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TECHNOLOGY
SERVING HUMANITY

Statement of Jim Fruchterman

CEO/Founder, Benetech

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"Innovation in America: The Role of Technology"

Introduction

Committee Chairman Goodlatte, Subcommittee Chairman Coble and Ranking Member Watt, and members of the subcommittee, thank you for the opportunity to speak to you today.

I am Jim Fruchterman, CEO and Founder of Benetech, one of Silicon Valley's leading technology nonprofits. We operate just like a regular for-profit software company, with software developers, product managers and user support professionals, but our focus is on addressing important social problems where the market today is failing. As someone who was involved in the founding of seven for-profit high tech companies in Silicon Valley (and only five of them failed!), I understand well how much financial return there needs to be in order for a new enterprise to garner venture capital investment. In the social sector, there are so many opportunities to apply technology for good that the private sector traditionally hasn't, or won't, pursue – usually because they aren't quite profitable enough. But, we at Benetech believe that technology and innovation for good should still be pursued. So much of the nonprofit sector is about handling information, and information technology excels at improving the handling of information and reducing costs. Society desperately needs technology applied to these issues, even if they only break even financially.

Benetech is not a single-issue organization: our goal is to see that the best technology gets applied to social needs where the standard off-the-shelf technologies aren't good enough. We don't need a word processor designed for human rights groups, or a spreadsheet made for schools. However, there is usually a software need in every field of endeavor that's unique to that field. That's the market failure gap we explore.

We don't want to deliver the same solution in perpetuity. When we start a new project, we always devise at least three successful exits within five to ten years. If somebody else solves the problem well, there's no need for us to duplicate their work, even if we might be slightly better.

Let me give you some examples of how we use innovative technology for social good. Benetech has been one of the leading providers of software for the human rights movement. We make the Martus open source software for collecting and analyzing information about human rights abuses. Martus has strong security built in, making it difficult for repressive governments to spy on activists documenting violations. We've just received major funding from the Department of State to scale up the mobile version of Martus to offer the same kind of security on smartphones.

We also work with scientists to get the numbers right in large-scale human rights conflicts. At the beginning of this year, the first accurate numbers started coming out on how many people were dying in the Syrian civil conflict: that was a report written by Benetech. Benetech also worked with truth commissions on getting their numbers right, and helped develop key testimony in the genocide trial of General Rios Montt in Guatemala. We're not a human rights group, we're the geeks that help human rights groups do their work better and more securely.

We also developed the Miradi project management software for conservation projects. Imagine business project management 101 wrapped in terms that a field biologist is comfortable with, designed with the best practices of the field in mind.

We have a Benetech Labs, where we engage in conversations with potential partners to develop new tech solutions. This month, we're actively exploring writing software to help American dairy farmers manage their sustainability commitments to their customers, the big food companies. We're also in Latin America talking about helping the people who run community water systems about how to get clean water to more people more effectively. Many of these Labs ideas won't turn into full scale projects, but many of them will. We get asked to get involved in easily a hundred new projects a year. I strongly believe that the need is there for more Benetechs, in order to ensure that more of society benefits from the incredibly effective engine of technology creation we have in Silicon Valley and around the United States in countless communities.

The Benetech team comes out of the high tech industry. Many of our senior staff members have been entrepreneurs and founders of regular for-profit high tech companies. We build our work on strong foundations laid down by other people and companies, whether it's the open source ecosystem of the Internet, or proprietary software or content. We don't create solutions from scratch: our innovation is adapting existing raw technology to meet the needs of the users in the social sector. We call this building the last "social mile." We depend on an intellectual property system that works and is friendly to innovation. Concepts like fair use, open source and open content make our work much easier, since they reduce the transaction costs for less lucrative uses of intellectual property. And, we frequently depend on the good will of companies and rights holders to provide us with free or inexpensive access to the assets that they control.

We need balanced intellectual property regimes that allow for socially beneficial applications, while allowing industry to make money. Silicon Valley has gotten very good at figuring out ways to make

money while giving away the core product: these approaches have exciting analogs in the social sector.

Bookshare

Our Bookshare initiative, which is the world's largest online library for people with disabilities like blindness and dyslexia that interfere with reading print, is a great example of this innovation ecosystem in action. About ten years ago, we had an idea for blowing up the traditional library for the blind, and recreating it using the then-emerging technology of ebooks and crowd-sourcing. We began with our members scanning books for each other, and many of our books still come from our volunteers. We also used digital text files (much like a web page) that we can deliver electronically and that can use high quality voice synthesis, large format print, or digital Braille, depending on the needs of the reader.

The legal underpinning of our work is of course the purview of this committee. We relied on two copyright exceptions to make this new nonprofit enterprise feasible: Section 121, also known as the Chafee Amendment in honor of then-Senator Chafee, who introduced this exception in 1996, and Section 107, fair use. Section 121 allows authorized nonprofit entities, such as Bookshare, whose primary mission is to serve people with disabilities, to create accessible versions of copyrighted books without the need to request permission from publishers and then distribute them exclusively to people with qualifying disabilities. Section 107, the fair use exception, has been important since the founding of Bookshare, and has continued relevance as we look to the future of our work.

Rather than springing this idea on the publishers and authors as a surprise when we launched Bookshare, we reached out to them first. A year in advance of our launch, I addressed the Copyright Committee of the Association of American Publishers. We made commitments to upholding the social bargain implicit in the Chafee Amendment: help people with disabilities, but don't interfere with the normal commercial process of selling books. We committed to not enlarging the franchise of who qualified for Bookshare, by using the same criteria used by Learning Ally (then Recording for the Blind & Dyslexic) to ensure that we provided accessible books only to people with bona fide disabilities that truly interfered with reading.

We next brought the Science Fiction and Fantasy Writers of America on board by committing to be against illegal copying of books and to authors' ability to review the quality of their works on Bookshare. By smoothing the way with publishers and authors, we had the space to launch a completely new approach to solving an important social issue: ensuring that people with disabilities have access to the books they need for education, employment and full inclusion in society.

The result? Bookshare revolutionized the field of accessible educational materials as we rapidly became the nation's (and the world's) largest online library dedicated to helping people with print disabilities. Today, we serve more than a quarter million American student members through funding from the U.S. Department of Education, Office of Special Education Programs. American

students get this access to educational material for free, thanks to this funding. And, it's far, far cheaper to scan a given book once, proofread it, and then have it be accessible to all Americans with qualifying disabilities. This is in stark contrast to the status quo before Bookshare, where only a tiny fraction of the needed books were available in accessible form, and often the same book was painstakingly recreated over and over again by different educators at different schools, by parents and by students themselves.

Schools are legally required under Section 504 of the Rehabilitation Act and the Individuals with Disabilities Education Act (IDEA) to provide these students with accessible educational materials. These students are almost always receiving special education services of some kind. While tens of thousands of our members are blind or visually impaired, the majority of our members are dyslexic. We also serve people who are unable to interact effectively with printed books because of a physical disability, such as cerebral palsy, a spinal cord injury or traumatic brain injury. Returning veterans with disabilities that diminish their capacity to read print is a key population that we are actively working to support. We want to make sure they still have the opportunity to pursue higher educational opportunities.

We currently have more than 200,000 books in the ever-increasing Bookshare library. A major driver behind this accomplishment and our ability to deliver a book at 1/15 of the cost of the traditional method of creating accessible books was the development of an eco-system of socially responsible publishers who have given us direct digital versions of their books. Over half of the books in our collection have been provided directly to Bookshare by publishers voluntarily in high quality digital formats. It's an outstanding act of corporate social responsibility. The Chafee Amendment terms provided a floor set of provisions that made these negotiations feasible: it is an indispensable safety net for accessibility.

Having the most in-demand books and textbooks solves only half the challenge. We also have an entire array of assistive technology tools for turning our ebooks into something our members can effectively perceive. We want students to have equal access to this content, in their preferred mode for reading. There are probably over fifty different products that serve our students, thanks to an open interface we provide to any maker of assistive software or hardware. Bookshare itself provides free software on PCs and Macs, as well as an open source reader for Android phones and tablets. One of our users who is logged into our website can start reading any book immediately through their web browser. There are a couple of best-selling applications for Apple's iPhones and iPads: one we created and one that an individual programmer developed that's terrific. For students whose families can't afford a PC or smartphone, it's possible to download our books as MP3 audio files, since just about every teenager has an inexpensive MP3 player. Plus, we support dozens of other products like Braille displays, low vision devices and dedicated players for people who are blind or dyslexic.

Copyright and Bookshare

The Section 121 exception has been crucial for us. It made Bookshare possible and continues to guide our work. It was written broadly enough that we could innovate and help solve the social problem we set out to solve. That flexibility allowed for creativity, which wouldn't have been there if the legislation had specified the four-track audio tape technology that was in use at the time of Chafee Amendment in 1996 (and is only now being phased out).

We also extensively leverage fair use, Section 107. It allowed for the creation of the scanned copies that were originally used to create Bookshare. We had a member who is blind who contributed 3,000 scanned books to us at the start. It wasn't legal for him to distribute those books to other people who are blind, but he was able to have his own library created by his personal efforts and those of his family, and that is a textbook case of fair use.

We are also creating new solutions to new problems. The great thing about ebooks is that the text at the core is increasingly accessible. However, more and more important content in these books are now delivered as images and graphics, not text. We've been operating an R&D center, called the DIAGRAM (Digital Image and Graphic Resources for Accessible Materials) Center, which brings the accessibility, special education and textbook publishing industry together around the challenge of making images accessible. We want to lower the cost of making an image accessible by at least a factor of ten. This is especially critical for science and math books, for STEM textbooks. In a current digital math book, all of the equations are delivered as images of formulas, not as text. We have to turn these inaccessible images into machine-readable information to ensure that students have equal access to the careers of the future. And, it's almost certain that these efforts to make image accessibility far less costly will be based on the provisions of fair use.

Challenges and Opportunities

I am extremely optimistic about the opportunity to solve problems like accessibility through innovative applications of technology. However, I don't want to understate the challenges we face. We have a major textbook publisher that has regularly threatened us, our peer libraries and the assistive technology industry to keep students with dyslexia from being served under the Chafee Amendment. These threats have a chilling effect on accessibility, as some states make restrictive policies in reaction, denying many thousands of severely dyslexic students access to the books they need.

We have the ironic effects of digital rights management locking out the most likely customers who most need ebooks, people with disabilities. We're more than a decade into ebooks, and technological protection measures (TPMs) still stop people who are blind from using ebooks they purchase. The TPMs are too rigid to know the difference between a person wanting to make an illegal copy of an ebook, or a person wanting to access that book via text-to-speech or Braille. When the Kindle was released with a rudimentary ability to read books aloud, questions of rights led to many titles being soundproofed, where the speech was silenced. The transition of ebooks is also a giant challenge to libraries, with some publishers declining to provide electronic versions of their

books to libraries. The traditional role of libraries as a resource for the person too poor to purchase books, or who wishes to look briefly at ten books necessary for research purposes is increasingly under threat.

And, the accessibility of new content and technology is an afterthought at best. While the past few years have seen the explosion of online courseware and new educational technologies, the opportunities for the inclusion of people with disabilities inherent in these innovations has been ignored. Even with laws mandating the accessibility of content and technology in the field of education and more broadly, we continually experience those "oops" moments. Oh, we forgot about students with disabilities in our product aimed at K-12 schools or students. Oops, we just released the Kindle Fire and forgot about accessibility again. These new digital books and products are going to be far more valuable than print books, with their ability to allow for interactivity with the content and with other users – people with disabilities must not be left behind once again.

This casual attitude towards accessibility is a real problem, because the true solution to the problem of accessibility is universal design. Most of the features in digital books that are absolute requirements for people with disabilities are amazingly valuable to everybody else. We believe that as content is born digital, it should simultaneously be born accessible. Because we've done such a good job under the exception of making books available to our users as a specialized library, the big fight now is for people with disabilities to be able to buy accessible books online. They should be the same books that everybody else buys electronically. Bookshare's long term goal is to go from being the primary source of ebooks for our users with disabilities, to being like a regular library, so that our users enjoy the same privileges as their non-disabled peers. Most users would rather simply buy the same books through the same channels as everybody else and have them work for everybody. As part of our Born Accessible campaign, we've begun the process of creating new tools and processes to allow publishers and others in the authoring stream to include accessibility from the inception point of their content. We're getting great responses from publishers, especially when they realize we truly want them to succeed in selling more books to disadvantaged communities.

However, we need safety net provisions like fair use and the Chafee Amendment to ensure that people with disabilities don't suffer unduly because their needs get overlooked yet again.

The Marrakesh Treaty

The United States often leads the way in so many technology and policy areas. One great example was the Marrakesh Treaty to Facilitate Access to Published Works for Persons who are Blind, Visually Impaired, or otherwise Print Disabled that just concluded in June. It makes domestic copyright exceptions modeled after the Chafee Amendment a global norm for signatory countries. Plus, it eases import and export of accessible copies by organizations such as Bookshare. The Treaty should help Americans with disabilities access far more diverse content in English and other languages, reduce the amount of duplicative work being done in separate countries, and, most dramatically, greatly improve access for people with disabilities in developing countries that have not had a legal structure to deliver accessible materials until now.

I want to acknowledge the favorable role played by the United States delegation, thanks to reflecting the balance between rights holders and consumers. We were glad to be able to work with our partners in industry in striking a balanced treaty that upholds that same social bargain we honored in setting up Bookshare: helping people with disabilities without making a significant impact on the commercial markets for books.

Specific Legislative proposals

The Chafee Amendment

We think that Chafee works very well. Its main defects are its reliance on the 1931 Act for a definition of disability, and its approach to people with severe dyslexia, which is incredibly out of date. Even though Learning Ally (formerly Recording for the Blind and Dyslexic) was at the table when Chafee was negotiated, the antiquated "organic dysfunction" language around reading disabilities is a concept that appears nowhere else and needs to be updated. The Treaty uses a more modern approach to disability, which is the functional approach pioneered in the Americans with Disability Act. Because balance is important, we don't think the copyright exception should be enlarged in terms of serving more people. We think it just needs to be clarified to reflect the status quo of Chafee as it is operated by the two largest libraries serving the educational needs of students with disabilities. The 2011 Report of the Advisory Commission on Accessible Instructional Materials in Postsecondary Education for Students with Disabilities recommended that Chafee should remain narrow, effectively serving 1-2% of all students (note: I served on this Commission).

The Digital Millennium Copyright Act

I touched on the irony of digital rights management locking out the most likely customers for ebooks. As an authorized entity, Benetech has closely followed the Section 1201 proceedings under the Digital Millennium Copyright Act. The most recent determination by the Librarian of Congress allows an authorized entity to "unlock" ebooks for the benefit of people with disabilities. While we're likely to conduct a pilot on a limited number of books, but this is not the way to solve this problem. We need to get of rid of dumb TPMs that lock out customers with disabilities.

But, it highlights how much activity that has traditionally been legal is hard to do in a world of Digital Rights Management, Technological Protection Measures and licenses that forbid you from doing things that would otherwise be allowed in a printed book world. Of course, the recent cellphone unlocking controversy is just another one of these issues. We hope that Congress would make circumvention of DRM for legitimate purposes, not related to the making of illegal copies, more clearly legal.

Conclusions

Intellectual property laws, at their best, can encourage technological advances, reward creativity and bring benefits to society. Practical and creative innovators, like Benetech, need space to operate to ensure those benefits reach those people who are often most in need of new solutions, but are

often least able to afford them. And new technology and new operational models are needed to do far more good with the same or fewer resources.

To make this possible, we must keep the balance in copyright. We need to defend fair use as a laboratory for creativity. And we can't use moral panics and wild claims of economic damages to constrain innovation in advance. We have a good track record of figuring out how to make money for stakeholders while helping consumers and society, and we can continue this trend. With the leverage of technology, and the foundation provided by well though out intellectual property laws — and a lot of common sense — we can inspire economic growth AND social good.