

The Verizon Next Step Program: A Look Back and a Look Ahead

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I. Overview

The innovative Verizon NextStep Program is a unique industry/education collaboration that provides Verizon employees with the opportunity to earn an associate in applied science degree (A.A.S.) in telecommunications technology during their regular workweek. Started in the State of New York in 1995 by the then NYNEX Corporation, this progressive program that emphasizes employee soft skills was expanded to the New England states in 1996. Through extensive interaction between all New England stakeholders involved with this project, a baseline curriculum was developed that was similar but not exactly the same as the New York curriculum.

The first graduates of the NextStep program are now in the workplace, the NYNEX Corporation has since merged with Bell Atlantic and then become Verizon, the two different curricula have been morphed into a single curriculum and the sometimes contentious summer Faculty Institutes have been replaced by smaller curriculum specific gatherings. This paper will first look back at the sometimes fascinating events that helped to shape the program, the dynamics of faculty interaction, the role of the employee unions and corporation management, the difficulties encountered with the infusion of soft skills into the curricula, and the continuous fine-tuning of a curriculum for a rapidly changing technologic field. The paper will conclude with an examination of the present state of this unique industry/education program and an assessment of its impact upon the workplace and the faculty who have been involved in its implementation.

II. The Beginning

In early 1995, the NYNEX Corporation put out a request for quotation (RFQ) to New York colleges that would require the respondents to provide education to NYNEX employees that would lead to an associate in applied science (A.A.S.) degree in telecommunications technology. Specifically, the education would be provided in geographic locations that had a high density of Communications Workers of America (CWA) as employed by NYNEX. At the time, there were only a very few colleges in New York State that offered “telecommunications degrees” of which Hudson Valley Community College (HVCC) near Albany, NY was one. A bid response by the SUNY/CUNY systems was successful with HVCC as the lead college in the proposal. Initially, a total of nine other community college members of the SUNY/CUNY systems and New York Technical College were chosen on the basis of their location and whether or not they had a

legacy electronics program or something similar that could be transitioned into a corporate specific telecommunications program [1].

Dr. John Abeles, the Executive Director of NYNEX University, was the visionary on the corporation/management side of NYNEX that gave life to this idea and it was swiftly endorsed by the CWA on the union side of the fence. At the time, telecommunications was starting to become the newest technology buzzword and the Telecommunications Act of 1996 was only a short way off in the future. The management of NYNEX bought into the idea that a well-educated workforce that could deal with the newly emerging digital telecommunications transport technologies would be able to survive and thrive, for that matter, well into the new millennium. On the union side, the threat of job losses and the recognition that technology was undergoing a rapid transition was all that was needed to buy into the concept. However, there was more to the plan than just academic course work! Each student would be issued a laptop computer for the duration of their participation in the program and the curriculum would embrace the development of the so called worker “soft skills” that had been identified by the earlier SCANS report as indispensable by the knowledge worker of the future [2].

Logistically, the employee would report to the nearest participating college one day each week during the regular fall and spring semester for a total of eight semesters. At the end of the eight semesters, the employee would have earned 60 credit hours and have been credited with some on-the-job time to bring the program in-line with standard academic contact time/credit hour relationships. Furthermore, the laptop computer would be used with newly available simulation software to perform virtual electronics labs, create word documents, and provide electronic communication with fellow students and faculty to form “communities of learners” using Lotus Notes software. This was the same software used by the NYNEX Corporation for e-mail and other types of business functions. Indeed, the faculty involved with the program would also be issued a laptop computer and an e-mail address through NYNEX’s corporate intranet.

Under HVCC’s direction, an industry specific curriculum that contained legacy topics from electronics technology programs and four new generic telecommunications courses, as well as, the required general education courses, was put forth and accepted by the other institutions that would be involved in the delivery of the program. The curriculum consisted of the following courses: Technical Math I and II, Computer Applications, English I and II, Electrical Circuits, Electronics I and II, Digital I and II, Physics, Social Science, and Telecommunications I, II, III, and IV [1]. It was the desire of NYNEX to have the same uniform curriculum offered at each school for a variety of reasons and it also simplified the logistics of passing the new curriculum by the SUNY/CUNY system’s Academic Program Review authorities. With time available to develop the content of the telecommunications courses, the program was officially implemented for the first time during the fall of 1995 in New York State. Thus was born the NYNEX “Next Step Program”.

In the New England region, NYNEX employees belonged to a different union. Instead of the CWA, the employee union was the International Brotherhood of Electrical Workers (IBEW). The contracts of the two unions expired at different times but the IBEW was keenly interested in the Next Step Program and made it a bargaining demand that the company was willing to agree to

at the time. During the summer of 1995, Dr. Abeles began visiting potential lead schools in New England. Springfield Technical Community College (STCC) was on his short list due to the fact that the college catalog listed a Telecommunications Technology program. Ironically, this program was really a video production associate degree program that has since been renamed. At the time, STCC had three highly successful technical programs that were called the “Electronics Group”. These programs were: Computer Systems Engineering Technology, Electronic Systems Engineering Technology, and Laser Electro-Optics technology. Also, at the same time this author (the Electronics Group Department Chairperson at the time) had been preparing a pre-proposal to the National Science Foundation (NSF) for a large multiyear advanced technology education (ATE) project that intended to develop an associate degree curriculum in telecommunications and networking technology. I had started work on the development of this proposal very early in 1995 and had involved both educational and business and industry partners in the planning and organization of the proposal from the very beginning.

When Dr. Abeles visited the campus, the college president, the chief academic officer, members of the development office, and this author met with him and some of his staff. At the time, we believed that the meeting had been very productive for both parties since we learned more about the Next Step Program and they learned more about STCC and its capabilities. Shortly thereafter, an RFP for a seven million dollar program was issued by NYNEX to all 2- and 4-year colleges in New England. STCC successfully brought together a group of community colleges across the New England footprint, submitted a proposal on behalf of the “partner schools”, and was subsequently chosen to be the lead college for the New England version of the Next Step Program.

III. The First Meetings

By November of 1995, STCC had organized a two-day meeting of stakeholder faculty members and administrators from the seven partner schools and had begun the process of hiring an administrative staff to handle the Next Step Program. At this initial meeting, Dr. Abeles gave an inspirational opening speech about the program context, a representative from HVCC outlined the process that had been used to develop the New York curriculum, and a representative from NYNEX outlined how New England would proceed with curriculum development. Mixed into the presentations were introductions to the NYNEX “umbrella competencies”. STCC’s chief academic officer took an extremely active role in the process as the New England Next Step director and appointed STCC faculty members as “curriculum coordinators” for the various faculty groups represented (Electrical, Computer, Mathematics, and English) at the meeting. With New York’s curriculum as a guide, the groups met separately, NYNEX provided group facilitators to help the process along, and at the conclusion of the meeting the group leaders/curriculum coordinators reported out to the entire body the consensus of the various groups concerning their piece of the curriculum.

A few words about the group dynamics are appropriate here. The groups contained faculty from five different states that were total strangers before the start of the meeting. In the electronics area in particular, each faculty member taught in a slightly different program that conformed to different state regulations for the awarding of an associates degree (number of credits, general education requirements, etc.) and at the time none of the schools present offered associate

degrees in telecommunications. For these reasons and because of a perceived difference in faculty cultures, NYNEX provided the facilitators mentioned before. It was obviously felt that the task of coming up with a uniform curriculum for the New England region would take quite a bit of effort. To some extent, this was a valid assumption on NYNEX's part.

Early on, the fact that NYNEX desired to have a consistent curriculum across the entire NYNEX footprint (New York and New England) was articulated to the group. Although much progress was made in the curriculum development process, there was more work to be done and the stakeholders had to return to their respective campuses to report to their administrations about the process. Since there were many loose ends to wrap up and since the faculty from the New York schools needed to meet, the next step in this curriculum development process was to meet with the faculty from New York. To that end, a meeting at the NYNEX Learning Center in Marlboro, MA would be held in December of 1995 to start the process of unifying the curricula from New York and New England. The fun was about to begin!

In December of 1995, a three day New England/New York curriculum planning meeting was scheduled with faculty and administrators from the both the New England and New York Next Step Program schools converging upon the Learning Center. The meeting, which was guided by Dr. Abeles and members of his staff, consisted of "Ice Breaker" activities designed to allow the participants to get to know one another and then separate meetings of the New England and New York curriculum groups. At the conclusion of the separate curriculum meetings the New England and New York faculty were to hold joint meetings during which it was felt by NYNEX that they could iron out any differences that existed between the two curriculums. As it turned out, this was far from what actually happened. The New England curriculum committee insisted on retaining two courses in DC and AC circuit theory (New York had one combined course) and a different course sequencing than the New York curriculum. When the two groups met, a rather contentious meeting ensued fueled by the "heresy" of the New York program's single circuit theory course and some interesting cultural differences between upstate New York and other portions of the state! It was a very interesting meeting that concluded with the New York program retaining their curriculum and the New England program retaining theirs. The New York faculty were clearly frustrated by the fact that they already had a curriculum in place, "so why reinvent the wheel?", and the New England faculty were similarly frustrated by a lack of a clear understanding of the purpose of the Next Step program. NYNEX was somewhat frustrated by this turn of events but accepted the reality of what had happened. Further meetings of individual faculty groups were encouraged and a "Faculty Institute" for the entire program would be held the following June.

Since the program would be offered over a four-year time frame, there would be time to develop courses that only had a short description attached to them at this time. As it turned out, NYNEX would be patient with the process and recognized the fact that it would take time to bring about the uniform curriculum. With the December meeting concluded, New York offered the second semester of the Next Step Program in the spring of 1996 and New England offered its first semester.

The New England curriculum groups held several meetings during 1996 in an effort to educate

the faculty members about the telecommunications field and work on the curriculum itself. A Faculty Institute was hosted by STCC in June of 1996. The primary purpose of the institute was to work on the curriculum and during the meeting it was decided that the New England curriculum would conform to the New York curriculum by offering only a single circuit theory course. This decision did not come about easily and the faculty from legacy electronics programs were not very fond of the idea at all. Some even questioned the validity of the program in light of this decision that was pushed forward by the STCC curriculum coordinators. There was also much debate over the content of the other courses. But, overall, progress towards a consistent curriculum was being made. As fate would have it, a union work stoppage occurred just before the fall semester in New England and the Next Step program fall semester never happened! The program restarted in the spring of 1997 and now New England was a full year behind New York. The next Faculty Institute would again be held at STCC in June of 1997.

The Next Step Program Faculty Institutes had an additional purpose besides the fine-tuning of the curriculum. At an annual cost of approximately 100K [3], they were an opportunity for NYNEX to grow the desired culture that Abeles had originally envisioned. The faculty were exposed to the so-called umbrella competencies on a regular basis, they received instruction in Lotus Notes, learned about new technology, and were able to interact with fellow faculty from diverse locations and backgrounds. Workshops were held for instructors new to the program and the curriculum groups had expanded in number to cover all the curriculum areas. This was a new experience for most of the faculty involved and to some extent proved to reinvigorate many that had been teaching for a long time. The individual campus coordinators (the administrative arm of the Next Step Program) would attend the Institutes, as would union representatives and NYNEX administrators. Later institutes included numerous examples of “best practices” concerning the use of the umbrella competencies (the soft skills) in the teaching of various topics. At times, the institutes served as showcases to impress management with the progress of the program and how it was affecting the employees. It seemed that one of the few constants at the institutes was the debate over course content. Many of the legacy electronics instructors were unaware of the skills needed by the workers in the field and had a difficult time giving up their rigid views of what topics needed to be taught and to what depth. The theme of a corporate specific associate degree program had to be reiterated repeatedly.

During this same time period, this author had received a large NSF Advanced Technology Education (ATE) multiyear telecommunications project grant and STCC was awarded a large grant by the NSF to become an ATE Center of Excellence in telecommunications technologies (the Northeast Center for Telecommunications Technologies, NCTT) [4]. This author and others are positive that STCC’s role in the Next Step Program had a definite bearing upon the decision by the NSF to fund the Center. With these events as a backdrop, the role of faculty members from STCC as curriculum leaders was further enhanced and the New England colleges looked to STCC for guidance with their programs. As the New York program got closer to offering the telecommunications courses, the Next Step Program administration arranged for several three-day seminars that examined the newest technologies in the telecommunications field in an effort to bring the faculty up to speed. Additionally, NCTT started to offer annual summer workshops on telecommunications that were attend by faculty from many of the partner schools.

III. Up and Running

The next several Faculty Institutes (HVCC hosted the 1998 event and STCC the 1999 event) continued to fine-tune the curriculum and work on textbook and software adoption. Dr. Abeles had left NYNEX, which had now become Bell Atlantic, but the economy was strong and the Next Step Program was firmly entrenched. With most issues under reasonable control in the introductory circuits and electronics courses, the real curriculum challenges lay in the development of the telecommunications sequence. The electronics and the telecommunications faculty groups started to hold regular annual curriculum meetings at the Learning Center during the month of January. These meetings would allow for technical seminars about new technology and for discipline specific and cross-discipline meetings about the curriculum itself. By this time, the telecommunications group had more or less convinced the electronics group that the course content delivered in the early courses should be matched to and be responsive to the needs of telecommunications courses and the students in the Next Step program.

What about the other courses in the curriculum? Was the physics curriculum of the Next Step Program responsive to the needs of telecommunications? The answer to that question was a resounding no the first time physics was offered. Early in the development of the program, the telecommunications faculty gave the physics group a list of desired topics to be covered in the physics course. The physics faculty group proceeded to develop a curriculum that combined two standard physics courses into a single semester. The results were a disaster, the faculty taught the single course as they had always taught the two courses and simply ran out of time, never getting to the topics that telecommunications valued most. This problem was reminiscent of the battles experienced with the electric circuits course and the debate over one or two courses by the electrical/electronics faculty. At this point, the physics faculty group was invited to cross-discipline meetings with electronics and telecommunications to resolve this problem. The physics faculty continued to resist any changes and were clearly frustrated by their dilemma. One of their biggest problems was the lack of an appropriate textbook or curriculum materials that would increase the pace of the course to allow for coverage of the “back end” topics. After, numerous Faculty Institutes, workshops, curriculum meetings, demonstrations of new teaching materials, and arm-twisting the present physics curriculum is finally in a form agreeable to both the physics and telecommunications faculties. The ability to finally come to some closure on this issue probably has more to do with the development of more multimedia teaching aides (software, CD-ROMs, etc) and new teaching strategies than anything else. Curriculum problems like this occurred for other courses also with some courses undergoing extensive transformations from their original content. For instance, in keeping with the times, Digital Electronics II has become an A+ computer hardware and operating systems course instead of a microprocessor theory course. At each curriculum meeting, it is common for faculty to offer suggestions on how to improve a course or change/alter the course content to better meet industry needs. These suggestions often are the cause of lively and sometimes contentious debate especially when someone suggests a return to two DC/AC circuits courses!

To this point, this paper has addressed mostly course content curriculum issues and related anecdotal stories of the machinations that occurred to bring all the stakeholders on board with the curriculum. What about the umbrella competencies or the use of Lotus Notes? Today, most Next Step faculty are in agreement with the general principle that these soft skills (quality, customer

focus, teamwork, leadership, problem solving, and service delivery) are desirable, but it has been a challenge for most faculty to integrate these competencies into their courses. During the Faculty Institutes of 2000 (HVCC) and 2001 (STCC), increasing amounts of time were devoted to the demonstration of best practices of competency integration to Next Step faculty and corporate management. During the last Faculty Institute, in 2001, there were complaints by the faculty that between software training and best practices sessions there was not enough time to deal with curriculum issues! As for Lotus Notes (Notes), despite an early try at using the system, technical problems with security and the student's increasing use of the Internet has more or less foiled the widespread use of Notes. More on this topic later. By the way, agreement was finally reached on a change in course sequencing by the New York program to match that of New England. After being phased in for new incoming classes, the curriculum is now uniform across the New York and New England programs.

IV. The Present and the Future

Bell Atlantic has become Verizon (in 2000) and instead of a faculty institute, faculty curriculum group meetings were held at the Learning Center during the summer of 2002. The Next Step curriculum appears to have stabilized to a great extent with fewer and fewer changes being proposed each year. The electronics and telecommunications faculty groups met recently at the Learning Center (See Figure 1) and discussed some minor curriculum issues (new textbooks and software) but actually spent more time focusing on further integration of the competencies into the coursework of the program. During the summer of 2003, a "Faculty Conference" will be held at the Learning Center.



Figure 1. Next Step Electronics/Telecommunications faculty curriculum workshop at the Marlboro, MA Verizon Learning Center (January, 2003)

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At the last meeting, it was announced that Lotus Notes was “dead” as a vehicle to promote the long desired “communities of learners” envisioned by Dr. Abeles in 1995. Instead, “Blackboard”, an on-line electronic delivery system, will be used to promote this concept and serve as a database of information for both students and faculty in the future. Most of the faculty present thought that this approach had a more realistic chance of succeeding or at least being useful! Indeed, the 2003 summer faculty conference will focus on curriculum fine tuning, the use of Blackboard, and, as always, the integration of the soft skills into the classroom [5].

What about the future? The “telecomm boom” has become the “telecomm bomb”, the telecommunications industry is laying off workers. Verizon is included in the list of companies that have had to reduce their workforce. With this segment of the high tech economy in a severely depressed state, there is talk of difficult labor/management talks when the present labor contracts expire. The Next Step Program is a negotiable part of these labor contracts. Will it survive?

V. Next Step’s Impact

On the Company and the Employees

Today, there are approximately 1700 Verizon employees enrolled in the entire Next Step Program (approximately, 1100 in New York and 600 in New England). The New York program graduated its first class in 1999 and to date has graduated a total of 1062 employees. The New England program graduated its first class in 2000 and to date has graduated 421 employees [6]. This fact is certainly good news for Verizon since this portion of its workforce is gaining both technical and soft skills in an increasingly competitive and technically challenging environment. Will this be enough to position Verizon as a top player in the telecommunications service provider market? There have been many in the telecommunications arena that have predicted that the legacy telephone system will fall to the disruptive technology of the Internet and TCP/IP. Recently, the total number of installed lines in the telephone industry has started to decline (probably due to the popularity of wireless phones and broadband cable) [7]. Will Verizon be nimble enough to withstand this and other disruptive technologies that may appear in the future? Can they provide ADSL service beyond limited distances from the central office and therefore be a competitor to the high speed cable modem? Nobody knows the answers to these questions but certainly, they present significant challenges to Verizon and the survival of the Next Step Program. Amazingly enough, at an estimated annual cost to the Verizon Corporation of 25-30 million dollars, the graduates of the Next Step program still don’t have a new job title or job description. This issue has been a bone of contention between the employee unions and management but to this date it has not been resolved and doesn’t even seem to appear on management’s radar screen.

On the Community Colleges and their Faculty

On a more positive note, the implementation of the Next Step program occurred at a time when many legacy electronics programs across the New York and New England region had begun to struggle with declining enrollments. To say that the Verizon Next Step program has saved these programs from extinction would be an exaggeration. However, to say that the Next Step program has breathed new life into these programs and the faculty that have become involved with Next Step is much more realistic. In many cases, individual faculty have reinvented and rejuvenated themselves by coming up to speed with this new technology, learned new teaching techniques,

new software and software applications, and employed new technology in the classroom (laptop computer presentations, software simulations, etc.). The forum given faculty at the Next Step Faculty Institutes and curriculum specific meetings has allowed them a chance to interact with a diverse group of fellow faculty members and also to examine the state of technology and how it relates to a specific workplace. These are activities that don't normally present themselves to community college faculty. In my opinion, the impact of the Next Step Program on the faculty has been extremely positive and will continue to be so as new technology is introduced and utilized by the faculty and they become more comfortable introducing the "competencies" into all of their classes. If you are interested in learning more about the Next Step Program, visit the following web site: www.aboutnextstep.com .

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