

## **The Formation of a National Telecommunications Collaboration: Critical Issues in the Development of Partnerships**

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### 1. Overview

The National Center for Telecommunications Technologies (NCTT), an NSF sponsored Advanced Technical Education (ATE) National Resource Center located at Springfield Technical Community College in Springfield, MA has entered into a new phase of its evolution. As a national resource center, NCTT is undertaking the innovative formation of a national coalition of regional partners that will, along with NCTT, be a key resource to all industry sectors for the development of and as a source for appropriately skilled information and communication technologies (ICT) technicians and technologies. The first group of regional partners has been chosen and the process has begun to attempt to integrate all the players into an effective team that will be able to promote and strengthen telecommunications and ICT related associate degree programs nationally. This presentation will provide an overview of the process and include examples of the challenges and successes encountered along the way.

NCTT first came into existence as a National Science Foundation (NSF) Center of Excellence in Advanced Technological Education (ATE). Initially funded in September of 1997 for three years, the then Northeast Center for Telecommunications Technologies joined ten other ATE Centers all funded by the NSF. Located on the campus of Springfield Technical Community College in Springfield, Massachusetts, NCTT's primary mission in its first three years of existence was to develop a seamless 2+2+2 high school to associates degree to baccalaureate telecommunications curricula and increase the number of telecommunications technologies associate degree programs in the New England and New York region. A three-year continuation grant was received by the Center in 2000 to provide funding through September of 2003. The first six years of the Center's operation as been documented elsewhere [1]. The Center applied for and received a four-year grant in 2003 to serve as an NSF ATE Resource Center until September of 2007. As a National Resource Center, NCTT has embarked upon the unique and ambitious course of developing a national network of regional partners that will participate collaboratively with NCTT to achieve its mission of providing appropriately skilled technicians and technologists for the telecommunications and ICT related fields.

This presentation will look at the process and challenges encountered by NCTT and its partners in the implementation of this first of a kind national collaboration that marks a next step in the evolution of the NSF's advanced technology education program as it enters its second decade of operation.

## II. The Beginnings of the Collaboration

During the sixth year of NSF funding, the leadership of NCTT begin to look ahead to its evolution from an ATE Center to a National Resource Center. The severe telecommunications industry downturn had drastically reduced the prospects of NCTT obtaining significant monetary resources from self-sustaining activities, state budget deficits had begun to take their toll on the Massachusetts higher education sector and STCC, and both information and telecommunications technologies were still evolving rapidly with an apparent continued convergence towards the newly coined, blended discipline of ICT. Furthermore, as NSF financial support had been shrinking in a by now, known manner, NCTT staffing had been reduced and the Co-PI's release time had also been reduced (as they returned to the classroom on a part-time basis). After much discussion and reflection, a grant application was submitted to the NSF for funding for an additional four years as an ATE National Resource Center. The proposal indicted that NCTT would continue many of its previous activities albeit at reduced levels. However, in a new initiative that had been considered for some time, NCTT would seek to form a national collaboration of regional partners that would carry on the work started by NCTT. This new initiative evolved from relationships developed with various community college faculty members that had participated in NCTT activities such as faculty summer workshops over the past six years. On numerous occasions, workshop participants had become engaged with the Center's activities and expressed a desire to somehow become associated with NCTT. This new proposal was further endorsed by NCTT's National Advisory Board and also encouraged by NSF ATE program officers. The NSF ATE program [2], while highly successful at producing new curriculum materials and innovative new technology programs, was felt to be lacking in national and even regional dissemination and adoption of these educational materials and products. The NSF unofficially endorsed NCTT's new concept in the belief that it might provide improved results in the attainment of this goal and at the same time leverage grant monies dedicated to this area of technology education.

Several of the prospective collaboration partners had either submitted NSF ATE project grant applications at NCTT's urging or already had received NSF funding before the formulation stages of NCTT's future mission. In most cases, the new partner community colleges were geographically dispersed around the nation and were already active leaders in ICT related technology education in their regions. In all cases, they desired to take leadership positions in the development of new telecommunications or ICT related programs within their local community college systems. With the subsequent award of a four year grant as a resource center, NCTT began the process of selecting its regional partners. The selection process included an application process with the necessary assurances of support from the school's top administration and a summary of the proposed activities that the prospective regional partner desired to become involved with. The first group of regional partners was chosen in the fall of 2003 and is listed here:

- Brookdale Community College, Lincroft, NJ
- Collin County Community College, Frisco, TX
- Cuyamaca Community College, El Cajun, CA
- Gateway Community College, North Haven, CT
- Midlands Technical College, Columbia, SC

There are plans to add additional regional partners in 2004 with preliminary discussion already occurring between NCTT and several potential partner community colleges in “uncovered” regions of the United States.

### III. NCTT Redefines Its Vision and Mission Statements

With its reduced staff, the leadership of NCTT felt that they would need assistance with the formation of the collaboration and indicated this to the NSF. The NSF encouraged NCTT to submit a supplementary grant for a year’s funding to hire a consultant (with the appropriate business skills) to assist in the process. The supplemental grant was approved and a local business consultant familiar with NCTT’s activities, the operation of community colleges, economic development, and possessing a telecommunications background was brought on board to facilitate the process. This business consultant has been invaluable to the NCTT team, most of whom have been working in the academic world for the majority of their professional careers and therefore do not bring a great deal of business expertise to the table. The first task undertaken by the consultant was to facilitate the development of new NCTT vision and mission statements. The necessity of this was three-fold. Besides the changing role of NCTT, that required a fresh look by the NCTT principle investigators of what NCTT wanted to do in its new role and how it wanted to be viewed by the outside world, it would be important in transmitting this message to the new regional partners and any potential regional partners that might be brought on in future years, and it would set the stage for the business-like climate that would be needed to manage this collaboration as it went forward. The new NCTT vision and mission statements are given here as a reference to the reader.

#### Vision:

*The NCTT organization will be a key national resource to all industry sectors for the development of and as a source for appropriately-skilled ICT (Information and Communication Technologies) technicians and technologists.*

#### Mission:

*Provide appropriately skilled technicians and technologists with a primary focus on Connecting Technologies<sup>1</sup> as workforce for ICT business, industry and ICT users.*

<sup>1</sup> “Connecting Technologies” as used by NCTT refers to all the network mediums, the hardware that interconnects these network mediums, the software that enables and manages the flow of all forms of traffic over these interconnected networks utilized by ICT-enabled industries, traditional and emerging, to conduct their core business and mission critical applications.

From these statements and other supporting documents, various goals of the NCTT organization were formulated and the strategies necessary to implement them were planned. As mentioned previously, the vision and mission statements are a way of articulating these ideas to ones customers, employees, and to the general public, and in NCTT’s specific case, to the new and future regional partners. It is critical that both NCTT and its regional partners take the time to re-examine or develop and align these statements.

### IV. Next Steps

The next steps taken by NCTT in the partnership formation consisted of numerous conference calls and several site visits to the nearest regional partners. After extended initial dialogue with

the new regional partners, it was decided that a face-to-face meeting of all the partnership participants would be appropriate, would give NCTT a chance to articulate its new vision and mission statements to the group, and allow for the discussion of the evolving collaboration at greater length. This meeting would allow all the players an opportunity to come together for the first time, give NCTT a chance to articulate its vision of the partnership, and to allow the regional partners to articulate their views of the partnership and their hopes for what it can achieve. The two and a half day meeting was held in mid-January with an agenda that allowed for an extended discussion of the broadening of NCTT's vision and mission, technology updates, regional partner program overviews, partner and NCTT resources, organizational issues, organizational communications, and initial plans for near and long term partnership goals that include the sustainability of the group. The meeting was lead by NCTT's PIs but there was ample time for partner interaction, discussion, and brainstorming by the entire group. There was extensive discussion by the meeting participants about the partnership dynamics, possible projects that could be pursued by the group, and the nature and type of projects that would be appropriate. The development of selected ICT skill standards, the morphing of "at-risk" legacy electronics programs into some form of ICT program, and the offering of new and innovative on-line degrees (e.g. wireless, security, etc) in selected areas received the most interest. The final day concluded with identification of action items, time frames, and future steps delineated by the group. It was decided that most future communication would be conducted via conference call, through the use of BlackBoard (a web based presentation and electronic communications platform), and additional meetings as needed. The partners will reassemble at NCTT during the NCTT Summer 2004 Workshop and will be joined by other prospective regional partners [3].

## V. The Future

It remains to be seen how successful this collaboration will be at achieving the rather ambitious goals it has laid out. There are many challenges to be overcome if it is to be successful and to continue to expand and evolve over the long term. These challenges include funding issues, personnel resources, a present lack of students, a continuing lack of industry support due to the present telecommunications economic environment, issues of national and regional visibility, competition from private businesses, process management issues (NCTT's responsibility), and last but most importantly the need for all the academic based players to become more entrepreneurial and business like in their relationships with industry and each other. This last challenge can be the most difficult since it involves casting community college faculty into unfamiliar roles that for some can be uncomfortable at best and doomed to failure at worst. The upside of the collaboration is unknown but it is felt that tremendous potential exists for the improvement of vitally needed telecommunications and ICT related education for business, industry, and the government (military) that will keep the United States competitive in the world wide market place and help to ensure the safety of its citizens. The participants of the first annual NCTT collaboration meeting all agreed that the group has many opportunities available to us afforded by our perceived new "critical mass", whether the timing is right and whether we can effectively act on these opportunities remains to be seen. At this point, there is a great deal of optimism for our new initiative, time will tell whether it is warranted or not.

References:

1. The National Center for Telecommunication Technologies: A Look Back and a Look Ahead, by Gary J. Mullett, Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition
2. <http://www.ehr.nsf.gov/EHR/DUE/>
3. [www.nctt.org](http://www.nctt.org)

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