REPORT

On the Proposed School Technology Settlement and
Independent National Educational Technology Foundation

In re: Microsoft Corp. Antitrust Litigation
MDL No. 1332 (Dist. Md.)

The appended report was developed in consultation with a panel of educators nationally recognized for expertise in educational technology. Panel members contributed to the report as co-authors and endorse its conclusions.

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Introduction

We are a group of educators who collectively have the goal of transforming K-12 education through appropriate integration of technology into school curricula. We represent a broad spectrum of educational leaders in science education, mathematics education, English education, social studies education, educational technology, and educational policy studies.

We are accustomed to thinking about educational technology policy on a national scale. For example, last fall we convened a National Educational Technology Leadership Retreat (NTLR) co-sponsored by the U.S. Department of Education that brought together the presidents, executive directors, and leaders of 17 national education associations to consider how teachers should be prepared to integrate technology in their teaching. We are also accustomed to considering how substantial resources can be used as a catalyst to bring about educational change – collectively we have directed grant projects and initiatives totaling over 100 million dollars. Therefore we are in a position to consider whether the proposed Microsoft Settlement and an associated independent national educational technology foundation, the eLearning Foundation, might benefit the nation’s schools and bring about useful change.

The critical question is whether or not the existing settlement is sufficient to benefit public school systems in a substantial and meaningful way. Against this context, we have considered two issues:

I. Are the resources provided through the proposed Settlement adequate to bring about significant benefit to the nation’s most disadvantaged schools?

II. Are the terms of the proposed Settlement structured in such a way to enable these resources to be employed effectively?

A National Educational Technology Foundation

A national educational technology foundation, the eLearning Foundation, is the centerpiece of the proposed Settlement. The eLearning Foundation is conceived as a source of independent, authoritative advice to schools, and will also guide the implementation of the proposed Settlement for distribution of resources (hardware, software, and support) to the nation’s most disadvantaged schools. The eLearning Foundation would be established with the following cash endowment:

a) $150 million for hardware, software, and other technology needs
b) $100 million in seed funding to attract $200 million in additional funding from external sources
c) $160 million in funds for technical support
d) $90 million for professional development and training
Depending on the needs and choices of eligible schools, funds received under Items (a)
and (b) above can be expended for any combination of hardware and software
acquisition, technical support (above the $160 million dedicated in item c for this
purpose), and professional development (above the $90 million dedicated in item d for
this purpose). See Amended Settlement Agreement at 20.

The question of whether an independent educational foundation with an endowment of
several hundred million dollars can benefit schools appears, on the face of it, to be
absurd. Significant educational accomplishments have been achieved for considerably
less. For example, the nation’s first statewide K-12 Internet system, Virginia’s Public
Education Network (PEN), was developed with an initial grant from IBM Academic
Information Systems (ACIS) of slightly more than one million dollars. Virginia’s PEN
linked all 2,000 of Virginia’s schools to the Internet, and provided “proof of concept” for
a model that was quickly adopted by other states such as the Texas Education Network
(TENET) and others.

It is clear that an independent national education foundation with an initial endowment of
several hundred million dollars would bring about substantial educational benefit to the
nation’s schools. The only remaining question, then, is whether the terms of the
Settlement are structured in such a manner as to permit this to transpire.

The first and most crucial question is whether the Foundation will be truly independent,
using the resources provided to work on behalf of the nation’s disadvantaged schools
without bias that will favor one educational solution over another. Under the Settlement
Agreement, the court will select the board members nominated by national educational
organizations and by parties to the suit. See Amended Settlement Agreement at 16.
Conflict of interest rules would prevent capture of the board by technology company
representatives. Id. Furthermore, the settlement agreement allows schools to make the
choice of hardware, operating system, and software best suited to their respective needs.
See Amended Settlement Agreement at 17. We believe that these safeguards are sufficient
to ensure requisite independence for the Foundation to do its work in an unbiased
manner. If the Foundation board does not execute its commission fairly and
appropriately, the Court has the oversight and authority to ensure that the Foundation
fulfills its mandate.

The eLearning Foundation will be established as a renewable resource. The Foundation
will attract additional resources if it is demonstrably effective, and that, combined with
interest from the initial endowment, should permit it to become a permanent and positive
influence in American education beyond the life of the settlement.

The Foundation will serve as a catalyst to address important national goals. The
President’s Committee of Advisors on Science and Technology identifies technological
expertise as the nation’s most important resource:

More than half of our growth in economic productivity and per capita income has
resulted from technological advances. Advanced technology products constitute the
single most important positive component of America’s trade balance (PCAST web
The responsibilities and functions of the Foundation, as outlined below, are designed to ensure that graduates of the nation’s schools, and especially graduates of the nation’s most disadvantaged schools, are prepared to enter this technological future. We can think of no higher priority for the nation.

**Foundation Activities and Responsibilities**

The Foundation members will guide activities to assure that the needs of the students in the affected schools are best met given available resources. Several options follow to illustrate the types of choices that would be available to schools for a comprehensive and effective educational program within the Foundation’s budget. The Foundation, of course, can expand these options to provide additional choices for schools depending upon need, future technical advances, and the judgment of the commission regarding best practices. There is no requirement that eligible schools take the entire package—some schools may need to fill particular gaps or to expand existing programs. However, the options listed below are part of a comprehensive, affordable package that provides support from the Foundation for the hardware and operating system options, technical support, applications software, professional development, and administration of the funds provided through the Foundation.

**Hardware & Operating System Options**

Schools will have myriad options for securing equipment, including combinations of the options listed below. The Foundation can provide additional options depending upon changes in technology over the course of the equipment grant program and the needs of schools. In many instances, the computers provided through the settlement will be used by schools to replace outdated or obsolete equipment. One feature of the settlement is to make one million computers available to eligible schools. However, if schools do not need or want this many computers, there is no requirement that they use Foundation support for this purpose. They could, as described below, choose to use funds primarily or exclusively for handheld devices or other technologies, professional development, or technical support.

**Option I – New Equipment**

This is one hardware option that schools could select. Under this option, the Foundation would provide one-third of the cost of a new computer or the equivalent in peripheral equipment.

**A. New Desktop Computers**

Buying in quantity, and taking into account price efficiencies that are anticipated by the start of the program, it is anticipated that the cost of new Macintosh or PC desktop computers will be approximately $525. This figure is based on consultation with professionals in the field; if the actual price at the time that the
Foundation implements the program is greater or less than this amount, the figures would be adjusted proportionally. Assuming this figure, eligible schools choosing to acquire new desktop computers would receive $175 from the Foundation for each machine acquired, and would contribute $350. New Macintosh computers include the Macintosh Operating System (OS). Schools that select new PCs would have a choice of either the Windows OS or Linux OS.

B. New Handheld Computers

Eligible schools will have the opportunity to acquire other kinds of leading-edge technologies if they so desire. For example, a number of school systems are exploring the use of handheld computers by students. Several handheld computers (Palm, PocketPC, etc.) can be acquired for the price of a single desktop computer. Eligible schools choosing to acquire new handheld computers would receive the same proportion of funding (1/3) for such acquisitions as for other new computers. At current prices, this should allow schools to acquire three to five handheld computers for every desktop computer that they might have acquired.

C. Educational Technology Peripherals

Eligible schools can also elect to acquire peripherals, such as digital microscopes, printers, projectors, scientific sensors, and new or emerging technologies that may become available throughout the project period. This option is provided to allow schools as much freedom of choice as possible to meet their individual needs. Eligible schools choosing to acquire new peripherals would receive the same proportion of funding (1/3) for such acquisitions as for other new equipment. At expected prices, a number of such peripherals could be substituted for the cost of a single desktop computer.

Option II – Refurbished Computers

Eligible schools can also elect to receive refurbished Macintosh or PC desktop computers. The estimated cost of a refurbished computer is $130. Schools choosing this option will receive $80 from the Foundation and will contribute $50 for each refurbished machine. Schools choosing refurbished Macintosh computers will receive the Mac OS at no additional cost to the school. (Consultation with professionals in the field indicates that the Mac OS license typically conveys with the machine when it is refurbished.) Schools choosing refurbished PCs can select either the Windows OS or Linux at no additional cost. (Microsoft has guaranteed that the appropriate version of the Windows OS will be made available to schools who select this option at no charge. Linux is open source software that is available to schools by download from the Internet at no charge.)
**Hardware Budgetary Scenarios**

Several scenarios can be constructed to estimate the likely cost to the Foundation depending upon the mix of various types of hardware selected by the schools. For illustration purposes, the scenarios below are based on the acquisition of one million desktop computers. Each of the scenarios compares favorably with the expected resources available to the Foundation.

If all schools select Option I (new equipment) for one million computers or equivalent over the course of five years, the cost to the Foundation will be $175 million. If all schools select Option II (refurbished computers) for one million computers, the cost will be $80 million. Given the different needs of schools, not all schools will select the same option. For example, because the out-of-pocket cost to a school to acquire a refurbished computer is approximately one quarter of that for a new computer, some schools might select this option in order to preserve resources for other uses.

If 80% of the schools choose Option I and 20% select Option II, the cost to the Foundation would be approximately $156 million. If 20% of the schools choose Option I, and 80% select Option II, the cost would be $99 million. These figures are upper and lower estimates of the anticipated funds that would be required of the Foundation for either scenario. This results in the following anticipated hardware commitments on the part of the Foundation.

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<tr>
<th>Hardware Costs</th>
<th>Lower</th>
<th>Upper</th>
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<tr>
<td>Hardware &amp; OS</td>
<td>$99,000,000</td>
<td>$156,000,000</td>
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As shown *infra* in the section titled “Comprehensive Cost Estimates” (p. 12) these hardware expenditures can be met by the Foundation’s budget as part of a package that also includes support, applications software (both Microsoft and non-Microsoft), and professional development.

**Support Options**

The Settlement provides a minimum of $160 million for support and directs the Foundation to invest in innovative programs. Eligible schools will have a number of different options for support. Several support options are listed below, but the Foundation can of course provide additional options depending upon the needs of schools. Since many states and districts already have a technical support program in place, in most cases the Foundation contribution will be incremental rather than addressing the full cost of technical support for the school.

Two of the support options make use of a model judged “exemplary” by the U.S. Department of Education to prepare students for a technological American future by involving them as an important component of technical solutions. The student-assisted support for technology (SAST) model is an important strategy that will be made available
as an option through the eLearning Foundation. (For convenience, the term “SAST” will be used as a generic term to refer to a variety of state and national programs that employ this model.) This model has the dual goals of providing vocational training for students while simultaneously providing technical and curricular support. This model is particularly economical for schools, and also provides students with life skills valued in the workplace.

The SAST model includes national programs such as the Gen-Y / SCI program, and state programs such as the Kentucky Student Technology Leadership Program (STLP), and the North Carolina Students Working to Advance Technology (SWAT) program.

In order to ensure the sustainability of support programs that are selected by the eligible schools, it is important that those schools begin contributing to the programs on a graduated basis toward the end of the settlement period. We base this conclusion on our observation that education programs in which a 100% outside funding commitment is given during a set time period, followed by a 100% withdrawal of such funds at the conclusion of the period, often leads to the program’s failure to continue in the long term.

**Support Option I – National SAST Plan**

States or schools choosing this option can participate in a national SAST program such as the Gen-Y / SCI program. The support funds in the Foundation would be sufficient to scale a program like Gen-Y/SCI to provide services to many thousands of eligible schools who may select this option during the five years, at an average cost of $2,000 per school per year.

The Gen-Y / SCI program was one of the first SAST-based programs employed in schools. The Gen-Y program allows students to work with teachers to provide support for curricular integration of technology. Students who successfully complete the Gen-Y program may be recommended for the Gen-SCI program, which provides assistance with school technical support. It is one of only two programs judged exemplary by the U.S. Department of Education in 2000. A letter to the Gen-Y / SCI director, Dennis Harper, informed him that,

> The Department of Education has designated your educational technology program as Exemplary. The Educational Technology Expert Panel completed its review of 134 programs and recommended to the Secretary of Education that two programs be designated as exemplary and five as promising. ... Reviewers judged the quality of the program, its educational significance, evidence of effectiveness, and its usefulness to others. (U.S. Department of Education, September 8, 2000)

The Gen-Y / SCI program is the only staff-development model judged exemplary through this review process. The program has been adopted by schools in 41 of the 50 states over the past seven years, in more than 500 schools with over 100,000 participating teachers. Many of these schools are in disadvantaged settings, such as rural areas where skilled technicians are often unavailable at any price. There is currently a waiting list of hundreds of schools to participate in the program.
Once it is operational, the Gen-Y / SCI program provides support services equivalent to .5 full-time technical support staff for an elementary school and 1 technical support person at a middle or high school. A description of the Gen-Y / SCI program is provided in Appendix D.

**Support Option II – State SAST Plan**

The national Gen-Y / SCI program has served as a catalyst for statewide SAST-based programs. After consultation with the Gen-Y / SCI’s director, the Kentucky school system implemented a similar student-based model, the Student Technology Leadership Program (STLP). The STLP program has now been implemented in 900 of approximately 1,400 Kentucky schools - see Appendix A (Letter, December 4, 2001, from Director of School Instructional Technology for the Kentucky Department of Education). The STLP model, in turn, is being adopted in pilot programs in Tennessee and Wisconsin.

The SAST support model is less expensive than a conventional business or school technical support model due to the contributions of students, and simultaneously provides technical education for those students. The state of Kentucky estimates the savings compared to a conventional support program to be up to $210,000 per district per year. The current cost to participate in the STLP program is $3,000 to $4,000 per school, which includes teacher stipends. Students in a single school routinely provide technology support services equal to one or more full-time paid staff. A state like Kentucky could use Foundation support funds to expand a SAST program to eligible schools in its state, and generate technical support valued far in excess of the funds used.

The Students Working to Advance Technology (SWAT) program is another SAST-based model. This program bears similarities to the Gen-Y / SCI and STLP programs, but was implemented by the state of North Carolina. A three-year independent evaluation of one SWAT project known as Education Future NOW in a North Carolina high school concluded as follows:

The provision of on-demand technology support and maintenance is one of the key components of the Education Future NOW model . . . . An evaluation of the student SWAT Teams found that the students performed specific technology tasks such as building web pages or producing videos, repaired computer hardware, served as network specialists, provided training, and troubleshooting hardware and software problems.

They assisted teachers by accomplishing specific computer tasks such as making graphics, in-class troubleshooting, teaching them the operation of computers and software, and providing support for teachers to attempt new ways of using technology.

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1 These data were obtained from phone interviews with officials from the Kentucky Department of Education, and are also displayed on the associated web site.
They helped students by teaching them how to use software and to solve technology problems both formally and informally in the Cyber Campus [an enhanced computer lab] and in other computer labs and classrooms and by being a student 'expert' who could be approached for help or advice.” Suarez, T. M., “Education Future NOW Final Evaluation Report, Year 3, 2000-2001” (draft), copyright Suarez and Associates (2001), pp. 32-34 (emphasis in original).

The SWAT model developed in North Carolina has subsequently been adopted in school districts in Texas, Virginia, and Illinois, among others. The coordinator of the Information Technology (IT) program in Forest Park High School in Prince William County, Virginia, describes the SWAT program that he directs in the following way:

Our school has 2,000 students and approximately 600 new and recycled computers connected to our local area network (LAN). I write this letter to provide information regarding the effectiveness of our Learn and Serve community service class in which Students Working to Advance Technology ("SWAT") program is a part of.

I understand that some parties to the case have questioned whether K-12 students can provide meaningful support for a school’s technology, training and infrastructure. Based on my 10 years of experience with just such a program at Forest Park High School and before that Hylton High School, I can say that the answer is unequivocally yes. The students in our SWAT program provide real, valuable technical and training support for our school on a daily basis, saving thousands of dollars that would otherwise be spent to hire technical staff. (Chuck Drake, Coordinator, Information Technology Program, Forest Park High School, December 6, 2001)

A description of the Forest Park High School SWAT program is provided in Appendix B.

On a per-school basis, the $ 160 million in minimum training funds provided by the Foundation equals $ 2000 per school, per year for five years. These funds could be “front-loaded” at the beginning of the five years to bear 100% of a school’s participation cost in a SAST program, with the school gradually assuming a greater percentage of the costs during the five years as the program proves its worth. Alternatively, for states that already have a SAST program in place, the funds could be used in combination with existing funds to expand the program to eligible schools.²

Support Option III – Coordinated Volunteer Plan

Another proven model for providing cost-effective technical support to schools is to draw on skilled adult volunteers from the local community who want to assist schools with technology support. One such program, TECH CORPS, has a six-year track record of successfully matching volunteers with schools in need. (See Appendix C, Letter, Karen Smith, Executive Director of TECH CORPS.) This program operates at no cost to the

² For example, conversations with the Kentucky STLP Coordinator, Elaine Harrison, indicated that Foundation funds of $ 2000 per eligible school (when combined with existing resources) would make it possible to extend STLP to all eligible schools in Kentucky.
school receiving the services, and estimates that it returns 3:1 value to schools for money invested in the programs. *Id.* The program director states:

“An investment in TECH CORPS of $10,000,000 over 5 years would grow, manage, and expand the strong statewide volunteer organizations within 30 states, serving 6,977 schools with 13,953 volunteers, donating 558,140 hours of time and talent. The $10 million investment over 5 years would yield technical expertise to schools valued at $30 million – a 3:1 return on investment.

Similarly, an investment in TECH CORPS of $20,000,000 over 5 years would grow, manage, and ensure strong statewide volunteer organizations in all 50 states, serving 13,953 schools with 27,907 volunteers donating 1,116,279 hours of time and talent. The $20 million investment over 5 years would yield technical expertise to schools valued at $60 million – again, a 3:1 return on investment.”

*Id (emphasis in original).* A description of the Tech Corps program is contained in Appendix C.

Thus, Foundation support of Tech Corps or a similar program would be a cost-effective addition to the support resources available to eligible schools.

**Support Option IV-State Conventional Plan**

Some states may wish to maintain a more conventional support model based solely on full-time adult technical support staff. The costs for such programs are higher, but states will have the option of determining the approaches that best meet their individual needs. Funds could be used to implement an SAST program if the state desires, or could simply be used to extend or defray the cost of the existing conventional support model. These programs will be supported at the same funding level as those described in the preceding sections.

States often give school districts the flexibility to implement different support models within the same state. Therefore it is likely that many states would have a mix of Support Options I through IV in different districts throughout the state.

**Support Budgetary Scenarios**

The Settlement provides for $160 million in support costs to Eligible schools payable to the Foundation upon demand, and we anticipate that the entire amount will be used. As noted above, this equals $2,000 per school per year for support for five years. It is anticipated that these support funds would complement, not replace, existing programs in the schools. As shown above, if these funds are deployed to innovative programs they would likely be able to reach all eligible schools and generate support value far in excess of $160 million. The intent would be to provide states and Eligible schools with maximum flexibility and choice.³

³ Note that if the $100 million in seed funding attracts external funding as anticipated, the amounts in this and all other categories could be increased. This $160 million figure, therefore, represents a minimum floor.
Professional Development and Training

The Settlement provides a minimum of $90 million for professional development. In order to maximize the impact of the funds, the Foundation, in consultation with educational technology and subject-matter experts and schools is empowered to develop training modules, on-line courses, CD-ROMS, video tapes, and other materials in conjunction with local and regional workshops. This effort will be coordinated with state departments of education.

There are programs in existence that demonstrate rich, cost effective training models for teachers. The Foundation’s mandate is to identify, encourage, and facilitate use of such innovative models. For example, the Seeing Math Telecommunications Project uses an on-line teacher professional development model. Designed by the Concord Consortium, the object of the project is to provide exemplary teacher professional development materials on the use of standards-based mathematics for elementary teachers, described in the following way:

Online video case studies can be made highly interactive by linking them to lesson plans, typical student work, relevant standards and assessments, background content, expert commentary, teacher reflection, and moderated online discussion groups. As appropriate to the topics, there will be links to relevant tools, simulations, and implementation guidance. At any point, the user can stop, replay, jump ahead, or dive into the rich surrounding content.

Online courses using case studies will be much more interactive than typical workshops that use case studies. The online teacher will be in charge, able to control the pace and depth of the experience. The privacy of the experience will permit teachers to acknowledge their content weaknesses and brush up on their understanding of content and technology. On the other hand, the online discussion areas will encourage collegiality and reflective sharing around focused, relevant issues.

To stimulate productive and intense dialog among teachers about improved mathematics teaching, the case studies will be used in moderated online, graduate-level mini-courses. To ensure that Seeing Math resources are well-utilized and integrated into local teacher professional development programs, the project will offer an online course for staff developers. This strategy will enable the project to provide personalized teacher professional development opportunities to a large number of teachers. [Concord Consortium]

The intent again would be to provide states and Eligible schools with maximum flexibility and choice. If the $100 million in seed funding attracts external funding as anticipated, the amounts in this and all other categories could be increased. This figure of $90 million, therefore, represents a minimum floor.
Software

Microsoft has agreed to make available its education-specific and productivity software titles to eligible schools at no cost to schools. Several of these titles are cross-platform (Macintosh Office and multiple Magic School Bus titles). However, many of the major subject-specific titles such as Geometer’s Sketchpad and Interactive Physics are not Microsoft titles. Such critical software is available in the marketplace from a variety of vendors. The Foundation can employ funds from the technology acquisition portion of its budget to enable schools to purchase such software at reduced or no cost.

It is anticipated that the Blue-Ribbon Commission will serve as a catalyst not only to acquire licenses of existing educational software for schools, but also to encourage development of appropriate academic software in needed areas. The Foundation may wish to consider aggregating the purchasing power of eligible schools to negotiate favorable rates for the most sought-after titles.

For example, in order to assist the nation’s disadvantaged schools, on December 6, 2001, Connectix agreed to make Virtual PC available to the eLearning Foundation for distribution to Eligible schools at a cost of $25 per license. Virtual PC costs $99 for a single copy, and $42 per copy for the deepest discounts made available to states purchasing thousands of copies for schools. Virtual PC is a software emulator that enables a Macintosh computer to run software written for Microsoft Windows. This product would enable schools to have access to the full range of application software titles without being required to purchase an Intel-compatible PC.

In a similar spirit, Key Curriculum Press indicated that it would make its award-winning (and widely used) mathematics program, Geometer’s Sketchpad, available to the Foundation for distribution to Eligible schools at a deep discount:

Key Curriculum Press would appreciate the opportunity to support the disadvantaged schools of America. We would be willing to sell or license either or both of our award winning software programs, The Geometer's Sketchpad and Fathom, Dynamics Statistics Software to any entity that is established with a goal of distributing computers and software to America's most disadvantaged schools. Key Curriculum Press is generally regarded as providing high quality and innovative mathematics materials for use in middle and high schools and colleges and universities. The Geometer's Sketchpad is one of the most successful and enduring educational programs available today. It is used in thousands of schools and colleges in this country and around the world. Our support would be in the form of a substantial discount from the usual selling price that we would make available to the responsible entity. In addition we would be available to provide professional development to help implement the programs in any of the schools that request our educational software.

[Joel A. Gingold, CFO, Key Curriculum Press, December 6, 2001]

The willingness of Connectix and Key Curriculum Press to discount their software for the benefit of the nation’s disadvantaged schools solely because of the promise of the eLearning Foundation suggests the power of a national advocate for these schools once the Foundation is actually established.
Software Budget Scenarios

The Foundation does not have a fixed budget for software acquisition. Given the likely funding scenarios, as explained in the following section the Foundation will have between $143 million and $351 million to fund (as eligible schools may desire) software acquisition, additional training (beyond the $90 million fixed for this purpose), additional support (beyond the $160 million allocated for this purpose), or some combination of these options.

Comprehensive Cost Estimates

A feature of the Settlement is to provide one million computers to the Eligible Schools over a five year period. As the preceding sections illustrate, depending upon the mix of new and refurbished equipment selected by the schools, the likely cost ranges between $99 million and $156 million. The Settlement commits a minimum of $160 million for support and $90 million for professional development and training over the same period. Therefore, the commitment of the Foundation for hardware, support, and professional development ranges from $349 million to $406 million.

The Foundation will be provided with an initial endowment of $400 million in cash contributed by Microsoft, plus an additional $100 million in seed funding to attract an additional $200 million in external funding. Informal conversations with directors of philanthropic organizations of national scope have led us to believe that the Foundation will be fully successful in utilizing the matching funds, and indeed that a greater amount of external matching funding is likely to be forthcoming, given the independence and resources of the eLearning Foundation.

Since the commitment of the foundation for hardware, support, and professional development ranges from $349 million to $406 million, these amounts can be deducted from the total endowment of the Foundation at various funding levels to ascertain the amount that would be available for software and discretionary funding. If it is conservatively estimated that only one-half of the seed funding attracts external funding, $50 million in seed funding would secure $100 million in external funds. We believe that this is a conservative estimate, but even in that case, the Foundation will have a total cash endowment of $550 million. An endowment of $700 million would be achieved if the $100 million in seed funding attracts the full $200 million in external funds.

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<th>Funding Level</th>
<th>Lower Estimate</th>
<th>Upper Estimate</th>
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<td>$550 million (fundraising 50% successful)</td>
<td>$144,000,000</td>
<td>$201,000,000</td>
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<tr>
<td>$700 million (fundraising 100% successful)</td>
<td>$294,000,000</td>
<td>$351,000,000</td>
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Note: The Foundation will, of course, have administrative and operating expenses. These costs may be paid from the interest on the $150 million that Microsoft is required to pay up-front. See Amended Settlement Agreement, p. 20. At a rate of four (4) percent, such interest should be $5 million or more in the first year.
The discretionary funds available after the commitments of Foundation are met can be used, as eligible schools request, for software acquisition; to increase the minimum levels of hardware, support, and professional development; or some combination of these.

**Total Cost of Ownership**

In this report we have focused on whether an independent national education foundation, funded with an initial endowment of several hundred million dollars, and guided by a panel of the nation’s educational experts, could substantially benefit the nation’s disadvantaged schools. We believe that the answer is self-evident. However, we have provided an analysis in the preceding sections to demonstrate that an endowment on this scale not only could but would be likely to provide substantial benefit to the nation’s schools.

Concerns have been raised about the *Total Cost of Ownership* (TCO) for support of computers in schools. Professor Mackie-Mason, an economist, has used elaborate theoretical constructs to suggest that schools will not be able to support or utilize computers provided to them, and that the Settlement agreement as a whole will fail. In the “Support” section above, we have provided concrete evidence that what Prof. Mackie-Mason says is “impossible,” is actually occurring: innovative programs, which this Settlement could sustain and support, are providing substantial support value to schools at costs within schools’ means.

The remainder of this section discusses the errors and omissions in Professor Mackie-Mason’s report on TCO. The analysis that follows was primarily undertaken by John Mergendoller, executive director of the Buck Institute of Education, an independent non-profit educational foundation. Dr. Mergendoller formerly served as director of Research and Evaluation for the Buck Institute, conducting studies on uses of educational technology in schools for institutions such as the Congressional Office of Technology Assessment (OTA).

**Response to Professor MacKie-Mason’s Total Cost of Ownership Analysis**

The cost of installing and maintaining a computer and providing training and support to teachers is an important issue to consider when evaluating the proposed settlement. We believe, however, that Professor MacKie-Mason's analysis of TCO is flawed, and that the actual TCO for computers distributed to schools by the proposed national foundation will be much less than he calculates. Moreover, we believe that his arguments show a certain naivety about the realities of computer technology integration in classroom practice and pedagogy. The issues he raises regarding teacher training and support are inaccurate and/or inappropriate for the following reasons:

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1. **TCO calculations used by Professor MacKie-Mason ignore the investment schools have already made in network infrastructure, computer and technology training, and district- and school-level support mechanisms.**

The TCO approach used by Professor MacKie-Mason and reflected in the studies upon which he relies does not provide an appropriate benchmark to assess the incremental cost in 2001 of adding better computers and more up-to-date software to existing technological and human infrastructures. For example, the most recent study cited by Professor MacKie-Mason was published by the Consortium for School Networking (COSN). The purpose of this publication, according to COSN is:

> to provide school administrators and technology directors with tools so that they can better estimate the total cost involved when they build a network of computers and wire their classrooms to the Internet, a concept known in the business world as Total Cost of Ownership.  

More generally, to support his argument, Professor MacKie-Mason cites in his Exhibit 12 a number of TCO studies conducted in the mid- or late-1990's to capture the costs of wiring schools to the Internet and with a Local Area Network. As such, the studies do not take into account the extant technological and human infrastructures found in schools at the current time. Throughout the nation, schools including most of the eligible schools have moved quickly to establish the technical and human infrastructures necessary to introduce computers into classroom instruction, as indicated by the steadily dropping student/computer ratio which was 39:1 in 1985 and was 6:1 in 1998. The same trend can be seen in the number of schools and classrooms with Internet access. The National Center for Education Statistics reports:

> Between fall 1994 and fall 1998, Internet access in public schools increased from 35 to 89 percent of schools.

This infrastructure build-out is not just characteristic of schools enrolling wealthier students. Looking only at schools enrolling 71% or more students eligible for free or reduced price lunch, we find that school Internet access has increased from 19% of schools in 1994 to 90% of schools in 1999.

It is now 2001. The percentage of schools with the human and technological infrastructure in place to accommodate and support additional computers is

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unquestionably greater than it was in 1999, two years ago. According to Market Data Retrieval, "network connectivity is now almost universally available in American classrooms."\(^9\) Nor have schools serving impoverished students been left out.

84% of schools in districts with over 30% poverty-level enrollments [use local area networks]. Though a gap still exists [between schools that serve more wealthy and more impoverished students], it is closing, possibly reflecting the impact of E-rate funding on school networking. Schools serving the highest percentage of poor students have received full funding for their requests for internal connections over the past three years, helping them to extend networking connections throughout their buildings.\(^10\)

Calculating TCO as if all schools were starting from scratch is not accurate or appropriate. Most schools will incur costs to integrate additional computers into existing human and technological infrastructures, but these will be incremental costs: adding the 50\(^{th}\) computer does not cost as much as installing the first computer. At the same time, for some schools, future TCO per computer may actually go down as a result of the settlement. This would occur, for example, if schools replace Apple IIe computers with new Macintoshes, or if they replace 386 and 486 computers with Pentium-class machines. Similarly, if a school elects to upgrade and standardize the operating systems (say, from a mix of Windows 95 and Windows 98 operating systems to a consistent Windows 2000 operating system), this would also have a beneficial impact on TCO because the burdens of supporting multiple, outdated operating systems are higher than those of supporting a single, modern operating system. Professor MacKie-Mason ignores these beneficial effects of the settlement in his analysis.

2. The assumptions used in TCO model used in Exhibit 11 by Professor MacKie-Mason to calculate TCO do not reflect customary technological support practices and overstate their actual costs.

On page 34 of Professor MacKie-Mason's analysis\(^11\), he refers to Exhibit 11 which presents "broad categories of costs to TCO in education, according to Microsoft...." On page 38 he refers in footnote 77 to "My study [of TCO] described in Exhibit 13," which explains the assumptions and calculations made in Exhibit 11. Several examples will demonstrate Professor MacKie-Mason's theoretical TCO analysis is out of step with support realities in public schools (even wealthy ones).

Professor MacKie-Mason has based his analysis on "an average school with 700 students, 33 staff members, 27 classrooms and two other networked rooms."\(^12\) He includes the cost of "District-County technical support" under the heading of "Staff Development and Support." By this, I assume Professor MacKie-Mason means a staff member in the central school district or county office that configures networks, issues passwords, and

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\(^10\) Ibid., p. 68.

\(^11\) MacKie-Mason, op. cit.

\(^12\) MacKie-Mason, Exhibit 13.
takes care of infrastructure issues, but is not present at the school site. Professor MacKie-Mason costs District-County technical support at 0.3 full-time equivalent staff members ("FTE") or $15,000 per year. Figuring 220 working days a year, this translates to 66 days allocated to address the needs of one school, 33 teachers, and 700 students. Looked at another way, that is 0.3 FTE per school, 0.009 FTE per teacher, and 0.0004 FTE per student.

While this level of support might be desirable, it certainly is not common practice, even in wealthier schools. As a point of comparison, the Marin County Office of Education Information Services Department in the San Francisco Bay Area serves schools in the California county with the highest per-capita income in the state. Staff members provide technical and network support for 72 schools staffed by approximately 1,700 teachers, and enrolling over 26,000 students. There are 6 FTE on staff. If one were to divide support responsibilities equally across staff members, each individual would serve approximately 12 schools, and approximately 4333 students. This works out to 0.08 FTE per school, .004 FTE per teacher, and 0.0002 FTE per student. Thus, Professor MacKie-Mason allocates nearly three times as much district/county level support per school, and approximately twice as much district/county level support per teacher and student, than the California county with the highest per capita income in the state.

Prof. Mackie-Mason also includes an item labeled "School site technical support." The time devoted to this is 0.5 FTE or $25,000 per year, or $ 35.71 per student. The best, relatively current data available reporting technology support cost per student comes from a 1998 national study. The authors report that the national average per student to support the salary and benefits of a technology coordinator is $11.30. Once more, what may be desirable in the abstract does not reflect the everyday reality of American schools.

A final point: as we noted above in item one, TCO analyses typically assume nothing is in place before the analysis was conducted. This is the case with the analysis provided by Professor MacKie-Mason in Exhibit 11. He includes $74,000 (over four years) for Telecommunications infrastructure, $78,300 (over four years) for furniture, and $31,900 (over four years) for networked laser printers. At this point, with a national student/computer ratio of 6:1 or less, one can expect that most schools already have a telecommunications infrastructure, laser printers, and computer furniture.

Again, the basic problem is that Professor MacKie-Mason's study does not attempt to quantify the incremental costs to eligible schools of adding better hardware to their networks than what they already had in place, given that (as noted by Market Data Retrieval) there has been significant progress on network infrastructure, especially in poorer schools, in the years leading up to 2001. A better way to analyze the TCO issue is

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14 Ibid., Table 1.
15 6:1 ratio is based on 1998 data.
to compare the settlement's support resources to the amounts that schools are already spending and to the value of the hardware to be provided, to determine whether the settlement will help schools improve their relative spending levels for training and support. This analysis appears in the following section.

3. The money allocated for technology support by the eLearning Foundation is actually greater as a percentage of hardware spending than the technology support expenditures of American schools.

As noted earlier in this paper, the proposed settlement provides schools with several different options for obtaining computers. Schools may receive new computers, refurbished computers, or some combination of new and refurbished computers. For the purposes of the current discussion, we will assume that the aggregate number of computers distributed matches one of the two distribution scenarios described earlier in this paper.

- **Scenario 1:** Schools receive 800,000 new computers at a total combined cost (to the schools and the Foundation) of $525 each ($420M) and 200,000 refurbished computers at a total combined cost of $130 each ($260M), for a total hardware cost of $680M. 

- **Scenario 2:** Schools receive 200,000 new computers at a total combined cost of $525 each ($105M) and 800,000 refurbished computers at a total combined cost of $130 each ($104M), for a total hardware cost of $209,000,000.

In addition, the settlement provides $160 million for technical support, and $90 million for professional development and training.

For Scenario 1, the hardware to service/support ratio is 4.25, and the hardware to professional development/training ratio is 7.56. For Scenario 2, the hardware to service/support ratio is 1.31, and the hardware to professional development and training is 2.32.

How does this compare to the way schools are actually spending their technology dollars? For the 400 school districts studied by IDC and reported in the 2001 Consortium for School Networking (COSN) publication regarding TCO, the average ratio of hardware to both service/support expenditures and to professional development/training expenditures was 9.17. These ratios, however, are not optimum. As COSN notes:

> The real-world experience of school districts, however, often doesn't match what is considered to be the ideal... In the first years of [computer] deployment, the largest share of the technology budget is normally devoted to hardware in the

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16 Under the settlement the schools would bear only a portion of this hardware cost, of course, but to accurately compare the support spending ratio with TCO benchmarks it is necessary to use the total hardware cost.

form of networks and new computers. As time passes, a greater proportion of the budget should shift to staff development and support.\footnote{Ibid.}

Lower ratios (e.g., closer to zero) indicate that less money is proportionally allocated to hardware purchases, and more money is proportionally allocated to service/support and software. Lower ratios indicate a district is shifting “a greater proportion of the budget . . . to staff development and support.”

The ratio of hardware to service/support and the ratio of hardware to training that accompanies the proposed settlement’s two distribution scenarios described above are clearly more favorable to COSN's goal of emphasizing staff development and support, than is typical practice for American schools. Under Scenario 1, the ratio of hardware to service/support is 4.25, and the ratio of hardware to professional development/training is 7.56. Both of these ratios are lower (i.e., better) than reported by COSN: in other words, the settlement agreement moves schools’ spending in the “right” direction. Under Scenario 2, the ratio of hardware to service/support is 1.31, and the ratio of hardware to professional development/training is 2.32, an even stronger shift toward the optimum.

When the costs of computers under the settlement are compared to the settlement resources allocated for support and training, it is clear that the settlement will assist eligible schools to move in the direction of spending more money on support and training relative to hardware cost, and thus enable them to move closer to the optimal relationship between hardware, software, and support training advocated by COSN and others.

4. \textit{The Student-Assisted Support for Technology Model (SAST) and the proposed eLearning Foundation address the very support concerns raised by Professor MacKie-Mason.}

We agree with Professor MacKie-Mason that teachers need two kinds of support: technological support (networks, wires, printer cartridges, etc.) and instructional support (integrating computers into classroom lessons, managing groups of students, etc.). One strength of the combined SAST/eLearning Foundation model is that it allows for a variety of structures providing different types of support. Districts and schools are not left alone to find a way to use their support money on local resources.\footnote{This is a key point for rural districts and impoverished schools that may find it difficult to find traditional local resources that can provide the technical and instructional support needed.}

The eLearning Foundation will be an extremely effective mechanism for instructional support because it can marshal national support programs and resource sharing, provide and disseminate examples of best practices, and create support programs that meet specific instructional and curricular needs. It can, in partnership with national content-area organizations\footnote{Such organizations could include the National Council of Teachers of Mathematics, the National Council of Teachers of English, the National Science Teachers’ Association, or others.} and school administration organizations or by itself, provide
instructional and curricular mentoring and support opportunities that would be beyond the reach of all but the most wealthy districts.

At the same time, SAST programs mobilize powerful resources for technological support available in all schools -- students -- to attend to wires, software installation, network maintenance, and other technical support issues. These programs also confer a collateral benefit by providing students with an additional educational experience and training program that will prepare them for the workplace and profitable careers. Prof. Mackie-Mason does not include any of these benefits in his analysis, but instead assumes that schools will rely on a more-expensive support model similar to the corporate environment.

In sum, we do not find Professor MacKie-Mason's arguments correct or compelling. They ignore the investments schools have already made in technological infrastructure, teacher training, and support mechanisms. They overstate the actual costs of supporting teachers as they integrate computer technology into their instruction. They underestimate the positive impact of the settlement on teacher support and professional development. They ignore the very real contribution to education that would be made by the combined strategy of Student Assisted Support for Technology (SAST) and the eLearning Foundation.

We believe the proposed remedy blends school autonomy and free choice, with national momentum and targeted support provided by a prominent, innovative and nonpartisan foundation. We believe schools and students will benefit greatly from this approach.

**Summary**

As a panel of educators with recognized national expertise in the area of educational technology, we have addressed two questions in the analysis contained in this report: “Are the resources provided through the proposed Settlement adequate to bring about significant benefit to the nation’s most disadvantaged schools?” and “Are the terms of the Settlement structured in such a way as to enable these resources to be employed effectively?” The answer to both questions is affirmative.

At the beginning of his presidency, John Kennedy captured the nation's imagination with a bold vision of the future: *This nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth.* Kennedy foretold innovations that would impact all Americans in the coming age:

> The growth of our science and education will be enriched by new knowledge of our universe and environment, by new techniques of learning and mapping and observation, by new tools and computers for industry, medicine, the home as well as the school. [Kennedy, Rice University, September 12, 1962]

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21 Such organizations could include the National Association of Elementary School Principals, the National Association of Secondary School Principals, the National School Boards Association, or others.
This quest harnessed the nation’s scientific and engineering expertise, producing benefits ranging from Teflon to microcircuitry. Today’s life-saving artificial heart is a direct descendent of the miniaturization that emerged from this initiative.

The opportunity to create an independent national technology foundation to address the digital divide in the nation’s most disadvantaged schools represents an unparalleled opportunity for America. We should address the digital divide and assure that all Americans are technologically capable for the same reasons as we undertook Kennedy’s challenge – because it yielded great benefits to the nation, and because it was the right thing to do.
Appendix A

Letter from Director of School Instructional Technology for the Kentucky Department of Education
December 4, 2001

To whom it may concern:

As the director of School Instructional Technology for the Kentucky Department of Education, I am responsible for assisting all Kentucky students, teachers, and administrators as they use technology to improve teaching and learning. I am writing to express our support for the emphasis on student support for school technology systems in the proposed settlement of the Microsoft case.

In 1990, the Kentucky General Assembly enacted the most sweeping package of school reform legislation in the nation. Since that time, Kentucky has worked tirelessly to implement the reforms envisioned by that group of leaders. Included in their vision, was the use of modern technology as a leverage point for educational reform.

The original 1992 Kentucky Master Plan for Educational Technology sets forth a clear vision of technology being used to empower teachers and students in the pursuit of a world class education for Kentuckians. http://www.kde.state.ky.us/oet/sits/planning/masterplan/masterplan.asp

One of the stated KETS objectives is “To prepare a highly trained Kentucky workforce for adding a new industrial development dimension. This will be accomplished by preparation of Kentucky’s children to work effectively in the information age.” The most effective strategy to accomplish this objective is to establish active Student Technology Leadership Programs (STLP) in each school. General STLP information can be found at http://www.kde.state.ky.us/oet/customer/stlp/default.asp.

In the eight years since STLP began, we have received many testimonials as to the effectiveness of the program in engaging students in real-world learning. STLP now exists in over 900 of Kentucky’s 1400 schools, and there are even chapters in a few other states and countries. But our primary goal is to reach children in every one of Kentucky’s schools, regardless of geography or economic status. We have reports of improved attendance among STLP participants, entrepreneurial businesses created by STLP members, and services provided directly to schools and communities. In one particular example in Appalachia, Pike County, KY students began a help desk service to support the technology network in that large school district. Because of the professionalism and effectiveness of those students, eastern Kentucky was selected as the site of Sykes Enterprises, one of the world’s largest
providers of customer support. If Kentucky is to participate in the New Economy, STLP must produce similar opportunities across the Commonwealth.

Although we believe the eyewitness accounts and anecdotes about STLP providing powerful opportunities for students, we are also seeking a more objective review of the program. We have contracted with the CAN Corporation of Washington, DC to conduct an analysis of what the outcomes are for participants in STLP and what the essential criteria for success are. Within a few months, we should have the final results of this study to share with you. We expect these results to be positive enough that we will be able to make a case for providing dollars to schools to support STLP activities and projects and to pay stipends to their teacher leaders.

The other valuable aspect of STLP is the low cost of technical support provided to schools by students. In many school districts, students are managing networks, installing hardware and software, conducting training for both teachers and for other students, and operating help desks. For an adult employee to provide these services, the cost would be prohibitive. In addition, they are building their resumes and preparing for further education on the job market.

If the proposed Foundation becomes a reality, Kentucky would benefit from the ability to use funds to support STLP in all of our qualifying schools. Only a few thousand dollars per year per school will cover the costs of student Projects and a stipend for the extra time teacher leaders devote to STLP activities. These funds will support the preparation of Kentucky students for the 21st Century job market.

Sincerely,

Lydia Wells Sledge
Director
School Instructional Technology
Kentucky Department of Education
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502 / 564-7168
Appendix B

Letter Describing the Effect of the
Students Working to Assist Technology (SWAT) Program

To: Prof. Glen Bull
University of Virginia
Curry School of Education

Re: Microsoft Corp. Antitrust Litigation, MDL 1332

Dear Prof. Bull:

I am the Coordinator of the Information Technology Specialty Program (IT Program) at Forest Park High School in Prince William County, Virginia. Our school has 2,000 students and approximately 600 new and recycled computers connected to our local area network (LAN). I write this letter to provide information regarding the effectiveness of our Learn and Serve community service class in which Students Working to Advance Technology ("SWAT") program is a part of.

I understand that some parties to the case have questioned whether K-12 students can provide meaningful support for a school's technology, training and infrastructure. Based on my 10 years of experience with just such a program at Forest Park High School and before that Hylton High School, I can say that the answer is unequivocally yes. The students in our SWAT program provide real, valuable technical and training support for our school on a daily basis, saving thousands of dollars that would otherwise be spent to hire technical staff.

The SWAT team in our school provides the first wave of response to troubleshoot non-working computers, peripherals, and network connections. As a direct result of the assistance provided by the SWAT team, Forest Park High School has been able to cut its paid staff of network administrators from two full-time positions to one, saving approximately $35,000 dollars this year.

The SWAT teams have and do set up computer labs in a networked environment. Given a number of palettes of donated Pentium I class computers, our SWAT students have been able to create many labs full of computers with 64 to 128 MB of RAM, CD-ROM, network interface cards (NIC) and Office software cable of running MS Word and PowerPoint. Students are capable of configuring these machines to access our network and the Internet. To date, we have distributed 4 complete labs each with 20 or more computers to two elementary and two middle schools. We have placed 4 computers in many of our classrooms at Forest Park High School. The cost of these machines would be in excess of 25,000 dollars if bought used. All of these computers are capable of performing computer-based lessons, collaborative projects, and Internet research.
Approximately one and a half years ago Forest Park was near completion and was ready to be outfitted with 500 new Gateway computers that needed to be installed and connected to our network. Unisys had been contracted to do the unpacking, installation and removal of the boxes for $75 per computer, but due to a mix-up in the purchase order, they did not show up to complete the work. Our SWAT students were able to set up and install every single computer within a short time, and we received a cash credit from the vendor for $37,500.00 as a result.

Based on the success of our SWAT program, I can unequivocally say that students in a program like SWAT are more than capable of providing substantial technical assistance in their schools. The hands-on training and work these students do is very rewarding and has created an atmosphere of collaboration, confidence building and sense of worth. Our program is now being piloted in five middle schools in Prince William County this year. I therefore wholeheartedly support any effort, such as the proposed settlement of the Microsoft litigation that funds the creation and expansion of programs like SWAT in underprivileged schools.

If you have any questions or seek photographs or other supporting documents, please feel free to contact me.

Very truly yours,

Chuck Drake
Coordinator, Information Technology Program

Forest Park High School
15721 Spriggs Rd
Woodbridge, VA 22193
Phone: 703-583-3200
Fax: 703-583-6867
Appendix C

Letter Describing the TECH CORPS Program

www.techcorps.org

Background

TECH CORPS is the leading national nonprofit mobilizing technology volunteers into schools. Founded in 1995 by Gary Beach, Senior Vice President of International Data Group and publisher of CIO magazine, TECH CORPS challenges Americans to help build and support a technology infrastructure in our nation’s schools.

Over the past several years, schools across the United States have made significant progress in expanding access to technology for teachers and students. Despite this progress in gaining access, schools still face huge challenges in effectively using these new technologies. U.S. schools have a critical need to develop a “human infrastructure” that can support the physical infrastructure that is being built. TECH CORPS helps provide this by recruiting, placing and supporting volunteers from the technology community who advise and assist schools in the introduction and integration of new technologies.

The vision of TECH CORPS is simple: to provide K-12 students nationwide – public and private, urban/suburban and rural – with access to the most technologically advanced education possible, ensuring that they have the skills needed to compete in tomorrow’s workforce. TECH CORPS achieves this through:

♦ People: Recruiting, placing and supporting volunteers from the technology community who assist schools with the introduction and use of new technologies
♦ Programs: Bringing additional technology resources to schools and communities through local and national projects
♦ Partners: Increasing educational technology resources through partnerships with education, business, government and community.

As a non-profit organization, TECH CORPS is supported entirely by corporate, foundation, and personal contributions – all of our services and programs are provided free of charge to schools. The percentage of dollars going directly to programs is in excess of 80%. Led by the sponsorship of Compaq Computer Corporation, Cisco Systems, and a host of technology, telecommunications, and consumer companies at the national and state levels, TECH CORPS offers schools a multi-vendor, vendor-neutral support system for delivering valuable services and resources to schools.

A national Board of Directors and a national staff (located in Massachusetts) oversee and lead TECH CORPS. The majority of our activities are implemented through state offices established to provide the critical grassroots connections.
The New Opportunity

The time for individual and private sector support of K-12 schools’ new technologies has never been more critical – and the Microsoft Class Action Settlement has the potential for making a major difference in the technology of our nation’s most disadvantaged schools. However, to reach full impact, several things must be taken into consideration:

1. **Long-term Effectiveness**: The goal is not just to get hardware and software to the schools -- the goal is to have the hardware and software used effectively in the classrooms as tools to advance teaching and learning. History has proven that if technology contributions are made without the human infrastructure within the schools to support them, the opportunity for achieving maximum impact is lost – and the schools targeted by the Settlement Agreement are frequently the ones most in need of developing this critical infrastructure. One solution: empowered and managed local IT volunteers from multiple technology companies who can keep equipment running, train teachers to use it, and basically add to the school’s infrastructure a cost-effective, sustainable technical support and training network – a local safety net of support.

2. **Vendor Neutrality**: The same local volunteers mentioned above, coming from a variety of technology and telecommunications companies, bring an important multi-vendor – yet vendor-neutral – perspective to the technology work done in schools. This perspective, if provided to schools participating in the Settlement, can help schools make technology decisions based on what is best for those schools and their overall technology plans.

3. **Sustainability**: Maximum, sustainable impact – impact that lives beyond the terms of the Settlement or the life of the donated technology – is achievable only through an ongoing commitment from many partners. Settlement resources can and should be used to foster a process of sustainable participation and commitment from individuals and companies in the local community who will be there long after the 5-year life of the Settlement.

Because their presence directly addresses the needs cited above, IT volunteers can be a valuable component in ensuring that the Settlement reaches its maximum potential. Through an expanded replication of what TECH CORPS is already successfully doing at local, state, and regional levels throughout the country, we are uniquely positioned to:

♦ Conduct a nationwide call for IT volunteers;
♦ Equip these volunteers with training and tools to help them support school technologies;
♦ Provide the coordination through which schools and volunteers can connect – both virtually and in person;
♦ Manage the process so that maximum results are achieved.

**Increasing the Impact of the Settlement**

TECH CORPS’ six-year track record has been characterized by multi-vendor support, strong local success supporting educational leaders, and a proven process of turning the time and talent of information technology volunteers into training and tech support for K-12 schools.

Currently, TECH CORPS’ Managed Volunteer Program operates in 29 states with combined state and national revenues of roughly $1,500,000. Depending on the level of funding within
each state office, activities range from localized to statewide programs. This year, we estimate
that we will deploy some 6,000 IT volunteers into 1,500 schools for a total of nearly 100,000
volunteer hours from IT professionals, yielding roughly $5 million in value to schools. Our
continued efforts are to sustain and build on the benefits and cost-savings demonstrated by our
volunteers, and to replicate these managed volunteers on a broader scale and into schools that
need them the most.

Utilizing the proven process we have developed through six years of operation, we believe
that our network of volunteers, if sufficiently expanded, supported and managed, could
significantly increase the educational impact of the contributions made to schools through the
Class Action Settlement.

Based on our experiences:

- An investment in TECH CORPS of $10,000,000 over 5 years would grow, manage, and
  expand the strong statewide volunteer organizations within 30 states, serving 6,977
  schools with 13,953 volunteers, donating 558,140 hours of time and talent. The $10
  million investment over 5 years would yield technical expertise to schools valued at $30
  million – a 3:1 return on investment.

- Similarly, an investment in TECH CORPS of $20,000,000 over 5 years would grow,
  manage, and ensure strong statewide volunteer organizations in all 50 states, serving
  13,953 schools with 27,907 volunteers donating 1,116,279 hours of time and talent.
  The $20 million investment over 5 years would yield technical expertise to schools
  valued at $60 million – again, a 3:1 return on investment.

Note: In addition to the in-person volunteers, TECH CORPS’ online programs, webTeacher™
(an Internet tutorial for teachers) and techs4schools™ (online tech support for teachers by IT
volunteers), extend TECH CORPS’ support to schools, even into areas without local volunteers.

Tony Amato, Superintendent of Hartford Public Schools and Board member of TECH
CORPS, says, “School systems throughout the nation desperately need the volunteers and
resources TECH CORPS provides – and underserved districts need them the most. In order to be
successful, school technology programs must have community support and participation. Our
school system yields tremendous benefit from partnering with TECH CORPS.”

If our education system is to harness the full power of the technology being placed at their
doorsteps through the Microsoft Class Action Settlement, then we must bring to bear the power of
human intervention – locally empowered, vendor neutral individuals who can support and sustain
the school’s technology work. IT professionals serving as volunteers represent that power for
our schools.

The comments in this document reflect concerns and opportunities that relate to the
fundamental mission of TECH CORPS and do not address or endorse provisions of the
Settlement that are beyond the scope of TECH CORPS.

Karen Smith
Executive Director
TECH CORPS
Appendix D

Description of the Gen-Y / SCI Support Program

The national Gen-Y / SCI approach to student-focused technical support focuses primarily on building student skills, providing technical support, and partnering students with their teachers to create technology-infused lessons, while creating a national “network” of teachers and students with these similar goals. The responsibilities for the program are allocated as follows:

- School provides a teacher (or staff member) for each school who can commit one class period per day to organize schedules and facilitate. The students typically work independently throughout the day working on projects at various times.

- The program provides content and material, as well as the initial training for teachers, and ongoing support through a database, on-line forums, and a national toll-free help line. The Settlement would provide resources to help schools cover this cost. All replacement parts, hardware, and tools are provided by the school.

- Participation in the program, and attainment of project goals, does not require additional hardware/software beyond what a school might typically have - the focus is on content and supporting existing infrastructure and maximizing cost-efficiency within the school.

- Schools create a self-sustaining technical support environment through the program.

The backbone of the Gen-Y model is an 18-week course for secondary school students. Units within this course teach students the technical skills (software support, basic troubleshooting, general hardware support and maintenance) they need to help their teachers infuse technology into the curriculum, as well as educational skills such as the components of a lesson plan and state and local academic standards.

This 18-week (one semester) course teaches students in grades 6-12 the technology, collaboration, and project development skills necessary to assist their teacher with technology-based lesson planning during the regular school day. An elementary version of Generation www.Y, targeting students in grade levels 4 and 5, extends the one semester class over an entire school year.

After students have completed the Gen-Y program, they are eligible for the Gen-SCI program. This program encompasses technical topics such as networking and programming, allowing students to provide technical support within their schools. The Gen-SCI program was designed primarily for students and teachers at the secondary level. Gen-SCI students, in turn, visit associated elementary schools as one component of the program to provide technical support in those locations. The goal of this program is to develop life long learning skills in addition to maintenance of the technical infrastructure in schools supported.