

2.6 APPENDIX: SAMPLE EVALUATOR'S REPORT

EVALUATOR'S REPORT	
UNIVERSITY	
CENTER FOR RESEARCH	
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Part I. Annual Evaluator Report

Overview and Analysis

There is considerable evidence that CMR (Center of My Research) is operating in an effective fashion and has achieved a reasonable level of organizational stability as it has managed its merger with "Another University" over the past several years and the recent transition to a new director. At same time, the center appears to be making good progress in fulfilling its stated mission. Center faculty are actively pursuing research projects in all thrust areas except image analysis and publishing in well respected journals. Compared to national IUCRC norms, CMR IAB members seem well satisfied with the center's research program and administrative operations. Center research is moving into member firms and appears to be having a positive impact on its R&D. Students are graduating and many are being hired by member firms. The center continues to attract a large number of visiting scholars and post docs from around the world.

In general, the center's future prospects seem reasonably bright. In spite of intense competition, the computer and communications industries have been growing and showing a profit; a number of new firms have moved to the RTP area over the past several years. In addition, university officials seem supportive of the center and its goals and a small scale initiative for communications has been launched by the state. The center has begun a systematic effort to expand and enhance it's educational objectives which appears to have the support and input of local industry. The imminent opening of the new Engineering Graduate Research Center should only add to the "luster" of the center.

Unfortunately, the center must address some challenges. Clearly, members believe developing a larger and more stable funding base remains the most significant. The recent withdrawal of two relatively new members represents a major blow to the center's efforts to expand its membership base. In the short-term this will shrink support available for the center's core research program, and may jeopardize the support NSF provides MU ("My University"), "Another University" or both. While it is too early to tell, the development of "product name" may represent new competition for the interest and support of local firms. The center will use its spring meeting to inform and hopefully attract some new members. Clearly, adding new members must remain the center's number one priority.

A tight budget will probably undermine the center's ability to engage in the kind of strategic planning exercise some members think it could benefit from. It may also exacerbate the relatively very short timeframe members believe it should take to benefit from center research. It may also complicate management of a multi-institutional center as it enters a period when all support is in principal "up for grabs".

At the same time, CMR must develop a strategy for capitalizing on the research capabilities of the Experimental Systems (ES) group it has agreed to house and perhaps merge with. The IAB has reacted positively to this development but has taken a "wait and see" position on the benefits of a true merger. While ES represents a promising opportunity, particularly if it can add new members, it's not clear how complementary the ES capabilities are to the center's current research focus. Successfully managing this merger will undoubtedly also take a lot of time and energy.

Finally, the center needs to successfully complete the negotiations it is having with some of its members over intellectual property issues.

Introduction

The following report provides a summary and analysis of the status of the Center of My Research (CMR). It describes critical events and accomplishments which have taken place over the past twelve months, summarizes feedback from the process/outcome questionnaires which were administered to industry and faculty, and provides an analysis of issues and concerns which may affect CMR during the next year.

At the time this report was prepared, the center was entering its fifteenth year of operation and the third year of its partnership with "Another University". This partnership provides for five years of NSF support. During the reference period for the Process/Outcome survey the Center was supported by eight members ("8 industry names") and NSF (IUCRC Program and the Electrical Engineering Division) and had an operating budget of approximately \$1 Million.

Goals and objectives

The center's mission and research areas have stayed relatively stable over the past several years. According to its bylaws the center's mission is: "to carry out basic and applied research on fundamental problems with both industrial and academic relevance, to transfer these results to our members, and to provide our students with a unique and challenging educational opportunity. Our research goal is to create concepts, methods and tools for use in the analysis, design and implementation of advanced computer and communication systems". The center's technical work is organized into five research areas which may be added to or dissolved to meet the needs of the center. Active research areas include: high speed networking, reliable and fault-tolerant systems, digital communication systems, distributed systems and algorithms, and image analysis.

Some consideration was given to broadening the center's research areas this year to accommodate a new team of researchers whose work focused on "experimental systems" (discussed below). However, it was decided that any new work produced by investigators from this group could and should be presented as part of one of the five research areas.

At the same time, the center has decided to focus more time and energy into enhancing and refining its educational mission. These efforts will be spearheaded by "Director's Name", the center's founding director. Attention is being paid to enhancing a variety of center-related educational activities including traditional course work, short courses, and distance learning. While these efforts are in the early stages they have included soliciting feedback from local industry and beginning a partnership with a non-member company ("Industry Name"). Some of these activities are discussed below.

Environmental/Institutional Changes

Environment

The communications and computing industries continue to grow and expand. However, competitive pressures within these industries have forced a great deal of restructuring and downsizing. Like other industries, R&D expenditures are facing continued scrutiny, especially support for fundamental research. These forces have not been conducive to expanding the center's membership base. On the other hand, the number of communications and computing companies located in "name" area has grown over the past several years. Some of these firms have joined the center (e.g., "Industry name"). Others, like "industry names", have not, but are considered prime prospects for membership.

A new initiative has been formed called the "project name" under the auspices of the MNPRI (a state-sponsored not for profit research institute). "Project name" will be a public-private partnership and will try to address research and applications issues in communications. Although the scope and exact mission of this organization isn't clear at the present time, it appears that "project name" will solicit funding and memberships from local firms. Some members expressed concern that this initiative may constitute competition for CMR and may prevent a coordinated approach to meeting the needs of local firms. Staff and IAB members agreed to approach key participants in this venture and to promote coordination.

Institution/university

MU and "Another University" both continue to be very supportive of linkages with industry. Dr. Center Director has been appointed MU's new Dean of Engineering. Dr. Faculty was director of an Engineering Research Center and previously served as Department Head of ECE. He is quite familiar with the center and, like his counterpart at "Another University", Dean Faculty, appears to be very supportive of the center and its mission. Activities at MU should be greatly enhanced when center faculty occupy greatly expanded and enhanced research space in the new Engineering Graduate Research Center spring, 1997.

Several new opportunities for expanding partnership activities have developed over the past year. MU has signed cooperative agreements with Thailand, Taiwan and Israel. These agreements may create additional opportunities for expanding the center's international dimension. In addition, the state-sponsored not-for-profit coordinating agency, will team up with MU's Institute to sponsor long-term partnerships between local universities and information technology firms. Awards will sponsor fellowships and will involve cost sharing by several firms.

Organizational/Research Changes

Staffing

The center has experienced a number of significant personnel changes over the past year. Dr. Faculty, the center's executive director, resigned at the beginning of the fall semester to become MU's Associate Dean for Academic Affairs. A search committee was formed which involving representatives of the respective departments and interviewed several candidates (both internal and external). Dr. Faculty was selected to serve as center director. As one of the center's founding faculty members, Dr. Faculty has been involved with the center since its inception and is quite familiar with its operations. On the "Another University" side, Dr. Faculty has been appointed associate director and will assist Dr. Faculty in managing "Another University"'s operations.

A number of current or new MU faculty members have expressed an interest in contributing to the center's research program; one faculty member will be on leave during spring, 1997. In addition, an established research group, "experimental systems", has asked to merge its research program and operations with the center's. The center continues to serve as a focal point for a great deal of international exchanges. Visiting faculty from Korea, France, Sweden, and Spain have worked with and exchanged visits with CMR faculty from "Another University" and MU.

Financial

Data for the last complete fiscal year (FY 1995-96) show an operating budget of approximately \$1 million. About half this amount came from membership fees and member enhancements, the balance came from NSF IUCRC support, support from other federal agencies and university contributions. This represents about a 10% increase in support over 1994-95. The loss of two members, "industry name" and "industry name" (in 1995), was offset by the addition of "industry name" and "industry name". Unfortunately, both of these organizations announced that they would not be renewing their memberships. Thus, center membership will stand at six. Since NSF requires centers to have at least \$300K in membership support, this development may impact NSF's ability to continue to support the center down the road.

On a positive note, the center has been the beneficiary of supplemental support. "Industry name" donated equipment to the center worth roughly \$750K. This equipment will enhance the ability of the center to experiment with protocols and traffic measurement software. In addition, two MU and one "Another University" student were supported by "Industry name" fellowships. "Industry name" made a gift worth roughly \$100K to an investigator who is affiliated with the center.

Linkages

The center continues to actively pursue linkages with other institutions. The center currently supports projects at "University Name" and "University Name". It cost shares (with NSF) a "TIE" project which involves researchers at MU and "University Name". As described above, the center has an active program of visiting scholars from the U.S. and abroad. In addition, a CMR graduate student has been working at "Industry Name", a primary telecommunications research institute. Finally QXD wants CMR to explore connection with DXQ's Systems Research Center. The director was asked to pursue this opportunity.

Operations

Feedback from the process/outcome survey indicates IAB members are relatively satisfied with CMR's administration and operations. CMR rates at or above national norms on virtually all the administrative indices (e.g., communications, research planning, etc.). Members seemed particularly satisfied with the quality of center proposals and reports and communications with the center. Satisfaction is somewhat below national norms on two items "intellectual property" and "fund-raising" (e.g., recruitment).

The intellectual property ratings have undoubtedly been affected by concerns some members have with the center's membership agreement. This agreement is currently being revised.

It's also clear that firms consider increasing membership and financial resources one of the center's highest priorities; similar feedback was provided last year. In fact, plans were laid last spring to implement a major recruitment campaign. Unfortunately, these plans were canceled while the center managed the transition to a new director. In the short term cohabitation with ES may provide some financial relief by helping to cost share the center's administrative infrastructure. While some additional recruitment activities are planned for the spring IAB meeting, the recent resignation of two members will probably add more urgency to expanded fund raising efforts.

Other operational issues which will need to be addressed in the near future include: the expiration of the "fencing" policy which required support raised by each institution to be spent at that institution; how (or perhaps if) to integrate the center's expanded emphasis on education (including short courses, network based education) into the center's other activities.

Research Program

The center currently supports fourteen core projects (ten at "University Name") and 9 enhancement projects (eight at "University Name"); projects cost about \$30K each. A typical member indicates they take an active interest in about half of the center's research projects. With the exception of image analysis, at least one member nominated at least one project from all of the thrust areas as having the greatest interest to them. Projects by "Faculty Name", "Faculty Name" and "Faculty Name" received multiple nominations.

Feedback from the process outcome survey indicates IAB members are relatively satisfied with the CMR's research program. CMR rates at or above IUCRC national norms on most indices. Members seemed particularly satisfied with the "quality of researchers" and the "innovative quality of the research". Members rated the "focus" and "breadth" somewhat lower than national norms. Members also appear to expect to see "tangible results" much sooner (14 months) than national norms (18 months). Specific recommendations related to improvements in these areas focused on the need to develop a long range strategic plan which would develop a

better definition of research thrusts (five areas) and the need for more research and staff in certain topics most notably wireless and real time distributed computing.

The most significant development affecting the center's research program is the addition/merger with the experimental systems (ES) group. The prospect of incorporating ES's work into CMR was broached at the fall, 1996 IAB meeting. This merger was initiated by the faculty in the ES group.

ES attempts to invent novel approaches to solving bottlenecks in maximizing system performance/cost; much of its work is related to silicon technology and QXD. ES is an established research group which involves half-a-dozen faculty and about 40 research assistants. This group currently has over seven million dollars in specialized equipment and several million dollars in funding, much of it from DARPA. Some of the support comes from corporate sponsors like "Industry names". Since this group does not need financial resources, the motivation for this merger appears to have been two-fold: look for opportunities for cooperative research and obtain an efficient organizational structure to manage the group's operations.

While the IAB hasn't expressed a desire for the kind of research performed by ES in the past, they agreed that there were significant opportunities for synergy between the two groups but that these opportunities must be exploited deliberately. As a consequence, the IAB recommended that, in the short term, CMR and ES operations and research remain "loosely coupled", that individuals look for opportunities for profitable collaboration and that the merit of the merger be evaluated in 12 to 18 months.

In general, the center's research program appears to get high grades from its current members. However, there appears to be some sentiment for improving the breadth and focus of the research. In order to improve the research program the IAB asked CMR staff to plan a workshop. This workshop would provide an opportunity to showcase CMR research, identify opportunities for synergy and allow faculty an opportunity to learn what industry is doing. Placing the ES research under CMR's umbrella and the need to demonstrate how to integrate the work performed by faculty in these two groups sharpens this challenge.

Center Accomplishments

The center continues to be very productive in its research program. Faculty average four publications and three conference papers, based on center research, each year. Many of these articles are published in the most prestigious journals in their respective fields.

One indication of the center's technology transfer success can be seen in the development and funding of enhancement projects. During 1995-96 members provided almost \$300K in additional support in the form of enhancement projects. Feedback from IAB members based on the process/outcome assessment indicate the CMR is well above national norms in terms of "contributing to the development of intellectual property in my firm" and is slightly above norms on "improvements to existing products" and "stimulating new research projects". Unfortunately, it is typically hard to obtain descriptions about what was transferred or developed. Member firms reported they started seven new research projects back in their labs with an average cost of \$85K/project based on center research. In another example of transfer, a researcher will take a leave of absence to help a local firm (non member) develop a new switch based on his Quality of Service research.

On the educational front, eight students received advanced degrees this past year; several were hired by member firms. A large number of internationally recognized scholars have contributed to and benefited from the center's work. As was discussed above, plans are currently

being made with industry input to expand and enhance graduate and undergraduate educational programs. These efforts should be complementary to the distance learning project the center is carrying out with support from "Industry Name".

