

Business and Engineering Outreach: An Information-age Partnership That Works

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Abstract

The Samuel Ginn College of Engineering and the College of Business at Auburn University both have long histories of successful outreach to engineers and other professionals throughout the Southeastern United States. Four years ago the deans of the two colleges began serious consideration of a strategic merger of their outreach operations into a single unit, Business and Engineering Outreach (BEO). The merger was accomplished in 2000, and in 2001 the present author was selected to lead the combined unit. This paper (a) describes the organizational structure of BEO, (b) outlines the organization's considerable impact in both quantitative and qualitative terms, (c) notes the challenges and opportunities currently faced by BEO, and (d) provides recommendations to other colleges of engineering which might undertake such a strategic merger with a college of business or other unit.

Introduction

Outreach is the process of "taking the University's knowledge base to the people" so they can use this knowledge to improve their businesses, communities, and lives [Muse 1, Sauser 3, Sauser 4]. The same "cutting edge" information we produce in our programs of research and disseminate in our programs of instruction at Auburn University is shared with the people of Alabama and beyond in our programs of outreach. Through this third mission of the modern land-grant university we seek to improve economic, community, and personal development throughout Alabama, the Southeast, and beyond.

The Samuel Ginn College of Engineering at Auburn University has partnered with Auburn's College of Business to create a unique organization devoted to serving our stakeholders through comprehensive outreach offerings. This organization—Business and Engineering Outreach (BEO)—is working to develop the economy of our state, region, and nation. We are delivering outreach programs from both colleges designed to (a) provide advanced degrees through distance education, (b) share expertise through programs of technical and business assistance, and (c) enhance the professional development of engineers and business persons through seminars, conferences, workshops, and other continuing education programs. This unique partnership, Business and Engineering Outreach, is the subject of this paper.

The Samuel Ginn College of Engineering and the College of Business at Auburn University both have long histories of successful outreach to engineers and other professionals throughout the Southeastern United States. Both colleges embrace continuing professional development, distance education, and technical assistance to industry as important aspects of their mission. In fact, both colleges have served a similar profile of clientele as they have sought to provide effective outreach to their constituents. With respect to distance education, the two colleges have for some years worked in tandem to deliver MS and MBA programs to students located throughout the nation.

Four years ago the deans of the two colleges began serious consideration of a strategic merger of their outreach programs into a single unit, Business and Engineering Outreach (BEO). They appointed a study committee to

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explore the issues surrounding such a merger and to provide recommendations regarding the feasibility of such action. The committee brought forward a favorable recommendation: A merger of the outreach units of the two colleges, although unprecedented in the University's history, would likely result in cost savings, improved efficiency and effectiveness, strategic fit, and considerable alumni support.

The merger was accomplished in 2000, and in 2001 the present author was selected to lead the combined unit. An earlier paper [Sausser, 2] described the approach taken to accomplish this strategic merger. Those who were intrigued by this idea requested a future paper which would describe the events of the first several years of the life of BEO. The present paper meets that need by (a) describing the organizational structure of BEO, (b) outlining the organization's considerable impact in both quantitative and qualitative terms, (c) noting the challenges and opportunities currently faced by BEO, and (d) providing recommendations to other colleges of engineering which might undertake such a strategic merger with a college of business or other unit.

BEO Organizational Structure

Business and Engineering Outreach is under the administrative direction of an associate dean (the present author) who reports *directly and jointly* to the deans of the College of Business and the Samuel Ginn College of Engineering. The associate dean meets frequently with both deans, and occasionally with the two deans jointly. Each year the associate dean prepares a report to the two deans, who jointly evaluate the unit's—and the associate dean's—performance. The associate dean holds a tenured professorial appointment in the Department of Management, and his office is located in the Lowder Business Building. His compensation is borne equally by the two colleges.

Reporting to the associate dean are two staff employees plus seven professional employees who serve as directors of the component units of the organization. Including staff and professional employees, student assistants, and part-time and temporary employees, BEO human resources number approximately 50 persons. Three of the units, making up about half of the BEO workforce, are housed in Ramsay Hall, the headquarters building for Engineering. The other four units, again about half of the workforce, are located in the Lowder Business Building. In addition to leading the seven BEO units described below, the associate dean is also responsible for facilitating outreach offerings of the various departments and centers affiliated with both colleges. These outreach offerings are under the direction of their respective *academic* leaders; BEO is responsible for *supporting* distance learning and other programs offered by our academic units, but does *not* make decisions regarding curriculum, admissions, faculty assignments, and the like. This is in accordance with sound principles of academic shared governance.

The *Auburn Technical Assistance Center* (ATAC) is an outreach unit that provides consultation, business assistance, and technical assistance to manufacturers and other businesses, not-for-profit organizations, and government agencies in Alabama and the Southeast. ATAC is one of ten centers affiliated with the Alabama Technology Network, and has a statewide mission. ATAC employs several professional-level Management Scientists and graduate student assistants, but accomplishes much of its work through the faculty of the two colleges. This unit is funded primarily through grants, contracts, and fees for service. Auburn University also provides matching funds for some of the federal grants used to finance certain programs offered by ATAC.

The *Auburn Small Business Development Center* (SBDC) is an affiliate of the Alabama Small Business Development Consortium, which is funded by the United States Small Business Administration and the various colleges in Alabama that are members of the consortium. The Auburn SBDC serves the eight counties located around Auburn University, plus any other clients requesting its assistance. The purpose of the SBDC is to enable entrepreneurs to establish or expand their small businesses. Programs offered by the Auburn SBDC include consultation and training. The Auburn SBDC has a small continuing staff; much of the outreach programming of this unit is provided by College of Business faculty and graduate students.

The *Blue Ridge Conference on Leadership* (BRCOL) is a partnership between prominent corporations in the Southeast and Auburn University. Founded in 1919 by a group of southeastern business leaders and presented every year since, the Blue Ridge Conference on Leadership is dedicated to enhancing human relations skills in the workplace. The administrative offices and executive director of BRCOL are housed in the Lowder Business Building. The executive director reports jointly to the associate dean for BEO and the board of directors of BRCOL,

Inc., a not-for-profit educational organization. Logistical support is provided to BRCOL by various units of BEO, and faculty members of the Auburn University College of Business have been among the speakers featured during the conference. BRCOL provides great visibility to both colleges.

Business and Engineering Continuing Education (BECE) is housed in Ramsay Hall and provides services to both colleges. Formerly known as the Auburn University Engineering Extension Service, this versatile unit provides continuing education conferences, short courses, and professional development programs for a variety of audiences, including professional engineers and surveyors; specialists working on transportation, environmental, and other technical issues; and business persons. Engineering and Business faculty are given many opportunities to share their expertise with learners throughout the nation through programs offered by BECE. This unit also coordinates the BEST Robotics program, Engineering Professional Development, and many other special outreach offerings.

The *Media Resources Center* (MRC), headquartered in Ramsay Hall, provides the video production and distribution support needed to mount the Graduate Outreach Program, a joint venture of the Samuel Ginn College of Engineering and the College of Business that offers graduate education at a distance to students located throughout the world. MRC staff members operate the television cameras located in specialized classrooms in Ramsay Hall and the Lowder Business Building, plus switching and production equipment, the media dubbing center, and the distribution center for the hundreds of videotapes and DVDs that are created daily for use by Graduate Outreach Program students. MRC also produces video media to support Engineering Professional Development distance education programs and other offerings of the various BEO units.

Network and Media Services (NaMS) is responsible for acquiring, installing, networking, maintaining, and upgrading all of the computers used by students, staff, and faculty within the College of Business. In addition, NaMS provides similar support for the sophisticated multimedia equipment located in all of the classrooms in the Lowder Business Building, plus several computer laboratories and “mini-labs.” Maintaining the College of Business web site is another of NaMS’ responsibilities. The director of NaMS works closely with his counterpart in the Samuel Ginn College of Engineering and with the director of the Media Resources Center to assure that all equipment and software is compatible, properly interfaced, and operating smoothly.

Outreach Student Services (OSS) provides comprehensive support to all students enrolled in the Graduate Outreach Program (GOP) of the two colleges. Such support includes serving as the students’ advocate and point of contact with the various administrative units of the University (such as the Registrar’s Office and the Bursar’s Office), providing assistance in course scheduling and other logistical issues, tracking completion of assignments and examinations, certifying examination proctors, and working closely with professors and academic advisors to assure an excellent learning experience for all GOP students.

BEO Accomplishments, 2002-03

Last year we offered 74 courses to 181 students enrolled in MS-Engineering distance education programs, plus 42 courses to 605 students enrolled in MBA, MMIS, and MAc programs offered by the College of Business. During the year 17 students graduated from our masters programs in Engineering and 61 from our Business programs. We also concluded our DVD pilot test and purchased 20 additional DVD original recorders and two more high-speed dubbers. This has enabled us to begin offering (as of Fall Semester, 2003) the DVD option (as well as the existing videotape option) to *all* students in the program—engineering, business, management information systems, and accounting. Furthermore, we are now pilot testing a *third* delivery option—streaming video—which we hope to make available to our students in the near future. On our most recent customer satisfaction survey we scored an average of 4.26 out of 5.00 on 13 items measuring various aspects of GOP student services and program delivery. Overall our GOP students seem to be very satisfied with their graduate education experience.

In addition to providing all of the media production and distribution support for the Graduate Outreach Program, the Media Resources Center (MRC) also earned \$78,526 for production and dubbing work to support other outreach and promotional efforts of the University. Videos produced by MRC for the Samuel Ginn College of Engineering included *Commitment to Excellence* plus promotional pieces for the Mini-Baja (both men’s and women’s), Solar,

and Formula car competitions, including the video featured on the Jumbotron during one of Auburn's home football games, which showcased all four cars and the student teams that built and raced them.

The Auburn Technical Assistance Center (ATAC) completed 101 business and technical assistance projects during the year with an overall customer satisfaction rating of 9.4/10.0. Client surveys indicate ATAC projects conducted by faculty from Engineering, Business, and other Auburn units resulted in \$8,027,000 in increased sales, \$9,002,000 in retained sales, \$2,521,750 in cost savings, 156 retained jobs, 30 new jobs, and \$12,229,675 in increased investment. ATAC also attracted \$907,000 in funding to the two colleges through contracts, grants, matching moneys, fees, sales, and registrations. ATAC became the first ATN-affiliated center in Alabama to teach a Six Sigma Black Belt and Green Belt course. We are pleased to report that ATAC was awarded a coveted 2003 Project-of-the-Year award from the National Association of Management and Technical Assistance Centers (NAMTAC).

Specialized assistance projects were also provided by the Small Business Development Center (SBDC) and the Auburn Engineering Technical Assistance Program (AETAP). The SBDC counseled 138 clients this year, and provided business training programs to 592 clients. Additionally, the Auburn University SBDC provided an initial response within seven days to 92% of 242 telephone or walk-in client requests for information. The Auburn SBDC received customer satisfaction ratings of 4.0 or higher (on a 5-point scale) from 99.5% of the individuals completing training evaluations and 98% of those completing counseling evaluations. Based on number of clients served per dollars expended, the Auburn SBDC is the second most efficient center in the Alabama Small Business Development Consortium.

This year AETAP (an outreach program based in the Department of Mechanical Engineering) completed 21 technical assistance projects (with 21 additional projects on-going and eight pending) for various industries in Alabama and attracted \$159,323 in extramural support. A highlight for AETAP during this year was winning a three-year \$1.3 million grant from the National Science Foundation Partnership for Innovation program. Clearly our business and technical assistance programs are having a major positive impact on the economy of our state and region.

During the past year BEO provided a total of 225 continuing professional development programs to 9343 professional engineers, business persons, and other participants. Collaborative projects are underway with the Alabama Department of Transportation, the National Center for Asphalt Technology, Auburn University Montgomery, and several of Auburn's other colleges and schools as we expand the scope of our continuing education and conference facilitation activities through Business and Engineering Continuing Education.

In its third year, the BEST Robotics program grew from being one of 23 competition sites to becoming the organization's second *regional* championship, South's BEST, which will host 36 student teams from Alabama, Florida, Georgia, Illinois, and Ohio. This competition, to be held on the Auburn University campus November 14-15, 2003, is expected to draw over 1000 high school students, parents, and sponsors, and will be a tremendous recruiting opportunity for the Samuel Ginn College of Engineering.

The most recent Blue Ridge Conference on Leadership (BRCOL), held in Black Mountain, NC, on October 14-17, 2003, drew over 475 participants, including the entire on-campus first-year MBA class from Auburn University. BRCOL attendees rated their overall conference experience 4.47/5.00. BRCOL is serving as a springboard for additional leadership training events for the College of Business, including a Foundations in Leadership Certificate Program for Auburn MBA students. Four BRCOL-affiliated faculty earned certification as instructors in the Phi Theta Kappa Leadership Development Studies Program this year.

Network and Media Services (NaMS) maintains over 500 networked computer units within the College of Business. Most of these are "top of the line" Dell computers with 17" flat screen monitors. In addition, NaMS maintains multimedia equipment in every College of Business classroom. Major projects completed by NaMS this year include upgrading equipment in 13 classrooms, upgrading all College of Business network servers to their maximum memory capacity, upgrading the web server engine to ColdFusion MX, updating the College of Business web site, and adding an emergency generator system to guard against network problems should the building

experience a power outage. NaMS received an “outstanding” overall satisfaction rating from 92.9% of the respondents on our most recent user survey.

In addition to these major contributions to Auburn University’s outreach mission, BEO faculty and staff also contributed in the classroom, through scholarly publications, through service assignments, and through “citizenship” activities such as writing for the College of Business magazine, *The Shareholder*, hosting visiting executives and international students and faculty, producing video pieces and printed brochures, and assisting the deans of the two colleges in a variety of ways.

Challenges and Opportunities

As can be gleaned from the two sections above, BEO has attained organizational stability and is contributing substantially to Auburn University’s outreach mission. It has also met many of the expectations resulting from the 1999 study which led to the decision to merge the outreach components of the two colleges. Strategic fit, cost efficiency accompanied by a gain in effectiveness, strong client and alumni support, and a feeling of teamwork among all components of BEO have resulted from a lot of hard work among team members. Particularly important has been the support shown by the deans of the two colleges. Their dedication to “making BEO work” has been a key to the organization’s success.

Given our experience at Auburn University, should other colleges of engineering consider strategic mergers with respect to outreach? An unqualified answer cannot be given to that question! BEO has encountered both challenges and opportunities during its few years as an operating entity. Had not the deans of both colleges been dedicated to the unit’s success, an unhappy story might have been the result. Some of the challenges and opportunities faced by BEO are discussed below. These factors must be given careful consideration by any college of engineering considering a merger of the nature which created BEO.

Organizational Culture

A merger of units requires a blending of organizational cultures. Every organization has its own unique heritage of values and goals, heroes and stories, norms and taboos, policies and procedures, and informal “ways of doing things.” When two organizations are formed into one, it is essential that effort be focused on blending these legacy cultures.

As befits a strong College of Engineering at a land-grant research university, the Samuel Ginn College is heavily focused on its programs of research and graduate education—particularly at the doctoral level. Engineering research is capital intensive; it requires sophisticated laboratories, equipment, supplies, energy, and human resources. To be successful in such an environment, the faculty of the Samuel Ginn College of Engineering must keep a constant focus on pursuing extramural funding and accomplishing the goals of their programs of research. Outreach within such a context cannot become a distraction; successful outreach programs must contribute resources to graduate education and research, not draw resources away from them.

Business research is far less capital intensive. Instead, the focus is on access to business organizations and business data. Outreach programs which provide such access are valued by faculty in Auburn University’s College of Business. The major source of pride in the College of Business is its nationally-ranked MBA and undergraduate programs of instruction. Business faculty are entrepreneurial in nature and are constantly seeking innovative ways to generate funding by meeting the needs of underserved market segments—such as business executives seeking graduate education through an Executive MBA program. Outreach which supports and enhances these entrepreneurial ventures is important to the success of the College of Business.

Making certain that BEO fits the desires and expectations of both cultures has been a challenge! Fortunately, the personnel who make up BEO have been attuned to this challenge from the start, and have sought diligently to cater to the needs of both colleges. We have sought to capitalize on the facts that (a) faculties in both colleges are pragmatic by nature and enjoy solving problems, (b) both faculties are very quality-conscious and appreciate efforts to enhance

their effectiveness, and (c) the deans of both colleges are focused on clearly-stated goals of national recognition for the excellence of their faculty, students, and programs.

A successful merger cannot take place if organizational cultures clash, or if there is not an intentional effort to recognize and meet the needs of both parties to the merger. BEO is tracking toward success because its personnel seek to work together as a team, are willing to share one another's burdens and enhance one another's effectiveness, and are establishing mutual norms, values, and procedures which lead to a common culture.

Organizational Structure

BEO is a "boundary-spanning" organization in that it works across the structural boundaries of two colleges. Auburn University is not well prepared to deal with boundary-spanning organizations. All of the University's human resources and financial policies and procedures are established on the principle of "unity of command." Thus it is very difficult to function within an organization that reports jointly and directly to *two* deans! We are fortunate in that the two deans have very similar leadership characteristics. Furthermore, they are friends as well as close colleagues, and have a history of working effectively together. This is true not only for the deans, but for the two colleges as well. If this were not the case, it is likely that BEO would fail under the weight of two administrative structures, philosophies, and approaches. Given the "organizational goodwill" under which BEO is functioning, we have been able to maintain ourselves as a distinct entity despite being housed in separate buildings, paid from separate accounts, listed on separate personnel rosters, and the like. Things are working because we are making them work.

Strategic Fit

Strategic fit has been one of the most satisfying aspects of this merger. The outstanding delivery mechanisms existing within the Samuel Ginn College of Engineering before the merger—such as its successful Engineering Extension Service and Graduate Outreach Program—have blended very well with the wealth of content possessed by the College of Business and the heavy demand for its programs. We have found that the Media Resources Center and Outreach Student Services are very effective in meeting the needs of both Engineering and Business faculty and students. There is no need for a duplication of effort, or for a costly duplication of equipment and facilities. Economies of scale are proving effective for both colleges. Furthermore, both colleges have benefited from our experiments with various delivery media and course design.

Likewise, cross-marketing of continuing education and professional development offerings has been very successful. Whenever we make a contact with a potential client, no matter which of BEO's units we represent, we promote *all* the outreach programs of both colleges. Furthermore, we share contact lists and databases among BEO units, and promote one another's programs in our printed materials and web sites. This has enabled us to extend our marketing reach considerably without increasing our marketing costs. The two colleges have many stakeholders in common: Employers that hire from both colleges, alumni who support both colleges, agencies and businesses which benefit from research from both colleges. These stakeholders have been vocal in their appreciation of our efforts to represent effectively both colleges.

Financial Matters

BEO has as a goal to become self sufficient, and thus financially independent from state funds allocated to either college. Auburn University is not wealthy, and we need all the funds we can muster to support our programs of research and instruction. Moving toward this goal has been difficult, but we have made progress. At present we depend on the budgets of the two colleges for one or two professional positions, plus some matching money for grant-supported programs. A major problem has arisen, however: The State of Alabama has been forced make significant budget cuts, and we are concerned that these cuts will adversely affect our clientele. If we cannot earn enough income from our own efforts, we may be forced to scale back our programming. This problem is not, of course, unique to Alabama; many states are facing budget shortfalls at present. We hope that our years of experience in "making do" with fewer resources than we really need will help us survive this latest round of financial trouble.

Otherwise we will downsize, scale back our offerings, and do whatever we can to survive. It has been heartwarming to see all the units within BEO “pitch in” to help one another during these tough times.

Technology Changes

As everyone who works with technology knows, we are in a period of rapid change and rapid product obsolescence. Distance education programs are technology-driven, and obsolescence is not an option if we are to remain successful. Just three years ago our “bread and butter” distance education medium was videotape. Videotape delivery (through the mail) was preferred by the great majority of our Graduate Outreach Program students. Over the three years of BEO’s existence, however, we have seen a swing of preference from videotape to DVD (with CD delivery “lost in the scramble”). We are now able to deliver all our GOP programs using both media (videotape and DVD), but at the cost of acquiring much new equipment. At present we are preparing for a transition to streaming video as a third delivery option. We anticipate DVD and streaming video will likely become the preferred media of our future clientele. Again, this transition is costly in terms of equipment and the learning curve.

We have experienced similar change in our computer equipment, classroom multimedia equipment, and web site designs. Each of these has undergone one or more revisions over the past few years. At present we are gearing up for wireless computing in the Lowder Business Building, Ramsay Hall, and many other buildings on the Auburn University campus. Naturally this rapidly changing technology puts great demands on BEO with respect to equipment and human resources. Fortunately the Samuel Ginn College of Engineering and the College of Business both attract highly-qualified students and faculty who can help us meet these demands.

Summary and Recommendations

In 1999 the deans of the Samuel Ginn College of Engineering and the College of Business at Auburn University made the bold decision to merge their outreach operations into one unit, Business and Engineering Outreach. The merger was accomplished in 2000, and the present author was appointed to lead the unit in 2001. Over the past several years, BEO has stabilized as an organization and has succeeded in creating a shared norm of partnership and mutual support among the seven units which make up the organization. Operating efficiencies have been achieved, strategic fit is a major positive outcome, and the boundary-spanning entity known as Business and Engineering Outreach at Auburn University is tracking toward success.

This success is due in large part to the efforts of all involved to “make it so.” Credit must go to Dean Larry Benefield of the Samuel Ginn College of Engineering and Interim Dean John Jahera of the College of Business (as well as his predecessor, Dr. Wayne Alderman) for providing the vision and support needed for this venture to progress to its present level. There are many challenges ahead, however—including potential financial crises and rapid technology change. We hope that BEO has established enough momentum to overcome the potential obstacles in its course.

What advice can be shared with other colleges of engineering considering a potential merger of its outreach operations with those of another college? Consider the step carefully, and look at it from many angles. There will be problems of organizational culture and structure to overcome, as well as those of finances and technology. This particular venture has succeeded to this point through hard work from all involved. Unless both deans are committed to the success of such a venture, and all parties involved are willing to make sacrifices to see the vision through to fruition, an entrepreneurial venture like BEO cannot succeed. But when the “stars are in alignment,” such a bold venture can pay great dividends for all involved. Such is the nature of entrepreneurship.

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