



Outcomes, Outreach, and the World Wide Web: New Roles for the University

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Universities traditionally have been noted as primary sources for the basic scientific discoveries that lead at some point to dramatic improvements in technology. Less well appreciated is the fact that many of the principles of business transformation, productivity improvement, and human resource management also had their roots in universities. Ideas like Total Quality Management (TQM), re-engineering, and statistical process control essentially draw on two key veins of academic understanding: the scientific method with its emphasis on experiments and measuring, and systems thinking with its focus on identifying feedback mechanisms that can potentially lead to unexpected results and relationships. The key innovation in business-transformation efforts such as TQM lies in the idea that everybody in the organization can and should be trained to think and work more like scientists than like automatons.

While the principles of science and systems thinking have had a dramatic effect on business organizations, they have been less evident in the area of community development. This has been the case for a number of reasons, including:

- Measuring community inputs and activities is a task of gargantuan proportions, involving data collection far beyond current capabilities and/or practices.
- Predicting the course of community development is an even more enormous task, involving simultaneous analysis of millions of variables.
- The product of an average community's development efforts is often multifaceted, supporting the achievement of a number of goals at one time. Strong school arts programs are often credited with improving basic reading and math capabilities.

• The product cycle of even the most focused community development efforts is a multi-year one, making it difficult to establish credible links between specific community-development activities and actual outcomes. Superintendents of schools, for example, often must explain to business leaders that while the average plant manager oversees a product cycle that runs from two minutes to a maximum of two to three months, school superintendents manage a product cycle of twelve or more years.

Two Change Movements

Despite the difficulties of engaging in business-like community development, some local communities and governments have undertaken development tasks with gusto. In recent years, these efforts have become much more focused as a result of two movements: *community collaboration* and *results accountability* (O'Looney 1996). First, state and local governments and major foundations have consciously established or supported the establishment of community collaboratives for improving family and community well-being. The theory was that these collaborative partnerships among public agencies, churches, businesses, schools, and consumers could marshal their respective skills and resources, eliminate duplicate efforts, and engage in service-integration activities that would enhance their productivity. Left to their own devices, such community collaboratives would initiate 1,000 natural experiments in community development from which everyone could learn.

Recently, the collaboration/service-integration movement has begun to merge with a broader administrative and budgetary reform movement known, variously, as *results accountability*, *outcome-based budgeting*, or *budgeting for results*. This combination of reform strategies outlines a vision in which each local community's service-delivery partnership or collaborative is held accountable for improving the lives of children and families in that community.

Although results accountability is a broad reform strategy that can affect the operations of nearly all government departments, it represents a particularly revolutionary funding strategy for governmental human services. Two key elements of human-services funding are abandoned in results accountability:

- The problem- and client-specific funding streams, which require hundreds of separate categories within areas (e.g. mental health, physical health, child abuse, training, and so on), and
- Funding based on degree of problem severity, which can eliminate funding when a problem is solved, or award funds for nonexistent problems.

Implementing results accountability would change both these features of the current system. The details of a results-accountability

system for human services likely will vary from state to state. In some states, communities might receive a certain level of funding based on their stabilizing the current situation (i.e., prevent it from becoming worse), but receive increases only if they can show improvements to their current condition. In other states, even current levels of funds might be based on the effectiveness of a community improvement effort.

Moving toward a full-blown system of results accountability is dependent on three key factors: 1) effective community collaboratives; 2) federal block grants for social services, employment, and education programs; and 3) accurate and reliable social-indicator data. However, even if federal block grants do not allow communities to tailor funding streams to reflect priority problems, some initial experiences in places like Oregon suggest that much still can be accomplished within current fiscal-management constraints. Using a collaborative strategy, for example, one community was able to reduce teen pregnancy by more than fifty percent in a three-year period.

While each of these movements — *community collaboration* and *results accountability* — has its own momentum and philosophy, the merging of the two movements is thought to be a particularly

powerful reform effort, but also an unproven one. Essentially this merger calls for the establishment of *joint accountability* for community well-being. It is true that the idea of joint accountability is not new to administrative sciences; stockholders and workers share joint accountability for the productivity of a firm. However, what is new in this reform effort is an attempt to establish joint accountability among a loosely knit group of independent agencies and organizations, many of which have their own separate mandates, governing boards, and specialized missions.

What makes joint accountability particularly difficult is the need for agencies and organizations to identify specific problem areas that will be the focus of improvement efforts. Without understanding the rationale for this step the process of

choosing a few specific goals from hundreds of possible opportunities "to do good" may undermine the solidarity of the collaborative. A deterioration in solidarity would occur because

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some agencies' missions would be supported or favored more than others' in the process of establishing a strategic focus.

Historically, community inter-agency service groups have avoided these difficult and potentially disruptive decisions.

Avoiding such decisions has helped maintain inter-organizational peace, but it also makes it virtually impossible to establish any type of joint accountability for community well-being.

Joint Results Accountability: A Data-Dependent Reform

Establishing joint accountability is difficult to implement for two primary reasons. First, it is dependent on creating effective collaboration among diverse agencies. Second, it demands a level of information access and data reliability that many states have not yet established. University outreach programs traditionally have played an important role in both areas. University faculty from a variety of schools of liberal arts, social work, education, family and consumer sciences, and outreach institutes help communities to organize and maintain effective collaborative groups. University faculty also have been active in developing and communicating useful and reliable data; traditionally, they have been the information providers of choice to communities conducting needs assessments and have been active practitioners of the state of the art in program evaluation.

Unfortunately, like categorical human-service organizations, university faculty and outreach programs often are organized around academic disciplines rather than around the holistic needs of communities. As such, the programs are unprepared to assist communities in becoming jointly accountable for broadly defined community outcomes. This is especially the case because social-indicator data (e.g., rates for school failure and dropouts, teen pregnancy and juvenile delinquency) on which outcome goals are based typically are too detached from specific programs to apply the kind of experimental designs and classic program-evaluation methodologies in which individual academic disciplines excel. The long gestation period for the kind of problems reflected in social indicator data and the multiple origins of such problems make it extremely difficult to identify effective programs.¹

While university outreach likely will be an important player in the movement toward collaborative accountability for community development, there is reason to believe that universities may have to develop new strategies and use new tools if they are to remain in the forefront of this important social-change effort. This essay outlines ways in which universities and university systems can build on their particular expertise and develop new expertise to further this important administrative reform. In particular, it suggests that universities begin to consider:

- Interdisciplinary linking of data collection, analysis, and distribution for use by community collaborative groups.

- Building on subject-area expertise, data-processing skill, and the knowledge of the World Wide Web to build applications to support and enhance human-service practice, community collaboration, service integration, and results accountability.

Data Collection & Analysis: Except at a state level on occasions when census data drive federal funding formulas, most states and localities have not been particularly concerned with collecting extremely accurate social-indicator data. As a consequence, most states have muddled through using rough estimates of the scope of particular problems. For example, estimates of delinquency and teen pregnancy rates usually have been sufficiently accurate to indicate to community leaders when it was time to attend to a social issue — typically, that County X was first, second, or third in the state on a particular indicator.

Although rough estimates might be accurate enough to suggest relative position among community rankings, much more accurate estimates of social-indicator data are needed to implement results-based accountability, especially when funding might be tied to effecting change in a particular set of indicators over a relatively short period of time. Just as the states consistently sue the U.S. Census Bureau when they believe the census count is inaccurate, so too, it is likely localities will sue the state office responsible for data collection if states move to a results-based budgeting mechanism without first putting in place a good data-collection system. Because states differ with respect to their ability to collect accurate social-indicator data, there is reason to suspect some states may have difficulty implementing results-based budgeting for community human services and development.² As is explained below, this can be crucial.

Key component problem: In assessing how well a community is doing, the most meaningful data is not the literal number of problem incidents (e.g., dropouts), but rather the rate of problems per population unit. Hence, in a result- accountability process, a community would typically plan to reduce, for example, the rate of teen pregnancy rather than the number of new teen pregnancies. As everyone knows, counts occur every ten years. For the years following the most current census, *estimates* of the population for the actual current period, and *project* future populations ten to fifteen years hence. Real-time social- indicator rates typically are based on population estimates.

The administrative focus for the agency responsible for official population estimates and projections (e.g., the Office of Planning and Budget in Georgia) is often on establishing broad, state-level total population projections rather than on more detailed and more accuracy-demanding county-level estimates. This has been the case for a couple of reasons: *First*, these agencies can fulfill their key functions related to revenue estimation, strategic development, and transportation planning simply by producing broad total-population

projections. *Second*, making detailed county-level estimates of sub-populations (e.g., of the number of boys between 14-21 years of age) demands substantial effort, methodological skill, and the ability to cull and integrate information about county-specific developments that often is not captured in U.S. Census Bureau estimates.

Historically, there has been little call for budgeting departments to invest in the more detailed and accurate population estimations.³ However, without such an investment by some agency, results accountability is likely to fail. For example, results accountability is based on community groups receiving clear messages, year by year, as to how they are doing with respect to meeting their goals for children and families. Imagine a community discovering that it has a teen pregnancy problem. First, the local interagency partnership uses this data in making its decision to address the problem. Then the interagency collaborative establishes what it believes to be a coherent strategy for addressing this problem. Two years after the community implements this strategy, it looks at the teen pregnancy rate and discovers it has increased dramatically. According to a results-accountability process, it now diverts funds from this failed strategy and attempts to craft a more successful one. A couple of years later, the community discovers it has actually experienced a dramatic increase in total population and a particularly significant increase in girls between the ages of 13 and 18. Although some of the former increase had been predicted by the agency that estimated population, the specific increase in a sex-age cohort is typically not included in population-estimation model used on a regular basis. When the real numbers are discovered, the leaders of the service collaborative realize they had abandoned a highly effective strategy and put in place a less effective one. The damage to children and families and the loss of the investment in program skills and motivation that accompanied the change in strategy may not be repaired. As this scenario illustrates, results accountability, like total quality improvement, is fundamentally based on the accuracy of the data on which the community makes its decisions.

Coordination and Distribution Issues: Because of the problematic nature of some official state sources of population data, agencies and groups sometimes will resort to purchasing or producing their own population estimates. Also, within the university community, sources often will compete to provide the same information. For example, at one Southeastern university, three service units created separate data bases of census-type information for use in various publications and computer platforms. The lack of coordination and duplication of effort caused the university to become inefficient in providing additional service to the residents of that state.

Opportunities for University/University System Outreach

The remainder of this essay is based on the following premise: For states to implement a community-development and results-accountability reform strategy, they need a coordinated strategy for

producing, distributing to key stakeholders, and facilitating the use of social indicator and other data in community settings. Universities have a unique and important role to play in this effort; this role will be shaped by new communication technologies, particularly the Internet. Whether universities organize to meet the knowledge production, distribution, and facilitation challenges related to community-development and public-administration reform, their role in the organization and use of knowledge will nevertheless be altered dramatically by the growth of cyberspace.

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Production of accurate social indicator data: Producing population estimates that are accurate for sub-populations at the county (and perhaps even sub-county) level demands a mixture of two elements:

1) High-level model and computational skills and grass-roots-level information about developments in specific communities. The University/University system service branch is strategically positioned to perform both these roles. Population modeling and computational skills can be found in a variety of departments. One can imagine the establishment of an initial task force

of demographers, community-development specialists, and statisticians to oversee the development of an initial model (or perhaps the adaptation of an established Census Bureau model) with follow-up refinements made by interns from the statistics, sociology, political science, and other departments.

2) Feedback from communities about developments that might skew more generalized population modeling. For example, when a military base decides to cut back or rapidly expand its personnel, "normal" population estimates no longer will be accurate. Fortunately, the university has its own intelligence service in the form of county extension agents who could inform staff members responsible for population estimation of any unexpected changes in a community's development pattern. With the use of on-line feedback through the Internet, it might be possible to update the estimates in near real time.⁴

Also, it should be recognized that for social-indicator data that do not rely on county-level population estimates, the university often does an excellent job of producing accurate and well-interpreted data. For example, at the University of Georgia, the Educational Testing Center maintains primary and secondary school test-score data for all school systems in the state and produces an "expected score" for each system. This expected score, produced through regression analysis, tells a school system how well it did in relation to scores for schools with similar student-body populations, i.e., schools with a similar number of children who are eligible for free lunch.

This example points out a second important feature of producing meaningful information for the results-accountability process. For this process to be successful, communities must set challenging, but realistic goals. Models that establish expected scores and rates, or that allow a community to see itself in relation to benchmark communities (i.e., the best communities in a category) will be important to the process. The university is one of the few institutions that is capable of creating, refining, and updating these models.

Information Distribution and the Internet Challenge: Perhaps the university's greatest potential strength lies in its established and evolving capabilities to distribute information to local communities. Unfortunately, few universities have an effective strategic plan for coordinating and marketing these efforts. This lack of a coherent plan is particularly dangerous in this period of rapid expansion of electronic sources of data. At the University of Georgia, for example, three or four independent efforts produce (or potentially produce) paper and electronic distribution channels for social-indicator data: the Extension Services' *Georgia County Guide* (paper and soon-to-be electronic), Institute of Community and Area Development's *Georgia Atlas* (electronic); Information Technology and Outreach Services' *GIS Georgia 100* (electronic); Carl Vinson Institute of Government's *Georgia Educational GIS*, a GIS planning tool for educational leaders and *Georgia County Benchmarking GIS*, a demonstration application for benchmarking counties against similarly situated counties). Each of these systems was produced by entrepreneurial effort for different purposes, at different scales, pitched to slightly different audiences, and marketed with different pricing structures.

While each of these efforts was designed to meet specific unique needs, the nature and direction of electronic technology rapidly may be making earlier market differentiation strategies obsolete. For example, as the Internet expands to reach residents throughout the state, it will be easy for national firms and agencies (e.g., Equifax and the Census Bureau) based outside the state to market on-line data to Georgia's local communities. Basic population census data, for example, is available down to the Zip Code level on the Internet. The Georgia Division of Public Health's Vital Statistics unit will soon have its data on the Web, as will a number of other state departments.

Essentially, information that was once the monopoly of university departments (that compiled and packaged data for distribution) will be marketed competitively and sometimes distributed free as part of a larger marketing strategy. University faculty who have depended on a market for their publications/applications will now have to compete. If the university is not strategically coordinated and organized to do so, its central role in the distribution of information may become a marginal one.

It is difficult for independent, entrepreneurially organized university faculty to establish and implement a strategic plan for creating and distributing value-adding information. For example, for more than fifteen years, the Cooperative Extension service of the University of Georgia has published the *Georgia County Guide*, a comprehensive compendium of county-level data on everything from agricultural production to vital health statistics. This publication has been self-sustaining for several years. Currently, it would be fairly easy to create a Web-searchable data base of *County Guide* data; anyone with Internet access could query the entire *Georgia County Guide* data set and produce county-specific reports. The strategic challenge for university outreach is the probability that if it does not pursue a effective Internet strategy, others will.

What Would an Effective Internet Strategy Look Like?

Finding or creating an appropriate Internet niche for university outreach involves analyzing current capabilities and liabilities of established Internet sites and identifying gaps between these resources and the university's outreach mission and core capacities. Many observers have noted three important features of the current state of the Internet:

1) *ordinary citizens, direct access to large-scale data bases.* This can be a major boon to citizens who would like to stay informed, who need detailed information, or who would like to perform their own data analyses.

2) *a major Balkanization of information sources.* This is due to the existence of millions of information providers (and hundreds or thousands on the same topic). The Balkanization of information can mean that a "wildcat" site can have as much potential to influence understanding as "official" sites.

3) *potential for numerous bad or content-less sites to drive out good sites.* If citizens are more likely to access sites with faulty, poorly structured, and out-of-date information, public policy is unlikely to be effectively furthered by Internet access.

The core capabilities and values of the university outreach community at UGA and other campuses include:

- 1) A knowledge of high-quality information sources.
- 2) A knowledge of key evaluative and statistical methodologies.

- 3) Access to in-depth expertise.
- 4) An ability and a desire to assist democratic group decision-making.
- 5) An ability to employ adult learning techniques.
- 6) A belief that information should serve the greater public good.

While these core capabilities and values seem rather ordinary to those in the university community, few other institutions (commercial or governmental) possess the same mix of capabilities and values. Given this situation, it would seem that university outreach could identify a number of ways it could be the exclusive producer of important Internet capabilities or could supplement in important ways the current Internet information provider.

In particular, a university outreach Internet strategy might include much of the following:

- *Provision of a single, high-quality source for user-friendly access to state and local government and community data as well as a source for accurate, objective, and fair analysis and interpretation of these data.* In some cases, this might mean simply providing links to other providers of information. In other cases, it might mean rating the quality of key sites for content, currency, and accuracy. In still other cases, this might mean producing new information and valuable interpretative displays from existing data. For example, most social-indicator data on the Internet are simply displayed in tabular format. Typically, one can compare a county's rate for a social-indicator item with the state's or the U.S. rate. Building on the statistical skills of university personnel, it should be possible to provide a more-telling picture of a community's situation. For example, it is possible to build access to social-indicator data bases that include built-in capabilities for returning statistics on comparison or benchmark counties or returning a graph with a regression line indicating the trend in a particular social indicator.

- *Development of on-line educational software.* Most university outreach programs include continuing education as part of their mission. In some fields, commercially provided educational software is ubiquitous. University outreach programs need not duplicate these efforts on the Internet. However, in other fields, educational software has never been created or has been poorly developed. This has been the case either because the field lacked substantial commercial potential or standardization, or because the field changed so rapidly as to make any particular software product obsolete by the time it was produced. Internet-based educational software can help overcome many of these problems because the software can be updated daily.

- *Development of on-line expert systems.* Universities are uniquely situated with respect to developing and updating expert systems, especially for government, educational, scientific, and non-profit groups. Expert systems are based on the idea of cataloging the

knowledge of experts and providing a series of *if... then* rules to identify circumstances in which this knowledge is used. Expert systems allow individuals with low to moderate levels of skill to perform as if they had a much higher level of skill. In particular, university outreach programs can assist in those areas of governmental responsibility such as human services that traditionally have been bypassed by the information and reengineering revolutions. One such system currently being constructed would enable human-service intake clerks to act as if they were more

Changing Information Marketing Strategies

A number of university outreach programs provide collections of data from public records for a fee. With the expansion of the Internet, many public agencies now disseminate their information on the Web for free. As consumers begin to realize they can easily go to the source of the data and download it for free, university outreach programs that have provided these data for a fee may experience a decline in revenue.

Universities are not alone in having to struggle with the question of user fees for data. Local governments that have developed expensive geographic information systems (GIS) also have had to work to discover effective pricing policies for their data.

In this respect, the experience of the City of Ontario, California, is instructive. Ontario recently changed the way it treats its sales of GIS data. Whereas it used to charge for each layer and geographic area, it recently discovered a more effective strategy: give the data away, but charge for technical assistance and consultation in interpreting the data, analyzing the data, and transferring the data to other platforms. The city found this strategy both expanded the use of its data to more community groups, consultants, and agencies. This process, alone, had positive effects on public policy making. It also increased the demand for information services. As a result, the city was able to do a more effective job of recouping its information production costs.

experienced social workers. Using the application would allow the intake worker to guide clients to the services they need, register them for help or benefits, and provide them with results of an on-the-spot screening and needs assessment. Internet-based expert systems can also assist in areas such as high technology, where the knowledge base of the expert is rapidly changing.

- *Development of customized on-line collaboration and decision-support applications.* In recent years, many university outreach programs have begun to use collaboration and decision-support software with small groups of persons linked to a local area network. The benefit of this software is that it typically gives relatively reticent individuals an equal opportunity to contribute to the making of decisions. The Internet can provide university facilitators the capability of having a much larger number of persons, representing a more geographically diverse population, involved in group problem-solving and decision-making.

- *Development of tools to support knowledge and skills exchange, community capacity building, and the development of micro-enterprise.* While schools, colleges, and universities will continue to play leading roles in

educating citizens and certifying educational achievement, in the future they will not play as exclusive a role as has been true in the past. This is the case because it is unlikely that formal institutions of education will be able to meet the explosion in demand for information and new skills that a knowledge economy creates. In this regard, university outreach programs should consider supporting the creation of the communication and information infrastructure that would allow individuals to more easily learn from each other. As Ivan Illich has suggested, we need to create tools that support small-scale, informal and convivial exchanges of ideas, skills, interests, and services (1973). Using the Internet it should be possible for individuals to register skills or interests in learning and to search for those who might need their skills or who can teach them what they want to know. A services and skills exchange can be used for mundane and leisure needs, for identifying human resources in communities that are only weakly linked to the formal economy, or for more scholarly, artistic, or business interests.

It might be argued that universities that support a skills exchange are in fact undermining the bread and butter of a university education. The question being raised is, essentially: In making the world a university, will anyone need the traditional university? This view suggests that there is a limit to the demand for knowledge, that this limit has been reached, and that there will be little need in the future for knowledge certification. A more realistic view of the situation is that in a knowledge economy, multiple sources of learning will create more demand for formal education and for quality and certification of quality in educational services. University outreach programs that are in the forefront of building the

infrastructure of informal learning networks will be more likely to take strategic advantage of the synergistic association between informal and formal education.

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Finally, university outreach faculty and staff should advance the state of the art by combining many of the above capabilities in ways that support and further the values of the university and that assist the establishment of a community of scholarly citizens within and among existing non-university

communities. Accepting this mission will demand a new view of the geopolitics of the university. Historically, universities were established as physical spaces in which free inquiry could proceed. Physical walls and independent charters removed universities from community standards and prejudices. States and communities for

the most part accepted the special status of the university in part because those who chose to live within the university compound typically relinquished any major claim on worldly power or goods. Because of this sacrifice and limited role, the university community historically remained quite small, well within the size that Plato suggested was ideal for maintaining community life.⁵ One fortuitous *by-product* of this small size was the natural capacity of small groups of scholars to establish the boundaries of scientific knowledge and to distinguish between astronomy and astrology, evolutionary biology and creationism, and physics and magic. For the most part, however, universities only asked to live in peaceful co-existence with the larger community.

In the past few decades, the political economy of the university has changed considerably. In contrast to the first wave of the

Industrial Revolution which grew out of the work of a small number of clever mechanics and inventors acting individually for the most part, much of the growth in the modern economy rests on high science and a broad base of functionally literate workers. As Peter Drucker has repeatedly emphasized, we are now living in a knowledge-based economy (1993). As such, the role of the university in the economic life of the community is integral rather than peripheral. One consequence of this change is a growth in the scale and scope of the community of

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knowledge workers. From a small, self-selected group of relatively impoverished faculty, knowledge work has grown into a major industry that is only partially conducted within the ivory walls of colleges and universities. The Internet is essentially speeding up the pace at which the wall between university life and a knowledge-based commercial life is being torn down.

The challenge for university outreach is how to ensure that the values of the free inquiry, and the practices of scholarship and the scientific method are provided adequate room and protection in the emerging situation where there is less distinction between the university and the larger world. This blurring of the line is already very evident in cyberspace. University outreach will be the key to meeting this challenge. As the political economy of the university has changed, so must its geopolitics. Rather than attempting to maintain itself as an island apart, the university of the future will need to establish physical and cyber links to those in society who are willing to participate in a large and moderately ordered discussion of what constitutes the good life. Universities have a valuable trademark in this regard and a good claim on the middle ground of knowledge. Universities stand in contrast to commercial institutions

of knowledge such as "Motorola University," which focus specifically on the limited ideal of efficiency: universities maintain a much larger breadth of interest in the whole of community life, its ethics and culture, and the human and biological habitats that sustain it. Additionally, through the centuries, universities have established disciplines, methods, indexes, and paradigms that provide a certain degree of order and the possibility for progress that is often absent in the free-for-all world of Internet new groups and Web pages. As James Fallows recently noted, the greatest need with respect to making the Internet a useful tool is for some person or institution to categorize what exists into a model of the whole of knowledge (1996). Fallows believes that the Encyclopedia Britannica's Macropedia provides one potential model for this. The organization of knowledge within and among university-based disciplines provides another (Fallows 1996).

More broadly speaking, however, university outreach in the coming decades should perhaps be patterned on "facilitated modeling." Facilitated modeling occurs when there is a coordinated, interdisciplinary effort on the part of faculty and outreach staff to help communities identify, measure, prioritize, and address their own unique problems in light of the current state of scientific and social-science knowledge. Modeling implies an effort to foresee problems and possibilities on a small scale before attempting to implement an idea on a large scale, but it also implies an effort to identify and understand the relationships among all the parts of a system before attempting to build the system in reality. Facilitated modeling can be conceived of technologically in terms of graphical interfaces, data governors (that do not allow appropriate manipulation of data), and computer code that incorporates the knowledge and advice of university experts into the system — but that is also transparent and open to criticism from the user. Essentially, university outreach needs to reshape Information Age tools so that they reflect and enact the values and methods of the university community while engaging the real problems of the larger community. The implication for those who currently provide data and assist community development is that they must do a better job of providing the broad scope of knowledge needed to address community problems.

While the distinction among university subject-matter disciplines is important to finding needed information and to the process of discovering new knowledge, it is less important and even counter-productive in the process of facilitating community development. Community development demands a synthesis of knowledge — the kind of synthesis that it takes to build a working model.

In the traditional inward-looking, knowledge-producing university, analysis and subject matter discipline must dominate. As the political economy of the university-community nexus changes, however, universities must be *both* knowledge-producing and knowledge-communicating institutions. With respect to the latter role, university outreach services will need to discover new ways of

ordering data and integrating disciplinary knowledge so as to make it possible for extension agents, elected officials, citizens, and others to collaboratively discover useful information and to act on it.

Facilitating the Use of Data in Collaborative Community Problem Solving: Typically, university departments have a number of ongoing efforts to assist communities to address individual, categorical issues (e.g., teen pregnancy, drug prevention, medical outreach, school dropout prevention, etc.). University faculty ordinarily work independently with managers and staff in specific program areas. Occasionally, however, one or two university faculty will also work to assist communities to develop more comprehensive strategies for helping children and families. Only in the rarest of instances have

Examples of University Outreach Internet Tools

1. A real-time community collaboration calendar.
2. A threaded discussion forum for facilitating community collaborative activity in human services/community development.
3. A tool for locating human services facilities in the community.
4. A tool for real-time polling on community/organizational planning issues.
5. A tool for bringing back a graph of longitudinal data on juvenile arrests in specific counties. This tool will eventually incorporate a regression analysis of the data so as to produce a trend line. Using this trend line, communities can chart progress in improving social-indicator data from expected rates.
6. A family screening expert system tool for assisting front-line intake worker to provide better immediate response to high-risk families and better referrals for all families.
7. A tool for community members to exchange skill and service information.
8. A prototype "one-stop" application form for a number of public assistance programs. (Password protected.)
9. A variety of test-making, course-organizing, and presentation-building tools.
10. Expert system-building tools.

Homepage for these Web applications: <http://128.192.30.50:2000/tools2.htm>

E-mail olooney@igs.cviog.uga.edu for demonstration of any of these Internet tools.

university faculty been organized to provide a comprehensive, interdisciplinary plan for community improvement. A key role for university outreach efforts in the future will be to devise such comprehensive plans. Broadly speaking, these plans might include:

- A protocol of best practice for university consultants working with community development groups.
- A mechanism for coordinating and brokering pieces of discipline-specific help into a comprehensive plan.
- Suggestions for how strategies in economic development and city planning could be adapted to more effectively produce the desired changes in social-indicator data that communities say they want.
- Resources for establishing more integration of services and development efforts at the local level. For example, in the human-services arena, universities could assist communities in developing prototype electronic forms for sharing client data among human-service agencies. Because of the Internet, the holy grail of a one-stop common access form for applying for services is within reach. Having universities play a role in the development of such information systems will be important because university faculty are more likely to balance the efficiency interests of agencies with the clients' interests in confidentiality and the right to review the accuracy of personal data.

Established expertise in all phases of turning data into information, preferred Internet access, and the trademark value of university ideals of fairness and objectivity put colleges and university in a strong, but hardly impregnable position with respect to leadership in community development issues. All three areas outlined — production, distribution, and facilitated use of social-indicator and other key data — need to be analyzed for potential strategic opportunities based on emerging trends and core capabilities. Moreover, university outreach must establish a plan to link the three areas together.

The industrial and managerial revolutions produced high levels of creative destruction in business and industry. The information revolution is likely to do the same for the academy. Organizations with a strategy for riding on top of the surf will no doubt enjoy the changes more than those who get caught unaware in the riptides. ■

Notes

¹ Even within fields such as education where there exist standardized outcome measures, only occasionally are data available that would indicate the degree to which any particular program (e.g., a new textbook series, an after-school program) had contributed to observed improvements. Because

many social-service programs have long-term goals, it is even more difficult to establish effectiveness.

² Fortunately, this fall the U.S. Census Bureau will publish population estimates for age, sex, and racial groups at the county level. A key role for university outreach will be to first check to see if these estimates are indeed accurate, and then to ensure these data are consistently and effectively used to calculate social-indicator statistics.

³ According to Larry Sink, statistician at the U. S. Census Bureau, Population Estimation Cooperative, Georgia is only one of many states that submits inaccurate social-indicator data. Although Sink cannot provide corroborating data, he reports that only a handful of states produces accurate population estimates for key subgroups at the county level.

⁴ Interviews with staff at Georgia's Office of Planning and Budget indicate the agency does not consistently adjust earlier projections based on population estimates; furthermore, inconsistent methodologies are used when adjustments are made. As a consequence, statistics based on projections may not be congruent with more recent and accurate census estimates. For more complete information, please contact the author of this essay at the Institute of Government, University of Georgia, Athens, GA 30602; e-mail olooney@igs.cviog.uga.edu; or phone (706) 542-2736.

⁵ In the *Laws*, Plato suggested that a community of approximately 8000 people would be ideal.

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