing Partnerships with Organizations	PARTNER
Economic Research & Analysis (ERA)	Economic Data Gathering	DATA
	Industry Analysis	ANALYSIS
	Economic Strategy Development	EC STRAT
	Consultation With Public/Private Organizations	CONSULT
Research (RES)	Perform Applied Research Useful To The State	APPLY
	Centers Of Excellence/Research Units	CENTERS
	Government Ventures With Industry & University	JOINT
	Research Parks with Multiple Businesses	PARKS
Technology Transfer (TT)	Licensing Innovations For Commercial Development	LISC
	Shared Equipment /Facilities With Industry	SHARE
	Faculty Consulting to Businesses	CONSULT
New Business Development (NBD)	Start-Ups/Spin-Offs	FIRMS
	Business Incubators	INCUB

Source: AACSU (1986). The Higher Education-Economic Development Connection: Emerging Roles For Public Colleges In A Changing Economy. American Association of State Colleges and Universities.

Using a notation system outlined by Miles & Huberman (1984) for analysis during data collection, the researcher developed a list of master codes and subcodes for the seven roles and their related functions from the definitions provided in the original sources. These roles, functions, and codes are provided in Figure 1. For example, Human Resource Development is given a master code of HRD, which will be used like a prefix to denote all functions associated with it. To illustrate, one function included under HRD, Developing Vocational Curricula, is given a subcode of HRD:CURR-VOC, while Continuing Education is coded as HRD:CONT-ED.

Every coding system is comprised of three essential elements: 1) definitions of units or material to be analyzed; 2) categories or dimensions of classification; and 3) rules for applying the system (Smith, 2000; Krippendorff, 1980). How these elements were put to use is outlined below.

First, the definitions of the coding units or recording units are important because they specify the unit to which coding dimensions are applicable and thus, what is counted. In the state plans, the units are phrases that introduce a new idea or aspect of the economic development model. For example, a goal that charges institutions to change curriculum to meet vocational needs (CURR-VOC) and embrace emerging fields (CURR-NEW) was counted as two separate units because two ideas were introduced within the same goal statement.

Second, coding categories or dimensions specify the information sought by the researcher. These are the individual functions shown in Figure 1. For data analysis, references to the specific functions within goal and recommendation statements will be coded using the appropriate function subcode.

The third component of a coding scheme is rules that explain to others how to apply the coding system and how to deal with uncertain situations (Smith, 2000; Krippendorff, 1980). For the frequency counts, each separate function subcode was counted every time it appeared as a new idea. Every attempt was made to avoid over-counting coding units. Introducing a function in one section and then explaining it in more detail in the next would only count as one. But individual functions can be located in several places throughout the plan. By way of example, continuing education could be discussed under a specific economic development goal of workforce training, a goal for increasing access, or a goal for using resources more efficiently. Thus, the central concept of continuing education would be coded for each of those instances.

Two parts of the state master plans were coded using these guidelines and the instrument in Appendix A. The first were the statements written about the relationship between institutions and

economic development, why economic development is important, or how it occurs via higher education. These were treated as the "value statement" on economic development. Any statement that justifies the plan or recommendations or gives a reason for their inclusion was used in this analysis. Regarding the statements, frequency counts were maintained for mentions of the specific roles and functions.

The second part of the plans to be coded was the goals, priorities, and recommendations stated in the agency plan. This coding was done in accordance with the economic development model's roles and functions for institutions (see App. A), and with the general guidelines for coding systems. In addition to frequency counts, statements were coded for the *emphasis* placed on the economic development functions. Emphasis was coded as Little/None, Encouraged (if the goal is not specific or is simply stated with no associated tasks or purposes), Recorded, Not Used (if the state monitors this activity), or Expressly Required (specific tasks and purposes clearly identified).

Data Analysis

Frequency counts were tallied for *Emphasis*. Comparisons of these results were made with the frequency counts for the value statements to obtain descriptive information about what roles are seen as important to states and which are written into planning expectations. This analysis also shows the relative number of appearances for each, and what roles are not discussed by individual states. Results were compared by the governance structure of the states. The level of alignment between value and goal statements was used to examine the level of justification that exists for the stated goals. There is the possibility that goals may be set forth with no stated justification or understanding of economic development, or that economic development is valued but not made a goal by a particular state. Such findings would indicate a lack of congruence between stated values and goal formation.

Results

Value Statements

Figure 2: Aggregate Totals for Value Statements

Role	Appearances
Human Resource Development	25
Technical Assistance	11
Capacity Building	5
Economic Research & Analysis	0
Research	5
Technology Transfer	1
New Business Development	0

As discussed earlier, the value statements are the discussions of the relationship between higher education and economic development, and may also include justifications for the goals and recommendations chosen. The total appearances for the economic development roles in the value statements are summarized in Figure 2. Far and away, states talk about economic development in terms of Human Resource Development (HRD) much more than the other roles. In fact, the appearances for HRD are more than the other six roles combined. Technical Assistance (TA) is second with 11 appearances, while Capacity Building (CB) and Research (RES) each are mentioned five times across all the states.

Figure 3 presents the appearances for economic development roles broken down by the individual states. Human Resource Development is either at the top or included in the group of roles that receive the most discussion in all states. After that, the roles that generally receive the most attention by states are Technical Assistance (TA) and Research (RES). TA has the highest count in Utah and is second most frequently discussed role in three of the other four states. Following that is Research, mentioned by two states, and Capacity Building (CB), discussed by just one state.

Figure 3: Value Statements Re: Economic Contributions of Higher Education

State	Roles Stressed	Frequency	Not Discussed
UT	HRD & TA RES & TT	4 1	CB, ERA, & NBD
HI	HRD & RES TA	4 2	CB, ERA, TT, NBD
IL	HRD TA	4 1	CB, ERA, RES, TT, NBD
TN	HRD CB TA	11 5 3	ERA, RES, TT, NBD
SC	HRD TA	2 1	CB, ERA, RES, TT, NBD

Key: HRD, Human Resource Development; TA, Technical Assistance; CB, Capacity Building; ERA, Economic Research & Analysis; RES, Research; TT, Technology Transfer; NBD, New Business Development

The roles that are not discussed are also shown. No state discusses all the roles in their value statement; the most is Utah with four. Two roles-- Economic Research & Analysis (ERA) and New Business Development (NBD)-- received no attention at all from the five states, while Capacity Building (CB) and Technology Transfer (TT) was discussed by one state each. In general, the states appear either unable to articulate the importance of these roles to the economic development of their states or do not consider them something that can be accomplished through planning. The reason for both of these circumstances could be that HRD, RES, and TA cover the familiar triumvirate of teaching, research, and service; roles which most states already understand.

Goal Statements

The goal statements are the specific recommendations, actions, or tasks set forth for higher education by the state agency. Figure 4 presents the aggregate counts for the economic development roles in decreasing order of importance (based on counts). Again, HRD is present in the most goals, with its counts equaling the combined appearances of the others. There is again a large gap between HRD and the frequencies for the other roles. Note also the small totals for ERA,

TT, and NBD. Based on this information, these roles with which states are not as familiar receive little attention in the planning process.

Figure 4: Aggregate Totals for Goal Statements

Role	Appearances
Human Resource Development	43
Technical Assistance	15
Research	12
Capacity Building	9
Economic Research & Analysis	3
Technology Transfer	2
New Business Development	2

Figure 5 summarizes the frequency totals for the goal statements broken down for the five states and is presented in the same order as the aggregate totals. Several things should be observed. Only one state, Illinois, discusses all seven roles for economic development, while South Carolina mentions only 2 roles in its master plan. The others discuss at least five.

Figure 5: Economic Development Roles Emphasized by States

	UT	HI	IL	TN	SC
Role					
Human Resource Development	6	10	17	4	6
Technical Assistance	1	7	5	2	
Research	3	4	2	2	2
Capacity Building	1	5	1	2	
Economic Research & Analysis		1	1	1	
Technology Transfer	1		1		
New Business Development	1		1		

Also interesting is the similarity in what the states emphasize the most. As might be expected, Human Resource Development is emphasized more than any other economic development role in all five states. While it is not surprising that HRD is most important role, since education is the primary mission of institutions, what is of interest is by how much it overshadows

all other issues. For example, in Illinois, HRD functions were mentioned 17 times, while the next closest role is TA, discussed five times. While not as large, Utah and also shows a gap in the relative emphasis between HRD and the next most discussed role.

Technical Assistance (TA) and Research (RES) are included in the top three for all states except South Carolina, which does not discuss TA. Conversely, most states give short shrift to Technology Transfer (TT), New Business Development (NBD) and, to some extent, Economic Research & Analysis (ERA). TT and NBD are not discussed at all by three of the states and are each mentioned only once as a goal by the other two. Capacity Building functions were seen as relatively important by HI and TN, while Economic Research & Analysis was mentioned only once by three states and not discussed at all by the others.

Roles & Functions

The roles and functions are discussed in descending order of their emphasis by the five state agencies collectively.

Human Resource Development (HRD). As discussed above, HRD was the most emphasized aspect of economic development by state agencies; it was emphasized a total of 43 times by the five state plans. The function discussed most often (19) was adapting curricula to meet vocational/industry needs (see Figure 6). The other three functions were mentioned eight times. These were the creation of new programs for emerging fields, continuing education, and professional development. It makes intuitive sense that these training functions are the top concerns of state agencies for their institutions given the emphasis on workforce preparation in the literature and in the state plans.

HRD as a whole also had the most required goals, with 33 of the 43 items being required. All four functions have high percentages of their goals required, with continuing education and professional development having the highest percentages. Except for New Fields, the plans require

their goals over 70% of the time. Again, given the tight relationship of these functions to institutional missions, and the current push for quality education, these percentages should not be surprising.

Figure 6: Human Resource Development (frequencies by function)

Function	Voc./Industry Curricula	New Fields & Programs	Continuing Education	Professional Development
Totals	19	8	8	8
Required	14	5	7	7
% Required	74%	63%	88%	88%

Technical Assistance (TA). Technical Assistance appears as the next most important on the mind of state agencies; it was highlighted 15 times (see Fig. 7). Of these, the extension function garners the most attention (9). Extension programs are generally what state planners define as public service to the region. Training firms in the application of new concepts was discussed in five instances. A Productivity Center was mentioned just once, and no state discussed having special assistance provided for small businesses. Also, TA seems to be something states encourage rather than require, with only around half of the recommended actions being directives.

Figure 7: Technical Assistance (frequencies by function)

Function	Training in New Concepts	Small Business Development	Productivity Centers	Extension Programs
Totals	5	0	1	9
Required	3	0	0	4
% Required	60%	--	--	44%

Research (RES). Given that most of the public institutions are universities, it was surprising that Research was only stressed 12 times, especially considering that when states talked about the economic benefits of higher education in their value statements, research was often given prominence. Applied research that is useful to the state is the function most desired here (9). Institutional partnerships with government and industry through centers of excellence or joint research ventures were given scant attention, while the formation of research parks was not

discussed at all by any of the states. Regarding requirements, the only meaningful number is that applied research was made a requirement two-thirds of the times it was discussed.

Figure 8: Research (frequencies by function)

Function	Applied Research	Centers of Excellence	Joint Ventures	Research Parks
Totals	9	1	2	0
Required	6	0	1	0
% Required	67%	--	50%	--

Capacity Building (CB). Having institutions work with local industries to expand their economic capacity was stressed by these states nine times (see Fig. 9). The goals are about evenly split between engaging in individual training programs with businesses and the formation of ongoing partnerships. The actions that are recommended are stated as requirements most of the time.

Figure 9: Capacity Building (frequencies by function)

Function	Problem Solving	Building Partnerships
Totals	4	5
Required	3	3
% Required	75%	60%

Figure 10: Economic Research & Analysis (frequencies by function)

Function	Economic Data Collection	Industry Analysis	Economic Strategy	Consultation (ongoing)
Totals	0	1	0	2
Required	0	0	0	1
% Required	--	--	--	50%

Economic Research & Analysis (ERA). This is one of the economic development roles that received little attention by these states (Fig. 10). Only one state asked its institutions to perform an industry analysis, while just two states discussed having institutions consult with organizations on economic issues. The functions of collecting economic data or helping businesses in the formation

of economic strategy were not discussed at all. It would seem that institutions' capacity to help local businesses and organizations adapt to economic changes is an under appreciated role.

Technology Transfer (TT). The licensing of innovations for commercial development is either not well understood or, perhaps, states are avoiding direct intervention in this arena and letting markets work. Licensing technology was mentioned only twice and does not receive much emphasis from those states. The institutions' capacities to share equipment and have faculty consult in industry product development labs are not discussed at all.

Figure 11: Technology Transfer (frequencies by function)

Function	Licensing Technology	Sharing Equipment	Faculty Consultation
Totals	2	0	0
Required	0	0	0
% Required	--	--	--

New Business Development (NBD). Related to the lack of emphasis on Tech Transfer is the dearth of attention paid to the ability of institutions to create new businesses, and thereby, jobs (see Fig. 12). Two state discuss having universities engage in more activity to to develop new firms, but do not make it a requirement. Since this is still an evolving trend (Van der Werf & Blumenstyk, 2001), it is possible this pattern might change in the future.

Figure 12: New Business Development (frequencies by function)

Function	Entrepreneurial Activity	Business Incubators
Totals	2	0
Required	0	0
% Required	--	--

Emphasis on Economic Development Roles in Value & Goal Statements

This section focuses on the relative importance states gave to the economic development roles in their master plans and accountability criteria. Since Human Resource Development, Technical Assistance, and Research had the highest frequency counts across all states, they merit

attention here. The other roles will be discussed together. A summary of the roles discussed in value and goal statements for these states is presented in Figure 13.

Figure 13: Comparison of Economic Development Roles Emphasized (frequencies)

	UT		HI		IL		TN		SC	
Role	*Value*	*Goal*	*Value*	*Goal*	*Value*	*Goal*	*Value*	*Goal*	*Value*	*Goal*
Human Resource Development	4	6	4	10	4	17	11	4	2	6
Technical Assistance	4	1	2	7	1	5	3	2	1	
Research	1	3	4	4		2		2		2
Capacity Building				5		1	5	2		
Economic Research & Analysis				1		1		1		
Technology Transfer	1	1				1				
New Business Development		1				1				

Human Resource Development (HRD)

In both their value and goals statements, every state placed the most emphasis on the human resource development potential of higher education. Indeed, in their plans, many states highlighted how HRD raises the skill level of the workforce, helps to attract businesses, and increases tax revenues. And given the educational mission of institutions, it is safe to presume this is a role that states firmly believe in. Even a state that doesn't spend a great deal of time articulating the importance of their institutions for economic development, like South Carolina, highlights this important function. Thus, for this role, these states appear to be consistent in their beliefs and what they ask of institutions.

Technical Assistance (TA)

Functions for Technical Assistance were also included in every state's value statement, although South Carolina did not have a related goal statement. In terms of relative importance

within states, two states (IL, TN) gave TA the same amount of emphasis in both parts of the master plan. Utah did not give it as much weight in the goals as the value statement would indicate, while the reverse was true with Hawaii.

Research (RES)

Utah placed more emphasis on Research in their goals than in their value statement, while Hawaii did the opposite. Three states did not give any mention to Research in their value statements but still included some discussion of it in their goals. The reason for this inconsistency is not known. It would seem that states agencies would want to give some justification for placing an emphasis on research, especially since applied research that would benefit the state was the most common goal. Research is often discussed in terms of increasing funding; Illinois does give it some attention when discussing relationships with businesses.

Remaining Roles. For the other roles, there does not appear to be any discernable trend among the states between their value statements and the roles they emphasize in their goals. Four states had goals that touched on Capacity Building, although only one discusses it in their value statements. Three states had goal statements for Economic Research & Analysis, although none mentioned it in their value statements. Finally, only two states had goals regarding Technology Transfer (TT) and New Business Development, and only Utah gave any weight to TT in its value statement. Three states did not discuss these two roles in either place.

Discussion & Conclusions

This exploratory analysis has shown that, although these states may stress the economic development roles in their planning and goal setting, state agencies appear to be focusing institutional actions primarily around the functions with which they are most familiar: teaching, service, and research. This is seen in the emphasis on the workforce development functions in

Human Resource Development like altering and amending the curriculum to meet business needs and offering more opportunities for professional development. Such results are consistent with previous trends (Rodriguez, 1992). When research is incorporated into the state plans, it is mostly for applied research geared towards helping industry. And service is typically defined as sharing new concepts and ideas with industry. These types of activities are ones that resonate with policymakers and it makes intuitive sense that they are given the most emphasis.

Consequently, roles that receive a lot of attention in economic development literature like Technology Transfer and New Business Development are not yet a part of the planning process. Perhaps these are areas that policymakers do not understand as well as higher education's traditional functions. It could also be that they simply don't view these as areas in which state intervention is warranted or perhaps, it's just that effective ways of measuring higher education's contribution have yet to be developed. Other functions like Capacity Building and Economic Research & Analysis also appear to be ones for which these state planners are either unwilling or unable to articulate specific tasks for institutions. While institutions might react favorably to this lack of oversight, they must also consider whether state officials are properly rewarding them for the positive outcomes generated from these activities.

Requirements & Expectations for Economic Development

As has been shown, these states articulate different aspects of economic development with varying degrees of emphasis, but all acknowledge the economic benefits that accrue to the state from the public investment in higher education. The state boards and commissions also vary in the extent to which they articulate tangible goals for institutions to accomplish in order to serve the state's economic needs.

It appears that there is an attempt to direct greater institutional activity toward economic development activity, but this study cannot make the determination that these states are requiring

that institutions be accountable for specific results from this activity. Those that understand the full range of economic capacities that institutions possess state them explicitly more often and provide concrete objectives for institutions to accomplish. There is no direct link, however, between the justification of economic development roles and their translation into specific objectives.

In determining the nature of state- institution relationships, we need a different understanding of what it means to have something "required." Based on this analysis, it would appear that a broader discussion of state requirements and accountability for economic development is in order. State higher education boards identify their planning context or environment as one in which the economic development of the state is a process in which higher education is an integral part. But what does that mean for their ongoing relationship?

Rather than having specific goals and targets required for continued state support, a more accurate way of stating it might be that master plans typically use that language to "charge" an institution with the responsibility of accomplishing a task or meeting a specified goal. Since these states are attempting to articulate a vision and purpose for higher education's role in economic development through specific tasks for them to accomplish, but are not making the completion of those tasks a direct condition of continued state support, there must be another motive for these planning efforts.

To this end, it is possible that the language and theory of social contract may no longer be appropriate. Regarding scientific research, it has been suggested that the language should focus on serving the "common good," rather than operating under some contractual relationship with specific, mutual obligations. In this circumstance, higher education strives not only to do its work with integrity, but also returns many benefits that are difficult to quantify in terms of economic impact. These include adding to the store of knowledge, helping individuals form positive bonds with the community, and altering the view humans have of their relationship with the world.

Politics has a tendency to be reductive and ignore such benefits which higher education values (Frodeman & Mitcham, 2000).

States are attempting to have a dialogue with their institutions about public expectations and public benefits, and they desire to have institutions fulfill those roles and provide service to the state. I theorize that these state agencies are seeking to make the broad and varied institutional roles for economic development part of the "new social contract" for higher education. By laying out these purposes and stating a vision, these boards and commissions seek to influence the missions of institutions and update the concept of "service to the state." Given this circumstance, perhaps it would be more useful to call this relationship the "Social Charter." This language is now being by the National Center for Postsecondary Improvement (NCPI, 2001) in its research on the future of postsecondary education. This language takes into account the effects of political and economic forces in this period of prevailing market forces.

Governance Structure

There does not seem to be any appreciable difference by governance structure and the general authority of the five state agencies regarding public institutions in their states. Governing boards did not appear to make the importance of economic development functions more or less explicit in their value statements than the states with regulatory coordinating boards. Also, based on this small sample, there is no discernible pattern of governing boards making more of their planning goals requirements when compared to the coordinating board states.

Perhaps this suggests that the focus should be on factors like the political climate of the state for higher education (Gittell & Kleiman, 2000) or on the specific function that the state agency assumes. Richardson, et al. (1999) describe four possible environments for the governing body in a state. The agency can provide resources and support, it can be a regulating body involved in management, it can be a consumer advocate and welcome market forces into the relationship, or it

can assume a steering function in which it coordinates the market to produce outcomes in accordance with state policies. Clearly, institutions should be fully aware of the type of authority their governing agency has when negotiating goals and requirements for economic development. And agencies need to respect the limits of their authority.

Implications for Institutions

It is clear that market forces and constrained state budgets will force institutions to make internal changes, but findings such as these corroborate the assertions of other observers of higher education that institutions must become more proactive in making their positive attributes known. Neave (2000) posits that three complementary actions of governments are acting collectively to make higher education more responsible to society. Making institutions more subject to market forces (privatization), freeing them from excessive bureaucratic oversight (deregulation), and making them more responsive to state needs (accountability) are all shifting the responsibility for the prosperity of higher education onto the institutions themselves. They must develop their own methods for meeting obligations to their stakeholders, including the state. Institutions must be more engaged in the society in which they exist by increasing their awareness of how their own continued survival depends on their close relationship with the state and the community.

Still, despite this utilitarian view of higher education in which economic values are supreme, states are not becoming directly involved in academic management or providing excessive regulations. Institutions are, however, expected to compete for funding based on the standards and performance criteria set by the state. Institutions that are unable to demonstrate this value in economic terms will attract fewer resources and will find it difficult to meet the new demands. (Alexander, 2000).

Literature on institutional relationships with the state suggests that political leadership is important and can even make institutions change their practices. Bealing & Riordan (1996) posit

that "institutional theory" suggests that academic managers will consciously attempt to maintain public support through restructuring and self-improvement, thereby behaving in ways to preserve their legitimacy in the eyes of those who control the purse strings. Such institutions can be described as entrepreneurs because of their ability and willingness to compete for and attract these funds, even with strings attached.

This change holds significant challenges and opportunities for institutions as well. The opportunities are that institutions can further justify their public investment and better their perception among their state's residents. By meeting these challenges and providing evidence of success, institutions will be able to attract the resources they needs to accomplish the other aspects of their missions.

Institutions need to become more involved in assessing and promoting their contributions to the civic life of their communities. Unless higher education can introduce these contributions into the accountability movement, policy makers will continue to define "results" as those things that are easily quantifiable. Many of the ways in which institutions serve the public interest will be excluded by utilitarian measures (Wellman, 1999). Other factors, such as institutional autonomy and academic freedom, as well as the inability of the agency to facilitate these activities from their vantage point, might account for the fact that institutions are at least given discretion on how to approach the specifics and define success for these goals.

Challenges to institutions include the continued threats to autonomy as institutions restructure to engage in more entrepreneurial endeavors. Government partnerships with industry and academia for economic development have the potential to carry institutions into areas that could prove problematic. Recent work on university restructuring (Gumport & Pusser, 1999) and entrepreneurial behavior (Clark, 1998) suggest that institutions will find many traditions challenged

as they strive to become more self-sustaining. Such situations could threaten university values, but if handled correctly, they need not lead to a lack of public confidence (Matkin, 1993).

Also, there may be a time in the next decade when one state exhibits a stronger desire or produces a better methodology to measure performance in these roles. Currently, because most goals are stated in non-specific terms (they are usually not quantifiable), there can be no tie to accountability. In the future, functions like extension, technology transfer, and other partnerships with industry may be judged by the number of jobs they create or industries they attract. But, in the meantime, universities will have difficulty producing reliable numbers, thus causing the problem of having little data to present when seeking support for new appropriations (Matkin, 1993).

With better measurements, these roles might become more of a state requirement for continued funding as opposed to a socially chartered function. Also, there is the possibility that missions would become less institution-driven and more state government driven. Institutions would indeed perceive this as outside intervention. Should this prove to be the case, it raises the question of whether institutions can strike the balance between competing demands. Their entrepreneurial capacity will be tested by their need to attract public confidence that they are truly performing service to the state. Yet, can the evaluation of an institution's debt to society turn only on these macroeconomic issues?

There are many other benefits of higher education, such as the externalities that the Institute for Higher Education Policy (1998) and Wellman (1999) classified as public and private social benefits, which do not lend themselves to quantification or measurement for policy purposes. Despite their needs for state support, institutions must continue to assert their unique capacity to contribute to other aspects of our society for which the state is neither the primary arbiter nor beneficiary.

Implications for States

Policy makers need to facilitate a constructive, working relationship even if they do not view this economic partnership as immediately beneficial as the war effort or the agricultural model had been. Given the limited resources available to states, the relationship must be one of interdependence, where the needs of industry seeking profitable ventures are balanced with those of institutions who seek to advance knowledge (Newell, 1985). Institutions have already been balancing the desire for institutional prestige with the need to attract funds for some time (Florida & Cohen, 1999).

States agencies should also be aware of the political context for higher education within their state. Understanding the quality of relations between the governor, state assembly, the public, and the state's institutions is crucial to establishing a structure that provides results beneficial and acceptable to all concerned (Gittell & Kleiman, 2000). The relationship of governments in economic development policy is progressing towards one of partnership between itself, academia, and industry.

For state policy, the key would seem to be flexibility in policy development. Rigid approaches to economic development could lock the state or its institutions into the support of industries with short market lives. And states must be wary of over spending and duplicating programs and industries in adjacent regions or states. State involvement can take several approaches, including promoting innovation, providing capital for new businesses, helping firms to stay current with technology, stimulating exports, and supporting training (Hines, 1988).

Adequacy of the Model and Implications for Research

In general, the model used for this analysis captures many of the concepts states emphasize when discussing the importance of economic development and the goals they set for institutions. However, there were other functions that the states mentioned in their value and goals statements as

also serving economic development purposes. These can be summarized into two roles that could be added to the original model to make it more useful for evaluating state planning in higher education in future research.

The first is *access.* Every state plan, including others not examined here, talks about the importance of access for all students, especially low-income students and minorities. This is most often done in the context of workforce development and the desire to have an educated citizenry, or with the understanding that individuals will be left behind in the emerging economy if they are not sufficiently educated. Although access could be discussed within the role of human resource development, it has enough of its own related functions that it could be made its own category. These functions include tuition restraint, financial aid, and public financing for affordability. It would also reference distance education and the role of technology in making higher education available to underserved populations.

A second role that could be added to the model is *mission differentiation.* Often, this is introduced in a discussion of statewide restructuring of institutions so as to avoid mission duplication or overlap. Many state plans attempt to set out what each institution's mission should be. The concept of "selective excellence," a coordination philosophy which holds that a state should reduce costs and duplication by having institutions distinguish themselves in programs of particular strength or those that have high student demand (Barrow, 1996), is often discussed as a way to approach restructuring.

In closing, Florida & Cohen (1999) concluded that although universities are most certainly involved in the new knowledge-based economy, their activities couldn't be construed as a "direct engine of economic development." Rather, they play a more critical role as "an enabling infrastructure for technological and economic development (p. 590)." Other factors, including

having sufficient numbers of trained people in high-tech fields distributed throughout the local economy to use the knowledge, must be in place, however.

Such factors point to the need for aspects of economic development other than just those used here. The focus should also be on goals like providing increased access to higher education, offering programs that benefit industry, and better coordination of state needs with institutional resources. Based on current methods of state planning, higher education's obligations to the state are not yet settled, and governments have not discovered a way to require institutions to undertake economic development activities in a way that respects institutional autonomy and academic freedom. Given these circumstances, it would seem that state governments and institutions need to forge a closer partnership and provide a working model for economic development that is equally beneficial to state policy makers, the institutions, and the publics they serve.

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