

## **Broadband USA Applications Database**

**Applicant Name:** NETWORK FOUNDATION TECHNOLOGIE

**Project Title:** A Sustainable Online Broadcast Network Connecting High Schools to their Local Communities

**Project Type:** Sustainable Broadband Adoption

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### **Executive Summary**

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A statement of the problem: This proposal presents a unique and innovative approach for enabling high schools and other community anchor institutions to more effectively connect to core their constituencies. It promotes effective utilization of existing broadband infrastructure while encouraging the further expansion of broadband services, both improving broadband speeds and increasing the number of Internet users, organically by building demand for such services. The US is falling behind in both per capita and per household Internet broadband penetration. According to a WebSiteOptimization.com article dated January 2010, Point Topic reported that US broadband penetration by household had dropped to 25th in the world, with 28.9% of households connected (<http://www.websiteoptimization.com/bw/1001/>). Despite these bleak statistics, it is also true that almost all US home Internet connections are broadband in nature (94.5% according to Nielson in November 2009 as reported in the same article) and that in terms of the total number of broadband connections the US still leads the world. An Organization for Economic Cooperation and Development (OECD) June 2009 report indicates the US had over 81 million broadband subscribers at that time compared to Japan's 31 million (<http://www.oecd.org>). While the vast majority of proposals to the Broadband Technology Opportunities Program (BTOP) will almost certainly address improving physical Internet infrastructure and connecting more people to the Internet at higher speeds (which this applicant applauds), this proposal takes the somewhat different approach of looking to better utilize existing infrastructure while promoting demand for additional infrastructure. This proposal is therefore synergistic with other BTOP efforts, as this project will act as a force multiplier, providing greater utilization not only of existing infrastructure but also of infrastructure upgrades funded by BTOP. Although large numbers of US schools have broadband connections, as do between 1/4 and 1/3 of all US households, very few of these schools have the equipment and expertise necessary to capture and broadcast audio video content to sizable online audiences. Furthermore the speed of most available high school broadband Internet connections is insufficient to deliver content to large numbers of viewers. Finally, these schools simply don't have the financial resources to purchase bandwidth from traditional Content Delivery Networks (CDN's) to deliver their programming. This is unfortunate as these schools generate a great deal of content that is of interest to their local communities. School functions such as commencement; plays, concerts, recitals and other artistic endeavors; sporting events such as football, basketball, and baseball ' all attract incredible interest in their communities. Once in place, such an online broadcasting system could be used for other functions such as delivering distance learning classes, summer programs, teacher training, and many other worthy programs. These systems could

also be used by other non-profits as is demonstrated by our letters of support from organizations such as the Robinson Film Center and the Space Foundation. Overall approach to addressing the need: We address the issues that have thus far prevented schools from effectively utilizing broadband to broadcast online by (1) providing cameras and production / distribution equipment to schools, training to their faculty, staff, and students, and providing ongoing technical support to assist in broadcast operations; (2) utilizing our company's patented distributed broadcast technology to overcome the schools' bandwidth bottlenecks by employing the computers of the viewers watching a school's broadcast to help share that broadcast with other viewers; and (3) establishing a solid business model that generates ongoing revenue to the schools (to pay for production costs, equipment replacement, and other worthy projects) and to the company (to expand the program to additional high schools). Given funding of this proposal, the applicant will be able to launch a nationwide effort to enable 5% of the nation's high schools (approximately 2,000 schools) to broadcast online. Each school will be provided (free of charge) a complete online 'production and distribution studio' in a box. Where schools do not have appropriate A/V capture and recording technology, the company will supply them with a compatible camera and necessary connectors. In order to ensure that the high schools are able to effectively utilize the equipment provided to them, training and support will be provided (again free of charge). Finally, during broadcasts company personnel will be available to assist any high schools have problems broadcasting their content. The production and online distribution equipment mentioned above will incorporate a patented distributed broadcast technology developed by the company. This technology enables smaller organizations to simply and cost effectively broadcast audio and video content online to large audiences at a fraction of the cost inherent in traditional Content Delivery Network (CDN) based online broadcasting. Essentially, the only costs to the schools adopting our broadcast solution will be a residential quality broadband Internet connection. Areas to be served: The project is national in scope, connecting high schools across the nation to students, teachers, parents, alumni, and other interested individuals. During the two year funding period the applicant commits to providing its online broadcasting solution to 2,000 high schools (representing approximately 5% of the nation's 40,000 or so total high schools). Qualifications of the applicant: Network Foundation Technologies is uniquely qualified to successfully implement the project outlined in this proposal and more importantly, to sustain it beyond the Federal funding period. The company has been actively broadcasting online events for customers since 2005 and has ongoing broadcast relationships with national sporting leagues such as the AFL (Arena Football League) and PBR (Professional Bull Riders). We have delivered many thousands of broadcasts to over a million viewers. In addition, in conjunction with Cisco Systems, we have conducted a successful yearlong pilot project with Wilson High School located in Reading Pennsylvania to provide them with online broadcast services. Financially the company is sound. In Q4 2009 the company completed its second major round of private equity financing, bringing the total raised to date by the Company to \$8.3M. The company has received a number of highly competitively Small Business Innovation Research (SBIR) grants from the National Science Foundation (NSF) totaling over \$1.16M. Income from advertising and fee for service contracts, while still modest, is showing impressive and continuous improvement year over year. The company has 'done its homework' to prepare for this proposal, including a yearlong pilot project and the building of coalitions of interested parties. As evidenced by the accompanying letters, this proposal enjoys widespread support. There is support from school boards and individual high schools, both urban and rural, spread across the US '

from California to Ohio to Louisiana to Pennsylvania. There is support from regional and national advertisers, including Marsh Supermarkets of Indiana and Carhartt, a national clothing brand, both of which have partnered with our company to sponsor online broadcasts of high school sports. Finally, we illustrate the level of bipartisan support this proposal has attracted from local, state, and federal government officials and agencies by letters of support from US Senator Mary Landrieu, Louisiana State Senators and Representatives, and several city mayors. Jobs to be saved or created: We conservatively estimate that 300 FTE (Full Time Equivalent) jobs will be created by funding this proposal. These jobs will be sustained and, in fact, we expect the number of jobs to increase in the out years due to the projects unique approach to sustainability. Overall cost of the proposed project: This project is projected to cost \$14,912,600 over 24 months. The applicant is requesting \$10,392,600 in federal funds and will match this amount with \$4,520,000. In other words, the company is providing a match equal to 30.3% of the total project costs. The company's match will consist of both in-cash and in-kind components, with \$1,020,000 in cash and \$3,500,000 in kind. The bulk of the in-kind contribution is in the form of a contribution of our distributed broadcast technology to the project. Developed at a cost of over \$9.5M and without which the project could not be implemented, the value of incorporating this technology into the project is conservatively accounted for as \$3,500,000.