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HOW TO CLOSE AMERICA'S DIGITAL EQUITY GAPS: TOWARD A DIGITAL FUTURES FOUNDATION

A Concept Note

Michael A. Calabrese & Lester M. Salamon

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INTRODUCTION

America's digital ecosystem suffers from a serious set of imbalances. A vast digital divide denies internet access to tens of millions of our residents. More generally, our national approach in this field has emphasized the construction of faster and faster internet connections while downplaying or ignoring investments in public-purpose applications. Hence, personal video games and digital entertainment are ubiquitous, while innovative applications for telehealth, education, government services, and other advanced uses lag badly behind.

Underlying these outcomes is the fact that the public airwaves, now the critical pipelines for wireless communication, are routinely sold to private companies through multi-billion dollar auctions, effectively privatizing the air. Not surprisingly, the resulting privatized mobile networks end up producing a predictable result: profitable private-sector services are advantaged, but crucial public purposes are neglected, giving rise to a yawning digital equity gap. In economist John Kenneth Galbraith's words we are thus, in the digital field, as in so many others, "*privately rich but publicly poor.*" Digital access and opportunity are plentiful in urban and affluent communities, but grossly limited in less lucrative rural and low-income ones. Video games and other profitable applications proliferate, while critical public-service applications, tools, and training remain grossly under-resourced.

These digital equity imbalances have long been recognized, but the COVID-19 crisis has thrown them into sharp relief and added urgency to their elimination. As a recent ***New York Times* editorial** noted, "schooling, jobs, government services, medical care, and child care that once were performed in person have been turned over to the web, exposing a deep rift between the broadband haves and have-nots," highlighting the need to address the serious lags in the development and dissemination of the software needed to make these public-purpose applications more effective and accessible.

Fortunately, however, market realities have opened a potential path to overcoming these imbalances and achieving the needed change. Like land in the agricultural era and energy in the industrial era, the **public airwaves** have become the key driver of wealth creation in the current digital era. Overall consumption of mobile data on smartphones, laptops, and other devices is projected to continue growing at a compound annual rate of roughly 30 percent. And as the Internet of Things (IoT) begins connecting and monitoring almost every device and system in homes, offices, factories, and even public places, exponentially more wireless bandwidth will be needed to accommodate the data traffic.

What makes this particularly consequential is that all the really useful spectrum frequencies are already occupied. With demand escalating and supply constrained, the prospects have surged for enormous windfall proceeds from current and anticipated spectrum auctions. The most recent auction, concluded in early 2021, reaped a record windfall **exceeding $80 billion** for the U.S. Treasury, and two more spectrum auctions on tap for 2021 are likely to raise tens of billions more. Since 1994 the privatization of the public airwaves through auctions to private companies has generated more than

$200 billion in revenues. But rather than using these proceeds to address these serious disparities, we dump them willy-nilly into the U.S. federal budget, where they are quickly absorbed without a trace.

At a time when the pandemic has made the nation painfully aware of the digital divides that are widening inequality, slowing productivity, and impeding digital innovation, is our practice of dumping the proceeds from the privatization of the public airwaves into the federal treasury, as is now routinely done, the best use of this precious public resource?

The answer, we believe, is decidedly NO. Instead, the nation should dedicate a sizable share of spectrum auction proceeds to closing these digital equity gaps and should establish a reliable, proven vehicle to pursue this task.

Experience in this country and abroad suggests that an endowed, independent, and private charitable foundation would best have the flexibility, research focus, long-term time perspective, and ability to engage other partners that such a mission will require. This experience emerges from the success around the world of a strategy known as "**philanthropication thru privatization**," or PtP for short.

Germany successfully deployed this strategy in 1960 when it privatized its state-owned Volkswagen Company and deposited 60% of the proceeds in a new foundation dedicated to overcoming the lag in German science suggested by Russia's Sputnik launch. This PtP strategy has also led to the creation of 650 other private charitable foundations, including over 250 in the United States, to channel proceeds from transactions involving other government-owned, -controlled, or -subsidized assets into effective public-purpose uses insulated from short-term political pressures. This strategy even bears striking resemblance to the bold decision of Abraham Lincoln and Congressional leaders in 1865 to dedicate 77 million acres of federally-owned land to endow an entire network of land-grant colleges.

The sale of spectrum-use rights easily fits this PtP model of a government asset being transferred to effective private ownership and control in the course of which an endowed charitable foundation could usefully be created. And with over $80 billion of spectrum auction proceeds recently generated and another $50 billion or more anticipated over the next few years, designating even a portion to endow a ***Digital Futures Foundation*** could significantly narrow America's digital equity gaps by pioneering development of urgently needed public-purpose capabilities that can leverage and enrich the nation's digital ecosystem.

The policy environment for this concept is now more receptive than ever before. The pandemic has made affordable access to basic internet access a top priority both for Congress and the new Biden administration. Legislative proposals to dedicate a portion of the proceeds from the recent C-band spectrum auction for rural broadband, or for a general "Digital Divide Trust Fund," were introduced by leading senators from both parties in the very recent past. While these proposals lacked the scope and sustainability of the proven, and highly successful, PtP approach proposed here, they clearly help lay the groundwork for using this approach to address the significant digital equity gaps that exist.

This Concept Note explores the possibility of applying this PtP concept to create an independent ***Digital Futures Foundation*** endowed with a substantial portion of the windfall proceeds from future, and possibly even recently concluded, spectrum auctions. To do so, the discussion proceeds in four parts.

- ➔ **Part I** provides a brief primer on spectrum and its regulation, particularly in the United States.
- ➔ **Part II** then examines the forces driving the expansion of broadband spectrum demand and the implications this has for the generation of spectrum-derived auction revenues.
- ➔ In **Part III** we examine some of the precedents for channeling the proceeds of spectrum auctions into public-purpose uses.
- ➔ Finally, **Part IV** lays out the case for applying the PtP concept to endow a private Digital Futures Foundation to invest in the significant advancements in public-purpose applications and services needed to close the various digital equity gaps for the benefit of all the American people.

PART I
What is spectrum...and who owns it?

The spectrum, once called *aether*, is nothing more tangible than the electromagnetic frequencies useful for transmitting and receiving radio signals. The propagation characteristics—and hence the value—of these frequency bands vary widely, with low-frequency spectrum (used most notably for radio and television broadcasting) able to travel long distances and penetrate through walls, trees, and bad weather, whereas very high-frequency spectrum, although plentiful and offering high-capacity transmissions, is not as valuable since signals generally are limited to very short distances.

The right to transmit on any of these frequencies is ultimately owned and controlled exclusively by governments worldwide. In the U.S., for example, **the Communications Act**, originally signed by President Franklin Roosevelt in 1934, is unequivocal in stating that the airwaves belong to the public:

> *It is the purpose of this Act, among other things, to maintain the control of the United States over all the channels of interstate and foreign radio transmissions; and to provide for the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license.*

What governments do with this ownership of frequencies varies broadly. Once bands are ***allocated*** to a use or "service" (e.g., TV, mobile phones, satellite, military radar, Wi-Fi), each country's regulators then ***assign*** frequencies to particular users or leave them unlicensed and open for public use. In the U.S., this function is performed by two different agencies: the Federal Communications Commission (FCC), an independent federal regulatory agency charged with allocating spectrum for private sector and public safety use; and the Department of Commerce, which has regulatory authority over the bands allocated for federal government use (e.g., military radar, NASA, air traffic control, FBI surveillance).

The FCC leaves some bands unlicensed for the public's use of technologies that today most ubiquitously include Wi-Fi, Bluetooth, and microwave ovens. Unlicensed spectrum is open and free for anyone to use, but is shared and has no interference protection. The federal government also retains and assigns a large share of the spectrum, including some of the most valuable bands, for the military, the FAA, and other agencies.

Of most importance to us here, however, is the spectrum auctioned off to private corporations. In 1994 the U.S. became the first nation to auction spectrum licenses to facilitate a competitive, nationwide mobile telephone industry. Indeed, the FCC is required by very specific provisions **added to the Communications Act in 1996** to auction new licenses if there are "mutually exclusive applications" from aspiring users—that is, more demand than supply. Since 1994, nearly all of the new spectrum allocated for cellular telecommunications (mobile phones and broadband) has been

assigned by auction. The resulting private-sector licenses are issued for a limited time period—typically 8 or 10 years—although they also typically renew automatically if licensing conditions are met (e.g., if build-out or service requirements are satisfied).

What is more, the licenses issued through auctions provide ***exclusive access*** to particular bands to the company that wins the auction. As a result, the national and regional mobile cellular operators (e.g., Verizon, AT&T, T-Mobile, US Cellular) have become the effective owners of the country's mobile phone spectrum bands and have built business models that are premised on exclusive control of a set of frequencies over the geography of their networks. Regrettably, except for a few limited exceptions noted below, the Communication Act of 1996 mandates that proceeds of these auctions must be deposited into the general U.S. Treasury rather than being used to finance improvements in the country's digital hardware or software. It is in this latter feature of the current practice that the present proposal seeks a partial adjustment.

As wireless technologies and services evolve, allocations and assignments of spectrum change as well, as do the conditions placed on new licenses. As noted below, two interrelated technological shifts are now propelling significant expansions in demand for broadband access and therefore driving up the proceeds from broadband auctions. This creates an enormous opportunity for the kind of imaginative uses of these proceeds that the PtP concept encourages. We therefore turn next to the forces propelling massive escalations in the value of spectrum, and hence in the proceeds from spectrum auctions, both domestically and internationally.

PART II

What is driving massive escalations in the value of spectrum globally?

Licenses to use spectrum have always been valuable, particularly in situations where they are granted exclusively to a limited number of competitors. Nonetheless, from the 1920s (when demand for spectrum was limited primarily to maritime and local AM radio stations) through the 1980s (when mobile phones first appeared), each major service generally received an allocation of far more spectrum than it needed. TV stations and other licensees typically left large ***guard bands*** between occupied channels since primitive receivers (e.g., analog TVs) were highly susceptible to interference.

However, the relatively recent explosion of consumer and industry demand for mobile data and wireless communication has made spectrum—and, in particular, exclusive licenses to the frequencies with the most desirable propagation characteristics for mobile broadband—far more valuable than previously anticipated, setting off a scramble among companies reliant on these frequencies and radically escalating the proceeds of the resulting auctions. For example, the **auction of 600 MHz TV spectrum** in 2017 yielded nearly $20 billion and an auction of prime mobile broadband spectrum netted **$41 billion in 2015**. The $80.9 billion C-band satellite spectrum auction that concluded in January 2021 was thus the latest in a trend. Nor is this limited to the U.S. Germany's June 2019 auction for 5G spectrum raised $7.2 billion, while Italy raised $7.3 billion, Canada $3 billion, South Korea $3.3 billion, and the UK $2.2 billion. As a leader in this field, an American breakthrough in earmarking broadband auction revenue could trigger similar developments elsewhere.

Five particular trends stand out in creating the current escalating prices for spectrum licenses:

- ***Surging consumer demand.*** Consumer demand for wireless broadband connectivity and services continues to grow rapidly worldwide. In the U.S. more than 80% of adults own a smartphone, which on 4G and emerging 5G networks consume exponentially more data than previous generations of mobile phones, primarily due to streaming video. One in five adults in the U.S. are "**smartphone-only**" internet users, which means they rely on their smartphone as their primary or only internet connection. As noted previously, mobile data traffic is projected to continue growing globally at **over 30% per year** with the latest push expected from the Internet of Things (IoT).

- ***The "Race to 5G."*** Just as **4G mobile networks** made mobile video streaming and app-based businesses like Uber possible, the recent appearance of **5G, the 5th generation of mobile carrier networks**, promises to trigger additional pressures on mobile broadband network capacity. 5G connections offer far greater capacity, near-real-time interactive services, cloud computing, longer battery life, and the ability to connect hundreds of devices, sensors, and people in small areas—all at speeds that mobile carriers have touted as revolutionary. As a

result, auctions to assign licenses for the airwaves essential to 5G are generating billions of dollars in public revenue around the world, with as much as an additional $50 billion expected in the U.S. alone over the next several years beyond the recent C-ban auction just concluded.

➔ ***Exclusive-use licensing and the limited availability of 5G-appropriate spectrum.*** Further fueling the likely escalation of auction revenues are two additional factors. The first is the fact that the mobile carrier business model is premised on exclusive-use licenses. Although many small rural wireless internet providers ("WISPs") rely primarily on unlicensed spectrum, those bands are open for shared public use and subject to interference. As a result, only exclusively-licensed spectrum can provide the operational control and quality of service that the national and regional mobile broadband providers require. Not surprisingly, this dramatically increases demand and resulting prices paid at auctions. Further driving price escalation, however, is the fact that the spectrum bands most conducive to 5G usage—namely the mid-band frequencies—are largely already assigned and occupied by existing users. This suggests the likelihood of a massive bidding war and a resulting windfall of auction proceeds.

➔ ***The emergence of "mega constellations."*** A final source of pressure poised to limit the supply of spectrum available for auction to cellular mobile providers arises from the new phenomenon of **massive "constellations" of small satellites** being launched by private space exploration companies, such as **Elon Musk's SpaceX**. These low-orbiting satellite networks are capable of delivering broadband internet access anywhere in the world, including in remote areas and less developed countries, through celestial as opposed to terrestrial broadband connections. For example, SpaceX's "Starlink" satellites, nearly 1,000 of which have already been launched, can be positioned over particular countries to provide broadband connections to locations unserved or underserved by terrestrial services. Amazon and other potential competitors are planning to launch their own constellations, increasing the demands on limited supplies of spectrum.

Summary

In short, from a variety of sources, pressures are mounting for access to the limited broadband spectrum available not only in the United States, but globally. Inevitably, this will trigger a significant windfall of broadband auction revenues. This raises powerfully the question of whether the existing practice of dumping these windfall proceeds into the U.S. Treasury makes the most sense—or whether it might be time for a more imaginative use of them to address the critically needed public-purpose dimensions of broadband development. And if the latter, whether a private philanthropic institution should be enlisted to play a meaningful role in designing and supporting the implementation of such uses, as the PtP concept strongly suggests.

To help answer this latter question, we look next at the existing precedents for channeling into charitable foundations the proceeds of transactions involving government-owned or -controlled assets in the United States, both in general and in the broadband field more specifically.

PART III

U.S. precedents for using proceeds from the privatization of government assets to fund special entities for priority public-purpose uses

The concept of investing proceeds from the sale or transfer of government-owned or -controlled assets in specially designated institutions to promote targeted public interest objectives is hardly a new one in the United States. Nor is the PtP idea of placing such proceeds into private, charitable foundations insulated from undue political and budgetary pressures, and therefore able to pursue long-term objectives of significant social value. As will become clear, this reflects the special attributes of charitable foundations for promoting important public-purpose objectives and the somewhat disappointing record of trust funds and other only partially independent structures established within governmental institutions. In this section we briefly review this experience in other fields and then in the technology and broadband field more directly.

General U.S. Precedents

The idea of earmarking the proceeds from the sale of a government-owned or government-subsidized asset to finance a particular public-interest objective has a long lineage in American public policy.

➔ ***Federal Land Grants for education.*** As far back as the late 18th and early 19th centuries, Congress designated revenues from the sale of federally-owned lands to finance education for all.

- The **Northwest Ordinance of 1787**, for example, dedicated funds generated by the sale of public frontier lands to help finance K-12 education in every new state.
- Later, during the Civil War, the **Land Grant Colleges Act**, signed by President Lincoln in 1865, transferred the assets represented by 77 million acres of federally-owned land to states for the establishment of land grant colleges.

➔ ***Health conversion foundations.*** Beginning in the early 1980s many U.S. nonprofit hospitals, health insurance plans, and health systems encountered financial difficulties and began merging with for-profit health systems for relief. Under U.S. law, however, because of the significant tax advantages they enjoy, charitable nonprofits operate under statutory "capital locks" that require them, in the event of dissolution or transformation into for-profit status, to transfer any assets they have accumulated to similar nonprofit entities. To comply with this obligation, a precedent developed that embodied the PtP concept: namely, the

channeling into private, charitable foundations of the assets generated by the conversion of these quasi-public institutions into private, for-profit institutions. As a result, the U.S. now boasts 240 so-called "health conversion foundations" controlling nearly $30 billion in assets. These foundations award $1.3 billion in grants annually to address the health needs of the American public and to develop important new directions in closing health-care access gaps, as well as address the deeper causes of many health-related problems.[1]

➔ ***Turning fines into foundations.*** In another application of the PtP concept, when civil lawsuits involving illegal corporate behavior are settled out of court, as is quite frequent in the U.S., corporate litigants often find it preferable to have the penalties go to a foundation or nonprofit rather than automatically into governmental coffers. One highly-effective example of this was the nearly $2 billion in assets carved out of the 1998 settlement of state lawsuits against the tobacco industry in the U.S. to support a private foundation dedicated to fighting **tobacco addiction**. Another example is the U.S. Environmental Protection Agency's "Special Environmental Projects" initiative under which penalties for environmental infractions are deposited in environmental foundations around the country instead of into the U.S. Treasury.

Spectrum Precedents

Such grants of public assets to private entities have also occurred in the spectrum arena, at least prior to the onset of lucrative spectrum auctions. For example, local **TV stations** have been given ***free access to the public airwaves*** for more than a half-century in exchange for specified "public interest obligations," such as airing a modest amount of children's educational programming and serving as an emergency broadcast system. In addition, in 1964 the FCC began granting spectrum licenses to **colleges and school systems** for ***instructional television services*** on condition that the airwaves be used for educational purposes, particularly closed circuit TV programming for students.

The entire concept of awarding spectrum licenses in exchange for public service obligations has largely disappeared since 1994 when Congress began requiring the FCC to auction frequency bands for exclusive use by mobile phone companies. With the exception of unlicensed spectrum designated for Wi-Fi and a few other very low-power uses by the general public, Congress and the FCC became focused on a very narrow public purpose of generating auction revenue that could be poured into general federal spending. Largely lost in the process was a commitment to the broader public-purpose uses of the spectrum resource—for education, telemedicine, access to government benefits, or ensuring equal access to new digital technologies.

To be sure, some broader public-purpose objectives have been funded with revenues related to spectrum or telecommunications services. While these initiatives provide

[1] For an analysis of the record of a sample of these conversion foundations, see: Charles Bell and Lester M. Salamon, "America's Health Conversion Foundations: A PtP Success Story." (Baltimore, MD: Johns Hopkins Center for Civil Society Studies, forthcoming 2021).

additional precedents, they also tend to be limited in scope and restricted to complex financing arrangements that carefully avoid tapping the rich vein of spectrum auction proceeds. In particular:

- ***Telecommunications Development Fund.*** As part of the Telecommunications Act of 1996, Congress established an independent, nonprofit **Telecommunications Development Fund** ("TDF") to promote competition in the telecommunications industry by extending capital to small digital businesses. Rather than funding the TDF out of spectrum auction proceeds, however, Congress created a very limited arrangement under which TDF's funding comes from the interest earned on upfront payments that mobile operators deposit in government accounts in advance of spectrum auctions.

- ***Universal Service Fund.*** The one large and ongoing source of public revenue that addresses the digital divide is the **Universal Service Fund** (USF) adopted as part of the 1996 Telecommunications Act. USF finances four programs that partially subsidize access to connectivity services for very low-income individuals (Lifeline), for schools and libraries (E-Rate), for broadband build-out in high cost areas (RDOF), and for rural telehealth providers (US Health). As with the TDF, however, this Fund is not financed from spectrum auction proceeds, but by a regressive federal excise tax on telephone subscribers that service providers collect and pass on to the Universal Service Administrative Company, a nonprofit that operates under the supervision and control of the FCC.

- ***Educational Broadband Service.*** A bit closer to the PtP model is the transformation the FCC promoted in 2004 of the Instructional Television Fixed Service (ITFS), which had given school districts and colleges free spectrum licenses for closed-circuit television educational programming. Once closed-circuit TV technology was overtaken by new technologies, the FCC transformed the ITFS into the **Educational Broadband Service** (EBS), and granted licensees the flexibility to lease up to 95% of their spectrum licenses to cellphone companies like Sprint and to use the proceeds to finance other educational activities. One interesting consequence of this EBS arrangement has been the emergence of collaborations fostered by organizations such as **Voqal**, an independent private foundation that aggregates leasing revenues from various licensees and utilizes them to make grants and investments that "expand internet access…and protect the public airwaves."

- ***FirstNet Public Safety Network Trust Fund.*** There is only one major precedent for setting aside spectrum auction revenue for a targeted public-purpose digital use. In 2012 Congress enacted legislation that earmarked $7.5 billion from two spectrum auctions to provide the start-up planning and construction funding for the **FirstNet Public Safety Network**. This network, initially recommended by the 9/11 Commission, is designed to enable inter-operable broadband communication among the nation's first responders. In addition to $7.5 billion of spectrum auction proceeds, FirstNet also received a set-aside of prime spectrum licenses, which it leases to AT&T (while reserving priority access during emergencies). This illustrates how spectrum license auction proceeds can be turned into endowment-like streams of revenue to support priority public interest purposes, as the proposal outlined here suggests.

PART IV

The case for an independent, private Digital Futures Foundation financed by spectrum auction proceeds

Key Findings

A number of important conclusions relevant to the proposal advanced here emerge from the previous discussion:

i) **A significant imbalance has emerged between the private market benefits of spectrum auctions and the effort to promote the public purposes of digital inclusion and public-serving applications of digital technology.** This imbalance is evident in the persistent broadband digital divide; the lagging development of innovative applications and online services needed to advance public-purpose objectives in fields as diverse as education, healthcare, environmental justice, skills training, and social services; and the increasingly urgent calls for the creation of public service digital media to supplement the pervasive commercial online media market, much as public television and radio once filled a salient gap in the traditional radio and television broadcast media ecosystem. To address these three objectives, fresh thinking, research, experimentation, collaboration, prototype development, and the resources to support them will be needed.

ii) **Significant windfall proceeds are available from spectrum auctions that could be dedicated in substantial part to addressing this imbalance. Massive proceeds were generated by a recently concluded spectrum auction and tens of billions of dollars in additional proceeds are anticipated from future auctions.** A steadily increasing demand for commercial use of the public airwaves for wireless data services will continue to drive this trend. Tapping these proceeds to address the imbalances in digital investments would go a long way toward closing the prevailing digital equity gaps. Legislation authorizing such uses could be integrated into the new administration's COVID-19 response or economic recovery packages and further reinforced in the legislation that the current Congress will need to pass to extend the FCC's expiring auction authority.

iii) **There are historical precedents for the PtP approach of channeling into a private, public-purpose charitable endowment revenues generated through the sale or transformation of government-owned, -regulated, or substantially subsidized assets.** The 240 health conversion foundations, the numerous foundations that have emerged from the capture of penalties arising from out-of-court settlements of corporate misdeed lawsuits, and the over

600 other PtP foundations involving numerous other asset classes are tangible manifestations of the feasibility and value of this PtP concept, as are the closely related 19th century experiences of dedicating federally-owned land to finance a network of land grant colleges and state public schools.

iv) **Spectrum and FCC-regulated assets have supported public-use purposes, including two that channeled these resources through charitable foundations or other nonprofit organizations.** As described above, these include the FirstNet public safety wireless network, funded by auctions and a grant of spectrum, as well as both Voqal and the Telecommunication Development Fund.

v) **While the Universal Service Fund (USF) subsidizes broadband access, it does not invest in developing the innovative public-purpose digital applications and services** needed to bridge the widening digital equity and inclusion gaps.

Why a Digital Futures Foundation Is Now Needed: Investing in Digital Inclusion

In the wake of the COVID-19 crisis, greatly expanded efforts are needed to address the significant gaps that exist in digital inclusion. Current programs and pending proposals related to the "digital divide" focus almost exclusively on affordable broadband connections, particularly for low-income and rural communities. However, as critical as these are, getting everyone online will not directly address the enormous digital equity gaps that exist in at least three other critical areas that are currently not the focus of either current federal programs (e.g., USF), or the legislative priorities of the new administration and Congress.

Included here are: ***first***, greatly expanding public-purpose applications of digital technology needed to make digital access fully effective and inclusive in such fields as education, health care, job training, disabilities, environmental justice, access to government benefit distribution, commerce, and access to art and culture; ***second***, overcoming the digital inclusion gap that results also from the lack of digital literacy and skills; and ***third***, democratizing digital communication and information access. In each of these areas, a ***Digital Futures Foundation*** endowed with a share of the proceeds from spectrum auctions could vastly expand the digital highway, open it to new uses and new users, and enhance its contribution to American life. While the specific activities that such a foundation might support in these or other areas cannot be determined in advance, the following are illustrations of some of the possible high-impact lines of such activity:

1) Expanding public-purpose applications, training, and evaluation

In addition to affordable and high-capacity internet access for all, there is a growing need for a more inclusive, innovative, and robust menu of public-benefit digital applications, tools, and services that address needs not viewed as sufficiently profitable by the private sector. The following examples illustrate the sorts of investments that are currently being neglected or under-resourced in today's digital marketplace and that an endowed Digital Futures Foundation could usefully help promote:

➔ ***Public health.*** The COVID-19 crisis itself highlighted the need for applications that could have, and still would help, those most vulnerable cope with this (and any future) public health crisis—examples being contact tracking and tracing, streamlined benefit eligibility verification, automated alerts, and public engagement. Initiatives that crowdsource, map, and analyze public health data are another new frontier in both better policy and treatment strategies. Such initiatives could build on the example of the recent **17-state initiative** to "map" the opioid epidemic.

➔ ***Education.*** The "homework gap" widened into a chasm when pandemic closures forced schools to switch to remote learning. But this is only part of a deeper problem and opportunity related to digital learning. As the **Consortium on School Networking** posits as a premise for its work: "*Technology is an essential element of learning, yet the use and application of it is inequitable*." While many companies market digital learning tools to schools, few are truly research based, disseminated freely, and, perhaps most importantly, integrated with teacher training aimed at helping the most disadvantaged students in particular. While some very innovative applications are being developed to promote educational equity, these and others in the pipeline need substantial resources for further development, testing, distribution, and training. Examples of potential high-impact ed-tech initiatives include:

- ***Learner variability applications:*** The **Learner Variability Navigator** is a free and open-source web application created by the **Learner Variability Project at Digital Promise**. It provides teachers with evidence-based factors to understand the cognitive, social-emotional, and background factors that impact a student's ability to learn. With a customized plan in place, personal learning apps and tools can help students meet their potential, including students with learning differences or who have historically been marginalized. Still lacking for this and other promising ed-tech initiatives is funding for teacher professional development that supports efforts to tailor learning plans so all students can learn.

- ***Tailoring next generation technology for learning:*** Emerging technologies like augmented reality (AR) and virtual reality (VR) have great potential, but are challenging to integrate into classroom practice. Funding for development, dissemination, and training are needed for projects such as **codeSpark**, which builds games for children to learn to code by creating story-based narratives; and **Schell Games**, which is developing a VR content creation tool for students to create artistic performances. Multi-player educational games that incorporate VR and curriculum-based content is another promising area.

➔ ***Health care and telemedicine.*** In response to the pandemic, the USF's telehealth program (USF Health) **expanded funding for virtual doctor visits**. But internet access for remote care is only the most basic way to promote more equitable health outcomes. Wireless monitoring and testing devices, electronic alerts, remote diagnostic protocols, and improved online advisory services are among the many emerging telehealth applications that can reduce disparities created by inequities in health care, particularly for low-income and rural populations. These technologies and ways to target them to the particular needs of marginalized communities are embryonic and resources are needed for further development, testing, and dissemination.

- ***Access to government benefits and services.*** COVID-19 laid bare critical weaknesses in public benefit programs at every level of government. Modernizing public access and delivery systems with **interoperable and open source solutions** is a challenge for state and local governments nationwide. One area ripe for investment would build on recent state-based initiatives to develop the next generation of digital platforms to transform how governments deliver benefits, information, and other vital support for citizens. A leading example is the **New Jersey Career Network**, developed with support from the Rockefeller Foundation, which takes the best practices of in-person job search support and delivers it online and on demand, steering job seekers through the arduous process of searching and applying for meaningful work. Another area that needs further funding and development applies data science—and mass aggregations of public benefit and other data—to problems such as housing insecurity (evictions, foreclosures), the nation's broken and inequitable unemployment compensation system, and connecting eligible populations to broadband subsidies and providers.

- ***Access to cultural and artistic experiences.*** One lesson from the COVID-19 crisis is that everything from the most exclusive cultural events to grassroots community theater can be made widely accessible online. Emerging technologies, such as augmented and virtual reality, can greatly enhance these experiences—and their appeal—including for students, lower-income communities, or for those eager to tap into the rich cultural life of diverse ethnic communities. One conceivable area of investment would be the digital recording and curation of an archive of cultural performances and events, both local and national, including those that showcase the heritage of diverse groups and art forms.

- ***Environmental justice.*** In addition to the existential threat of climate change, there is a growing awareness that low-income and minority communities are impacted disproportionately by pollution, toxic waste, unhealthy drinking water, and other harms. Digital innovation and data science hold great promise in this regard. Local monitoring efforts like **Air Quality Chicago**, which focuses on the city's low-income neighborhoods, are among many potential "smart city" technology initiatives. Mapping initiatives represent a related innovation that applies data science and transparency to track pollution and other environmental harms. Examples like the **Mapping for Environmental Justice** initiative in Colorado and the **Center for Earth Energy & Democracy** in Minnesota could be replicated in local communities and regions nationwide.

- ***Criminal justice.*** As with environmental justice, data science and transparency can address issues such as the widespread concern over police violence that disproportionately harms communities of color. Examples include initiatives such as the **Chicago Justice Project** and **Mapping Police Violence** that compile and analyze in-depth aggregations of official and crowdsourced data on incidents involving police use of force. Improving the effective use of body worn cameras and neighborhood awareness and engagement with policing are other areas where data science, new digital tools, and training could advance equitable outcomes.

2) Closing the digital inclusion gap

The enormous "digital divide" highlighted by the COVID pandemic is often portrayed incorrectly as exclusively due to a lack of internet access or devices. To be sure, barriers to affordable broadband remain—and ambitious federal proposals to address that most basic digital divide are pending. But surveys show clearly that effective digital inclusion will require more than affordable broadband access.

Equally important are interventions to promote adoption. On the ***demand side*** the critical need is expanding digital literacy so that populations newly enabled to attain network access can actually make effective use of it. At present, too many individuals are left to navigate access to digital technology on their own. Millions more do not possess or understand the value of digital skills as information and opportunities move online. While initiatives directly addressing digital literacy and inclusion exist, they are scattered, under-funded, and under-developed. A Digital Futures Foundation could usefully narrow these gaps through systematic identification of best-in-class approaches and targeted investments in promising innovations aimed at filling gaps in coverage. One example is Philadelphia's new **Digital Navigators program**, which "helps residents better access and use technology and the internet, from sharing info on low-cost internet options to advising on device setup."

Similarly, on the ***supply side***, innovative community-based approaches could make the cost of digital access substantially lower and more sustainable. For example, even prior to the pandemic-driven shift to remote learning, school districts and local communities were experimenting with **innovative and financially sustainable ways** to permanently close the "homework gap" while simultaneously offering a base level of internet access to their residents. School and community leaders have found that wireless networks relying on free access to unlicensed and shared spectrum are a relatively fast and low-cost option. A **November 2020 New America report** profiled a number of these innovative efforts, most initiated during 2020 in response to the pandemic-induced online learning gap. They include:

- ***Neighborhood Wi-Fi networks*** built by school districts in partnership with their municipality. Examples include **Lindsay Unified School District**, a farmworker community in California's Central Valley; **Council Bluffs, Iowa**, which has prioritized its lowest-income neighborhoods; and **San Jose, CA**, which is struggling to expand its community Wi-Fi network to its poorest neighborhoods and to the public as well.

- ***Wireless networks*** in **Texas**, **Utah**, **Maryland**, **California**, and beyond that leverage shared and free spectrum available as part of the new Citizens Broadband Radio Service (CBRS), as well as vacant TV channels (mostly in rural districts), to connect students directly to school networks using commercial-grade mobile broadband technology.

Each of these networks is pioneering somewhat different technologies and financial and service models that need to be evaluated, refined, compared, and replicated as appropriate. Funding for this work—including promotion of new prototypes—is scarce. Each community noted above is extending its network neighborhood by neighborhood due to funding constraints. A far more robust development program could provide seed funding for sustainable models that connect students and bring

digital costs down to levels low-income families can afford, making communities more connected and more resilient.

3) Democratizing digital communication

A third area of potential work is to fund and disseminate technical innovations that keep the digital communication pathways open and accessible for a broad diversity of potential users, particularly at the local level. The steady disappearance of local news outlets, and the demonstrated demand for hyper-local community information exchange online (e.g., ad-driven commercial apps such as Nextdoor), suggest the need for more experimentation with alternatives to steadily consolidating social media and mass media outlets. Investments in this area could include:

- ***Developing experiments and prototypes that promote more open digital communication systems***, particularly at the local level and focused on historically marginalized communities, that enhance what's available from local newspapers, radio, and TV stations by extending the reach and relevance of credible information resources online.

- ***Developing, evaluating, and disseminating innovations*** in areas such as automated fact-checking (for reporters and the public) and augmented reality, which allows users to **overlay digital content** (video, text, data visualizations) onto the real world through smartphone cameras and wearables.

- ***Fostering the production, curation, and distribution of public-service digital media*** to supplement and provide a curated alternative to the pervasive commercial online media, much as public television and radio have done vis-à-vis mainline radio and television.

Initiatives such as these will require the mobilization of multiple actors, the promotion of experiments and pilots, significant technological innovation, the assembly of multi-disciplinary teams, and considerable catalytic energy and research capability. It will also require durable and meaningful financial support of the sort that a ***Digital Futures Foundation*** endowed by resources generated by a portion of spectrum auction proceeds could supply.

Why Government-controlled Institutions Are Far From the Ideal Mechanisms for Addressing the Pressing Equity Gaps in Our Digital Ecosystem

Despite their acknowledged capabilities, the existing institutional structures in the broadband arena are not well-suited to addressing these objectives or correcting the resulting imbalances. The major private holders of broadband spectrum licenses are understandably preoccupied with the pursuit of market revenue and the protection of their exclusive-use licensing business models. They lack the incentives and the expertise to promote digital inclusion or to develop best-in-class applications—let alone ones that are likely to be unprofitable. The FCC, for its part, is similarly focused on sustaining a vibrant and competitive broadband services sector and has no particular expertise or authority for developing public-purpose applications, tools, services, or

training.
Nor does the option of establishing a trust fund within the government offer a reliable way forward. Past experience with trust funds established within government agencies has been disappointing to say the least. Resources too often end up subsidizing regulated industries or being siphoned off to other uses once political fortunes or political priorities change. This was certainly the experience with the **funds for tobacco addiction prevention** allocated from the tobacco settlement to the states as opposed to the Truth Initiative Foundation established for the same purpose. The funds allocated to individual states were quickly diverted to Medicaid budgets for medical services and other miscellaneous uses rather than addiction prevention, whereas the funds allocated to the independent, private Truth Initiative Foundation have supported a very visible and **highly effective set of prevention initiatives** over this foundation's more than 20-year history, with much of the initial endowment preserved in the process.

Another example is the Universal Service Fund, which is operated by the nonprofit Universal Service Administrative Company. USAC operates under the control of the FCC and a board of directors nominated primarily by the largest industry stakeholders. As a consequence, the USF program has historically been structured primarily to **benefit the big incumbent telecom providers**. For example, only recently have non-traditional broadband providers been eligible to bid for the billions in subsidies granted through what is now called the Rural Development Opportunity Fund. It seems likely that if the over $9 billion stream of annually-recurring USF revenue—all of which is collected as an excise tax paid by consumers—were controlled by a private, independent foundation, the program would be more efficient, nimble, and innovative in addressing the imbalances currently afflicting America's digital ecosystem.

Why a Private Charitable Foundation Is the Best Vehicle for Addressing These Gaps

Fortunately, a tested, alternative option for addressing the existing digital equity gaps and imbalances is available. That option is embodied in the ***Philanthropication thru Privatization***, or PtP concept briefly introduced at the outset of this Concept Note. Fundamentally, this concept involves three crucial elements:

- ***First***, an asset that is owned, controlled, or substantially subsidized by government;
- ***Second***, a transaction through which this asset is sold, leased, or otherwise transformed into private business ownership or control in the course of which significant proceeds are generated; and
- ***Third***, the channeling of all or a portion of these proceeds into an independent, private, charitable foundation dedicated to a priority public purpose for which sustained attention and funding are needed.

The first two of these features are certainly present in the case of spectrum auctions. Spectrum is a classic PtP asset since it is wholly owned and regulated by government. Secondly, through the auction process, effective ownership and control of this asset is shifted into the hands of private corporations, generating tens of billions of dollars

of windfall proceeds. Although the licenses granted are supposedly time-limited, once put to use they are routinely renewed since they become essential to the companies' ability to recoup the costs of their significant infrastructure investments and to continue serving existing customers.

What has been missing so far is the third element: *the channeling of all or a significant portion of these proceeds into an independent, private foundation dedicated to a related, priority public purpose.* Instead, the proceeds are dumped by default into the general federal budget where they are quickly lost from view. **We believe this third element also should apply to spectrum auction proceeds in order to provide the resources to identify and invest in the digital public goods needed to close the equity gaps and imbalances that currently afflict the country's digital ecosystem.**

Funding these needs with the windfall proceeds from spectrum auctions makes enormous sense since it will effectively reinvest a share of these proceeds back into the sector from which they were generated while achieving the important public purpose of making digital innovation more inclusive and useful for all Americans.

What is more, dedicating such proceeds into a ***Digital Futures Foundation*** offers the most reliable, workable, and sustainable way to ensure that these public-purpose objectives continue to be addressed, and addressed in an innovative way. Indeed, the kinds of tasks outlined above—stimulating research, developing innovative tools and prototypes, underwriting promising pilot efforts, engaging interdisciplinary partnerships, and generally stimulating digital innovation to serve the civic cause of closing the digital equity gaps—are precisely ones that fall within the "sweet spot" for private foundations.

In particular, among the capabilities that make endowed charitable foundations uniquely suited to address these challenges are the following:

- ***Independence.*** As private institutions, endowed foundations are structurally and legally free of political interference and market pressures. This gives them the freedom to innovate and experiment without the limits and political pressures that frequently constrain government agencies.
- ***Pluralism.*** Charitable foundations introduce an important degree of pluralism into efforts to solve public problems. Foundations can respond to issues that may not yet have attracted government attention and can promote innovations that governments can subsequently adopt.
- ***Flexibility.*** Foundations can be shaped in a variety of ways to accommodate the circumstances that lead to their creation. Such flexibility can apply to their governance, their geographic focus, their programmatic objectives, their beneficiaries, their modes of operation, and the time period over which they are allowed to exist.
- ***Public purpose.*** By law, foundations must serve legitimate public purposes. Over time, a solid body of common practice has emerged to ensure that foundations adhere to such purposes. These include provisions for transparency,

protections against conflicts of interest, and procedures for grant-making and other means of distributing foundation resources. Properly structured, foundations can thus instill trust among citizens and ensure that assets built up through the sweat and toil of a country's people or forming—like broadband spectrum—part of a country's birthright of natural resources, are used for the benefit of a country's people.

- ***Permanence.*** Foundations can ensure that important resources remain dedicated to particular problems over time. They thus offset one of the significant disadvantages of government budgets, which often shift from policy area to policy area in response to short-term shifts in political priorities. This makes an endowed foundation particularly suitable for the promotion of research, experimentation, and exploration of alternative approaches to complex problems—precisely the tasks now needed in the public-purpose digital space.

- ***Collaboration.*** Foundations thrive on broad-based collaboration. They bring teams together, resource collaborators, and create communities of practice around identified issues. They can also bring additional resources into targeted areas of work, leveraging their own assets to generate support from others.

- ***Visibility.*** Proceeds now generated from broadband auction sales are quickly lost from view once they are dumped into government budgets and dedicated to purposes unrelated to digital advances. Even when special government funds are created, experience has shown that their resources are often diverted to other uses. When these resources are instead invested in charitable foundations, they can be regularly tracked, and their impacts assessed.

Numerous existing PtP foundations funded by the privatization of what were originally government-owned or -controlled resources are already displaying these attributes prominently and with sustained impact in a wide assortment of countries throughout the world. Close to **650 such foundations** have now been identified in countries across the globe, including at least 250 in the United States. Included here are some of the largest and most widely respected foundations in the world, such as the Volkswagen Foundation in Germany, the Cariplo Foundation in Italy, the King Baudouin Foundation in Belgium, the Nippon Foundation in Japan, the $26 billion-asset la Caixa Foundation in Spain, and the array of health conversion foundations in the United States. **Recent research** has found these to be best-in-class institutions in terms of transparency, accountability, independent governance, and avoidance of conflict of interest, and they have been found as well to yield substantial and enduring benefits to the populations and objectives they serve.

It is no wonder, therefore, that the general concept of dedicating spectrum auction revenue to a self-sustaining, independent, public-purpose foundation has attracted the interest of credible advocates in the United States in the recent past. Thus:

- In 2001, former FCC Chairman Newt Minow and former PBS and NBC News president Larry Grossman proposed the creation of a **Digital Opportunity Investment Trust** financed from 30 % of the proceeds of future spectrum auctions and designed to "spur innovative uses for information technology to transform education, jobs and skills training, and lifelong learning."

- This proposal won support from a bipartisan group of senior Congressional leaders and was introduced in 2003 and 2005 as the proposed **Digital Opportunity Investment Trust Act**.

- A similar concept was endorsed by a blue ribbon commission convened by the Public Broadcasting System and NPR in 2004 (co-chaired by former FCC Chairman Reed Hundt and former Netscape and FedEx CEO James Barksdale), which released **a report proposing a "Digital Future Endowment"** funded from spectrum auction proceeds to replace annual Congressional appropriations for public broadcasting.

How Can the Digital Futures Foundation Be Financed?

As noted, we see the windfall proceeds of current and anticipated spectrum auctions as a principal source for endowing a ***Digital Futures Foundation***. Even a portion of the available resources generated from this public asset would provide a meaningful endowment for such an institution.

As previously noted, the C-band auction that ended in January 2021 yielded $80.9 billion, while a separate auction in 2020 generated another $4.6 billion. Whether it will be possible to capture a portion of these proceeds to underwrite the start-up of a ***Digital Futures Foundation*** remains to be seen, but even $1-2 billion from this source could provide an initial start-up fund for this foundation.

More significantly, future spectrum auctions likely to yield tens of billions of dollars of additional windfall proceeds are highly likely to start by the end of 2021, with more to follow in subsequent years. We estimate that as much as $50 billion in additional proceeds could be generated from these auctions over the 2021-2023 period. Included here are the following:

➔ ***An auction of licenses for the unassigned portions of the 2.5 GHz Educational Broadband Service (EBS) band of spectrum anticipated in 2021.*** During debate over the future of this band, Commissioner Jessica Rosenworcel (currently the new Acting Chair of the FCC) proposed a PtP-type solution that would have dedicated the proceeds of the auction to address the "homework gap" afflicting millions of students lacking adequate (or any) broadband internet access at home. Although this proposal was not adopted, it could possibly be revisited or merged with the broader effort to address equity gaps we are proposing in this Concept Note. ***Expected proceeds: $2 to $3 billion***.

➔ ***An auction of very valuable spectrum in the lower 3 GHz Band (3450-3550 MHz) mandated by Congress to begin by the end of 2021.*** Currently used for military radar and some other governmental operations, this mid-band spectrum is similar to the C-band spectrum that recently generated $80.9 billion in net federal revenue. ***Expected proceeds: $15 to $25 billion.***

➔ ***An additional large portion of military spectrum in the lower 3 GHz band*** expected to become a candidate for auction within a few years, as military radar systems are upgraded, raising additional billions.

➔ ***A possible auction of the rights to 500 megahertz of upper-mid-band spectrum (from 12.2 to 12.7 GHz) for 5G mobile and fixed broadband services initiated by an FCC rulemaking in January 2021.*** Although this band is currently occupied by satellite services, there is a strong chance that surging demand for more 5G-capable spectrum will result in an auction. ***Potential proceeds: $5 to $20 billion.***

➔ ***A follow-on to the recent successful auctions of High-Frequency (mmW) spectrum bands*** anticipated over the next three-to-five years. ***Potential proceeds: $5 to $10 billion.***

Setting aside even a modest 10-to-20% portion of the revenues from these auctions could provide a substantial endowment for a ***Digital Futures Foundation*** dedicated to narrowing the digital equity gaps identified here.

Why the Time is Ripe for This PtP Spectrum Option

Although gaining the Congressional authorization necessary to dedicate a share of spectrum auction revenue to closing the digital equity gaps may involve challenges, the present moment may now be especially ripe for precisely such a move. This is so for five major reasons:

i) ***The COVID-19 experience has produced a heightened awareness of the vital importance of the nation's digital infrastructure for the everyday lives of Americans.*** Schooling, jobs, government services, telemedicine, public benefit access, environmental monitoring and equity, eldercare, and myriad other public goods are now understood to be dependent as never before on broadband applications, tools, and services.

ii) ***The COVID-19 experience has also demonstrated that this digital ecosystem is uneven, inequitable, and not sufficiently robust to handle the public-purpose demands being put upon it.*** This has triggered a widespread recognition of the need for change that has spread well beyond the provision of basic digital access to encompass as well developing the public-use applications and tools through which full use of these digital resources can be gained.

iii) ***The surging demand for wireless broadband connectivity has triggered an enormous surge in spectrum auction proceeds that could fuel the effort to address these shortcomings.*** As we have seen, these auctions recently generated $85 billion in proceeds and are likely to generate $50 billion or more over the next two to five years. If even 20 or 30 percent of these proceeds were set aside to create a U.S. ***Digital Futures Foundation*** it would produce a foundation with an endowment of $10 billion or more and a programmatic budget of $500 million or more each year dedicated to financing research, experimentation, pilot projects, and information sharing on innovations that promote universal access to an expanded and enhanced collection of public-purpose digital applications, tools, and services. Such a foundation could become a major force in extending the reach, contribution, and equity of the nation's digital system while still leaving substantial resources to contribute to the federal government's general revenues.

iv) ***This basic concept of earmarking spectrum auction revenue for investments in closing the digital divide was actually supported by senior senators of both parties as recently as 2019*** during the debate over a previously authorized auction, albeit without the specific focus or tested organizational vehicle proposed here.

v) ***Finally, fortuitously, Congress needs to renew the FCC's auction authority in 2021 or early 2022***, creating an **enormous opportunity** to include a provision designating future auction proceeds for such a priority public use and for the placement of such proceeds in an independent private foundation with a governance structure Congress can have a hand in devising. Notably, the last time Congress extended the FCC's auction authority (in 2012), it took a similar step and designated $7.5 billion in auction proceeds as seed funding for the FirstNet program described above. The present challenge of closing the digital equity gaps revealed by the COVID crisis rises to the same level of urgency as this prior designation of auction revenue and deserves a similar sharing of auction proceeds and a similar establishment of a suitable vehicle to administer them.

The authority to establish such a foundation—and particularly to channel a share of spectrum auction revenues into it—rests with Congress. Legislation would be needed to define the broad objectives of such an institution and establish its governance structure, including the safeguards needed to preserve the foundation's integrity and independence. Importantly, the foundation should be established as a 501(c)3 independent, private, charitable foundation under U.S. law and chartered in the District of Columbia. Membership on the board would ideally include representatives of government, industry, civil society, and the academic community with expertise in digital technology and the substantive fields in which the foundation will work, with the latter group making up the majority of the Board and holding the Board chairmanship.

CONCLUSION

For most of its relatively short history, the U.S. government's innovations in assigning scarce spectrum rights by auction has focused mainly on building a robust, fair, and competitive business environment for mobile broadband services. What COVID-19 has done is to shine a light on the far more limited attention that has been given to the equally critical public need to close digital equity gaps and leverage broadband to make important public priorities—in education, health care, the environment, workforce recruitment and training, and government services—more effective and accessible for all. Now this imbalance must be addressed.

Fortunately, the PtP concept offers the country a way to address this challenge—to put in place a tested and reliable vehicle for addressing the public-use gaps that exist and a meaningful financing base to support and sustain its activities. Now is the time to seize this option and begin investing the proceeds that broadband auctions generate in digital public goods that will open our digital future to all.

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About the Authors

Lester M. Salamon | lsalamon@jhu.edu

Dr. Lester Salamon is a Professor Emeritus at The Johns Hopkins University, Director of the Johns Hopkins Center for Civil Society Studies, and Director of the Philanthropication thru Privatization Project. He previously served as Director of the Center for Governance and Management Research at the Urban Institute in Washington, D.C. and as Deputy Associate Director of the U.S. Office of Management and Budget in the Executive Office of the President. Dr. Salamon pioneered the empirical study of the nonprofit sector in the United States and has extended this work to other parts of the world. Author or editor of more than 20 books, his most recent include: *Explaining Civil Society Development: A Social Origins Approach* (2017); *The Resilient Sector Revisited: The New Challenge to Nonprofit America* (2015); *The New Frontiers of Philanthropy: A Guide to the New Tools and Actors Reshaping Global Philanthropy and Social Investing* (2014), *Philanthropication thru Privatization: Building Permanent Endowments for the Common Good* (2014); *America's Nonprofit Sector: A Primer, 3rd Ed.* (2012); and *The State of Nonprofit America, Vol. 2* (2012).

Michael A. Calabrese | calabrese@newamerica.org

Michael A. Calabrese directs the Wireless Future Project at New America's Open Technology Institute, a non-profit think tank based in Washington, D.C. He develops and advocates policies to promote universal, fast and affordable wireless broadband connectivity, including the reallocation of more prime spectrum to facilitate unlicensed access, next generation Wi-Fi, dynamic spectrum sharing and broadband competition. Calabrese has served on the U.S. Department of Commerce Spectrum Management Advisory Committee (CSMAC) since 2009 and as an Invited Expert on President Obama's Council of Advisors on Science and Technology (PCAST) spectrum reform working group during 2011-2012. Calabrese has previously served as Vice President of New America (2003-2010), General Counsel of the Congressional Joint Economic Committee, director of domestic policy at the Center for National Policy, and as a counsel at the national AFL-CIO.

How to Close America's Digital Equity Gaps: Toward a Digital Futures Foundation

A joint Concept Note by Michael A. Calabrese & Lester M. Salamon

About the Open Technology Institute at New America | newamerica.org/oti

The Wireless Future Project is part of the Open Technology Institute at New America. New America is a nonprofit policy institute dedicated to renewing the promise of our nation's highest ideals, honestly confronting the challenges caused by rapid technological and social change, and seizing the opportunities those changes create. OTI and Wireless Future work at the intersection of technology and policy to ensure that every community has equitable access to digital technology and its benefits. We promote universal access to communications technologies that are both open and secure, including spectrum policies that encourage more ubiquitous, high-capacity and affordable wireless broadband connectivity for all Americans.

About the Philanthropication thru Privatization Project | p-t-p.org

The Philanthropication thru Privatization (PtP) Project seeks to promote an option for the creation of independent charitable foundations around the world by capturing all or a portion of an assortment of “privatization” transactions involving the transformation of publicly-owned or -controlled assets into private wealth. The Project has thus far identified nearly 650 foundations with assets over US$200 billion that have emerged from such transactions, including some of the largest foundations in the world, such as the Volkswagen Foundation, the King Baudouin Foundation, the Nippon Foundation, over 240 U.S. health conversion foundations, the enormous Italian foundations of banking origin, and Spain's nearly US$30 billion "la Caixa" Foundation. The PtP Project is directed by Dr. Lester M. Salamon, a professor at the Johns Hopkins University and Director of the **Johns Hopkins Center for Civil Society Studies**. Administrative and technical support for the Project is provided by the **East-West Management Institute**, an independent nonprofit organization that has played an instrumental role in building sustainable civil society institutions worldwide.

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