ANALYSIS

The Smartphone-Only Assumption in Program Design and Policy

Digitunity examines device access, participation, and the limits of smartphone-only internet access

Computer ownership is foundational infrastructure for participation in modern systems. Improving educational attainment, workforce participation, healthcare access, and financial stability all depend on the ability to use a personal, connected, large-screen computer at home.

In the United States, 32.9 million people do not have a computer at home.[1] But many programs, systems, and funding decisions assume that smartphone ownership is a reasonable substitute.

This assumption shows up not just in program design and service delivery; it is embedded in how broadband investment has been framed and measured. Federal and state broadband expansion efforts, including programs funded under the federal Infrastructure Investment and Jobs Act, have concentrated resources on broadband adoption and getting households online. These efforts have not given equal attention to whether people have the devices required to use that connection for sustained, complex work.

This explainer examines where the assumption about smartphone-only access breaks down. Learn why the distinction matters for anyone designing services, allocating resources, or building the infrastructure that connects people to education, employment, healthcare, the workforce, and civic participation.

1 Even with a broadband connection, a household's devices can limit access

When someone says they have internet access, the assumption is often that they can do whatever they need to do online. But having broadband at home does not automatically mean a household has the device needed to fully use it. A family may have Wi-Fi but share one aging laptop among four people. Another household may be mobile-first: connected entirely through smartphones and data plans, with no large-screen device at all. In both cases, the connection exists. The capacity to participate fully does not. A household can have internet service and still be limited to a roughly 6-inch screen with no keyboard and no ability to manage files, complete multi-step forms, or participate in remote work.

The widespread ownership of smartphones, which now reaches about 91% of U.S. adults,[2] has reinforced the assumption that smartphone-only access is sufficient. For many households,

smartphones are the more affordable and accessible choice. But the problem is not choice. The problem is that service systems — government benefit programs, healthcare portals, workforce platforms, and educational institutions — were designed as if this choice is neutral. These systems often operate as if smartphones and computers are functionally equivalent.

2 Smartphones and computers are designed for different tasks and situations

This is a distinction about function, not value. Both devices have real utility. The question is what kinds of tasks each device is designed to support. Those differences have real consequences for the people these systems are meant to serve.

Smartphone	Personal computer
Mobile, small-screen device designed for communication, consumption, and quick tasks	Large-screen device (laptop, desktop) designed for sustained work, creation, and complex interaction
App-based, touchscreen navigation	Keyboard, mouse, and multi-window workflows
Optimized for portability and convenience	Optimized for productivity, file management, and secure engagement
Effective for: messaging, alerts, quick lookups	Required for: documents, forms, applications, learning platforms, telehealth, remote work

Computers reach households through multiple pathways

Households may obtain computers through purchases, from their employers or schools, through technology reuse and refurbishment programs, and by informal transfer. Informal transfer includes devices passed down by family or friends — though passed-down devices are often older and may not meet current software or platform requirements.

3 Different devices support different kinds of participation

What separates these two devices is not processing power or price, but whether certain tasks can be completed at all, and how much effort it takes to try.

Screen size and cognitive load. Research consistently finds that small-screen interactions carry higher cognitive load: more navigation errors, greater difficulty retaining information, and reduced effectiveness on visually complex tasks.[3,4] Larger screens are linked to better comprehension and

task completion, though tablets, while offering more screen space than smartphones, often still lack the keyboard and multitasking capabilities required for sustained academic or professional work.

Keyboard and input. Without a physical keyboard and mouse, data entry and document creation are much more difficult. Usability studies show that desktop environments score higher in learnability and efficiency for complex tasks, whereas smartphones perform better only in convenience and portability.[5]

Multitasking and window management. Real-world tasks often require running multiple programs simultaneously — writing while referencing a document or completing a form while uploading a file. Small-screen devices are reported to "interfere with essential functionalities," such as editing documents or participating in group video calls, while running other software.[6] Students explicitly cite the inability to manage multiple windows as a primary limitation.[7]

File creation and management. Managing documents, uploading files, and navigating multi-step forms are all significantly harder on a smartphone. Smartphone-limited internet access offers less functionality than accessing the same content on a computer.[8]

4 Smartphones are beneficial for specific tasks

Smartphones are powerful and widely used tools. They are well-suited for:

- communication and coordination: calls, messages, and alerts
- quick access to information: checking updates, receiving notifications, and completing time-sensitive interactions
- camera-dependent interactions: photographing documents, wound monitoring in telehealth, scanning QR codes, visual check-ins
- supplemental use alongside a personal computer

These strengths explain why smartphones play such a central role in everyday digital life.

The problem with smartphones is not the devices themselves, but rather the unrealistic assumptions that many modern systems make about their capabilities.

5 Smartphones have significant limitations when accessing programs and services

Smartphone-only users face limited participation when systems are optimized for computers. Because smartphones don’t always have the specifications needed for a task,, the task may take longer, involve more mistakes, or prove impossible to complete. This difficulty stems from a mismatch between the tool and the task, rather than from user error.

Multi-step forms and applications. Completing applications that require uploading documents, navigating multiple pages, and managing detailed information is significantly harder on a small touchscreen. This includes applications for public benefits, tax refunds, government identification, financial aid, and employment — the exact moments when people most need systems to work.[9]

Learning platforms and assessments. In surveys of online students, 73% preferred laptops for accessing Learning Management Systems, and only 4–10% rated smartphones as effective for core academic tasks.[10,11] During remote schooling, students relying on smartphones reported specific obstacles — difficulty logging in, submitting assignments, and joining live classes — which computer users did not experience.[12]

Job applications and workforce tools. Preparing a resume, completing complex online applications, and navigating multi-step hiring portals are all significantly harder without a computer.[13,14] Workers without a computer participate less in the labor force than workers who do have one.[15] High smartphone use is associated with lower, not higher, employment intention.[16]

Healthcare portals and telehealth. These platforms allow users to access electronic medical records and communicate with care providers. Computer ownership is a stronger predictor of meaningful engagement with health portals than smartphone access or home internet service alone. [17] Patients without personal computers are more likely to experience technical problems during telehealth visits and rate those visits as lower quality.[18]

Remote work and virtual participation. Remote work, virtual interviews, and professional video calls require stable setups, screen sharing, and the management of multiple windows tasks that smartphones cannot reliably support. The average remote worker earns approximately $4,000 more per year than non-telecommuters.[19] Without a personal computer, that career pathway is largely inaccessible.

AI literacy and emerging digital tools. As AI-based tools become part of everyday work and education, meaningful engagement requires a keyboard, screen space, and file management. Smartphone-only access constrains the development of digital fluency[20] at exactly the moment those skills are becoming foundational to acquiring more advanced AI skills.

6 When systems assume that smartphones are sufficient, they decrease access for some users

When the smartphone is treated as equivalent to a personal computer, the consequences are not distributed evenly. They fall on the people the system is already least likely to reach.

Common downstream effects include:

- **Increased drop-off and incomplete participation.** Users abandon processes that are difficult to complete on a small screen.
- **Workarounds by individuals and staff.** People drive to libraries, borrow devices, or ask for help with tasks that should be manageable at home.
- **Higher administrative burden.** Staff spend time troubleshooting access barriers instead of delivering services.

- **Unequal outcomes across communities**. The difficulty is felt most in low-income households, where smartphone-only rates are highest.[21]

Smartphone-only status is not evenly distributed. Among adults in households earning less than $30,000 annually, 31% rely solely on a smartphone, compared to 9% in households earning $70,000–$99,000.[21] In 2023, 13.5% of American Indian/Alaska Native individuals and 11.4% of Black individuals were smartphone-only, compared to 6.1% of White individuals.[22]

27 pts	Lower labor-force participation rate among prime-age workers without a broadband-enabled home computer, compared to those with one[15]
4–10%	Share of students who rate smartphones as effective for core academic tasks: assessments, simulations, and long-form assignments[10,11]
32.9M	People in the United States without a computer at home; progress to reduce this number has stalled[1]

7 Smartphone-only access creates barriers across sectors

These are illustrative examples drawn from documented patterns across sectors.

Education	Adult education and community college programs explicitly state that smartphones are not sufficient for coursework or assessments.[28] FAFSA completion and live online classes create additional friction for smartphone-only students.[29] Students relying on smartphones faced specific "digital obstacles" that computer users did not. Smartphone-only students are at statistically higher risk of disengagement and lower completion rates.[27]
Workforce	Job seekers without computers find it harder to prepare resumes, complete multi-step hiring portals, and prepare for virtual interviews.[13,14] Without a computer, access to the 37% of U.S. jobs that can be performed at home is essentially out of reach.[30] Computer ownership is a prerequisite for remote work, which offers higher wages, greater flexibility, and better long-term economic mobility.[19]
Healthcare	Patients without personal computers are less likely to use health portals effectively, more likely to experience technical problems during telehealth

	visits, and less likely to rate those visits as high quality.[18] Privacy concerns further deter sensitive engagement on shared or public devices.[25] Computer access is the strongest predictor of beneficial health internet use; stronger than having home internet service alone.[17]
Public Services	Government services are increasingly digital-first. Filing taxes, renewing licenses, and completing benefits applications all require file management and sustained interaction that is difficult on a smartphone alone.[9] When libraries closed during COVID-19, 15% of users lost their main internet access point entirely.[23] A smartphone is often the access point of last resort, not a functional substitute for owning a computer.
Nonprofit Services	Programs that serve low-income populations often assume smartphone access is sufficient. This does not account for the increased burden participants face when completing applications, performing assessments, uploading supporting documents, or participating in digital literacy training on small screens. When device mismatch is not accounted for in program design, staff absorb the burden of workarounds, and participants bear the cost.

8 Computer ownership leads to better outcomes

Access and ownership are not the same. Access means being able to reach a device or an internet connection. Ownership means having reliable, private, ongoing use of your own device, available on your schedule and for your purposes.

Temporary or shared access matters. It allows certain types of participation. But it does not deliver what ownership does.

Computer ownership delivers:

Consistency. Personal ownership provides continuous, on-demand access. When public libraries closed during the COVID-19 pandemic, 15% of users lost their main internet access point entirely.[23] Households that share computers among multiple family members create delays and difficulty for students with time-sensitive assignments.[24]

Privacy and security. Public and shared computers create real barriers for sensitive activities — telehealth visits, reviewing medical records, filing taxes, accessing benefits. Research explicitly notes that public computer labs lack the privacy and security that ownership provides.[25]

Skill development. Computer owners possess substantially higher basic, intermediate, and advanced digital skills than non-owners.[26] Ownership enables the digital fluency that the modern

workforce increasingly requires, such as file management, software proficiency, and AI tool literacy. Broadband adoption without a personal computer does not produce these outcomes.

Long-term trajectory. Compared to non-owners, computer owners have:

- higher quarterly earnings ($700–$1,700 more per quarter)
- higher weekly employment rates (7–12% higher)[26]
- higher college enrollment rates (12–16% higher)
- a higher high school graduation rate (4–6% higher)[27]

The device is not the only factor in these figures. But it is consistently present.

9 Takeaway: Program design must account for the limitations of smartphone-only access

The distinction between smartphone ownership and computer ownership is not a technology question. It is a design question. Every program, policy, and funding decision that treats them as equivalent is making a choice, usually without realizing it, about who gets to participate fully and who doesn't. The question is not whether people have a device. It is whether the device they have enables full participation in the systems that shape their lives. Right now, for 32.9 million people, it does not.

Digitunity works to make computer ownership possible for everyone — by designing and strengthening the systems that make it achievable and durable at scale.

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