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at the MassTech
Collaborative

Mass Broadband Institute
Promoting Digital Equity

Mass Workforce Association – 1/24/2022

Josh Eichen, Program Manager for Partnerships
Cheryl Coss, Manager for Equity, Outreach and Engagement

Agenda

- MBI Overview
- Defining Digital Equity
- Landscape of Federal and State Funding
- Workforce Implications
- Private Sector Case Studies

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MASSACHUSETTS TECHNOLOGY COLLABORATIVE

OUR MISSION: We strengthen the competitiveness of the tech and innovation economy by driving strategic investments, partnerships, and insights that harness the talent of Massachusetts.

THE INNOVATION INSTITUTE	MASSACHUSETTS CENTER for ADVANCED MANUFACTURING	MBI MASSACHUSETTS BROADBAND INSTITUTE	MeHI MASSACHUSETTS eHEALTH INSTITUTE	MassCyberCenter
Mission:	**Mission**:	**Mission:**	**Mission:**	**Mission:**
Innovation Economy	*Advanced Manufacturing*	*Broadband*	*Digital Health and Caregiving*	*Cybersecurity*

MBI's mission is to make affordable high-speed Internet available to all homes, businesses, schools, libraries, medical facilities, government offices, and other public places across the Commonwealth. MBI works closely with key stakeholders to bridge the digital divide in Massachusetts.

Defining Digital Equity

Digital Equity:

Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.

– National Digital Inclusion Alliance

Image Source: Detroit Community Technology Project

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Determining Factors of Digital Access

Connection

Fast
Affordable

Adequate Device

Router
Personal Computer /Laptop

Literacy

Use of Technology
Ensuring functioning equipment
Evaluating quality of information and privacy risks

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Digital Equity & Workforce

Relevant Broadband / Digital Equity Industries and Occupations

- Fiber Construction / Cabling
- Managed Service Provider / Network Engineering
- Community Health Worker (Digital / Telehealth Navigator)
- Cybersecurity
- Device Support & Refurbishment / Help Desk

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Broadband & Digital Equity Funding Overview

$50M - State ARPA Digital Equity Fund
- Partnerships Program
- Municipal Digital Equity Planning Program

$175M - US Treasury Capital Projects Fund

$1M - NTIA Digital Equity Act Planning Grant
- To be followed by formula capacity grants (to be allocated)

$5M - NTIA Broadband Equity, Access, and Deployment Initial Application Grant
- To be followed by formula capacity grants ($100M floor – additional funds to be allocated)

Digital Equity Partnerships Program Overview

Overview

- MBI seeks 10 - 15 organizations to join the Digital Equity Partnership Program to support the deployment of six initiatives in one or more of the following areas:

- Once selected as partners, these entities will have fiduciary and technical responsibilities associated with executing the grant funding, as well as access to resources designed to build capacity and expertise in digital equity implementation activities.

Program Goals

- Eliminate documented barriers to digital access among populations experiencing disproportionate impact from the COVID Pandemic.

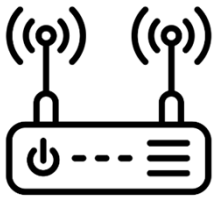
- The six program areas specifically correspond to one or multiple of the key elements of digital equity:
  - Access to the internet
  - Access to a device
  - Digital Literacy

Digital Literacy

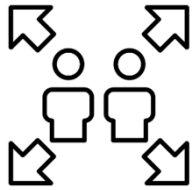
WiFi Access

Public Space Internet Modernization

Connectivity for Economic Hardship



Device Distribution and Refurbishment



Education, Outreach, and Adoption

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Existing Projects

Apartment WiFi Internet Access
Chelsea Housing Authority – Prattville Apartments

ACP Outreach and Adoption
Make it Haverhill and Moroccan American Connections in Revere (MACIR)

Telehealth Navigator
North Shore and Lynn Community Health Centers

Municipal Digital Equity Planning

Overview

- MBI will fund Municipal Digital Equity Planning Activities
  - **Charrette Model** – Similar to Municipal Vulnerability Planning Program
  - **Planning Model** – Similar to a Master Plan Chapter, or Economic Development, HPP, OSRP, or other topic specific planning activities.

- Will be made available for individual municipalities, but regional collaboration is encouraged.

Program Goals

- Guide **municipal decision-making** related to services and infrastructure that will increase access, adoption and usage of the internet for the populations most impacted by the COVID 19 pandemic.

- Prepare municipalities to **submit grant proposals** to existing or forthcoming state or federal programs to support digital equity activities.

Example Plan: Chelsea, Everett, Revere Digital Equity and Access Plan, MAPC 2022

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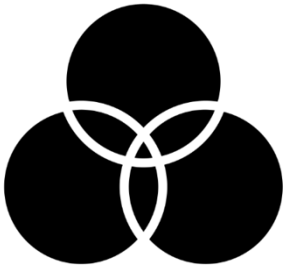
Why Conduct a Digital Equity Plan?



Align areas of interest and get leadership buy in

Build capacity and understanding of root issues

Prepare for State and Federal Funding

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Whose Job is it to Solve the Digital Divide?

- Planners
- Libraries
- School Districts
- Vocational Schools
- Community Colleges
- IT Directors
- Housing Authorities
- Healthcare Providers
- Workforce Boards
- Community Based Organizations
- Elected Officials
- Private Sector????

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Broadband & Digital Equity Funding Overview

$145M - US Treasury Capital Projects Fund – Last Mile Connections (RFP Forthcoming)

Workforce Implications -

- Last mile network connections to households w/out internet.
- Fiber construction firms contracted through ISP's will likely be the private sector demand driver.

Digital Equity Funding Landscape

Broadband Equity, Access, and Deployment Program

$42.45 billion – Allocated across US States and Territories - Massachusetts allocation has not yet been determined

BEAD program requirements include **workforce development planning, MWBE procurement, and high labor standards.**

Occupations Relevant to BEAD Funding

- Construction Laborers
- Customer Service Representatives
- Electrical Power-Line Installers and Repairers
- Electrical, Electronic, and Electromechanical Assemblers
- Electricians
- First-Line Supervisors of Construction Trades
- First-Line Supervisors of Mechanics and Installers
- Miscellaneous Assemblers and Fabricators
- Operating Engineers and Other Construction Operators
- Personal Service Managers
- Project Management and Business Operations Specialists
- Sales Representatives of Services
- Telecommunications Equipment Installers and Repairers
- Telecommunications Line Installers and Repairers

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Digital Skills

Job Type	Digital Skill mentioned in job posting	Job Postings in MA (Nov 2022 – June 2022)	Median Advertised Salary
All Jobs	Zoom	7,571	$58,600
Remote Jobs	Zoom	1,504	$71,600
All Jobs	Microsoft Office	83,210	$57,000
Remote Jobs	Microsoft Office	7,587	$70,100
All Jobs	Google Suite	7,307	$52,200
Remote Jobs	Google Suite	1,065	$60,000

% Change of Digital Skills across Industries

Industry	% of job postings that mention Digital Skills (Nov 2018 – June 2018)	% of job postings that mention Digital Skills (Nov 2022 – June 2022)
Manufacturing	9%	14%
Healthcare	8%	12
Hospitality	4%	8%
Retail	2%	7%

Job Postings in MA

Job Type	Job Postings in MA (Nov 2022 – June 2022)	Median Advertised Salary
All Jobs	1.03 million	$50,100
Remote Jobs	67,287	$88,500

Hub66

MWA Promoting Digital Equity

January 24, 2023

Highly Confidential

Hub66
Connect to more.

AGENDA

- About Hub66
- Commitment to Hiring Local
- Workforce Strategy

EXECUTIVE SUMMARY

Helping to close the Internet gap by providing affordable, high-speed, fiber Internet access to traditionally underserved communities.

COMPANY HIGHLIGHTS

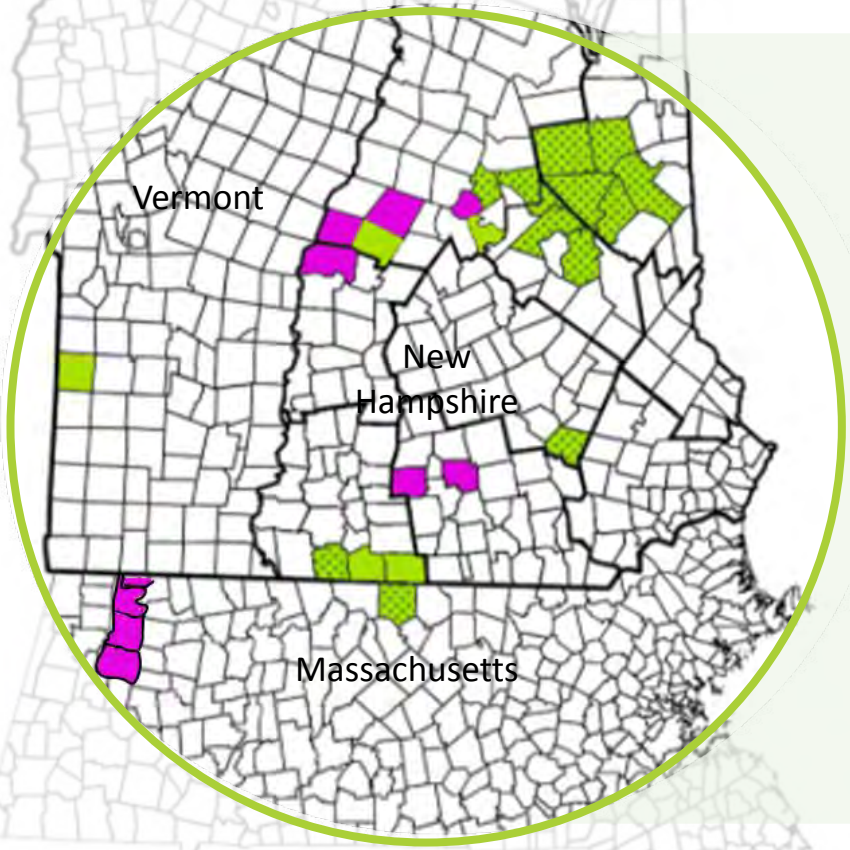
- Hub66, a **woman-owned and led** Internet Service Provider (ISP), connecting residents, businesses, and municipalities, in **rural NH, VT, and MA** with **affordable**, **high-speed fiber-optic internet**.
- We're a **technology forward** company, combining **advanced technologies** with **entrepreneurial nimbleness**.
- Our fiber to the home (FTTH) business is comprised of **Hub66 owned fiber** and **commercial fiber network leases**
- Our fixed wireless business (WISP) is comprised of a **fiber-backhaul delivered to a cell tower**, with a radio signal transmitted 'the last mile'.

2023 AND BEYOND

As Hub66 continues to expand, we see a significant gap in our ability to hire and build a local, in-house team. Our company was founded just months before the pandemic, and we are looking to grow quickly, but find ourselves struggling to find the right talent and often have to depend on outsourcing.

SERVICE AREAS

Hub66 is well positioned to expand rapidly across New England, with established relationships across many communities.



Our current footprint includes:

7
Wireless Towers

5
Off-grid sites serving 20+ communities with Fixed Wireless

7
Geographic areas with FTTH

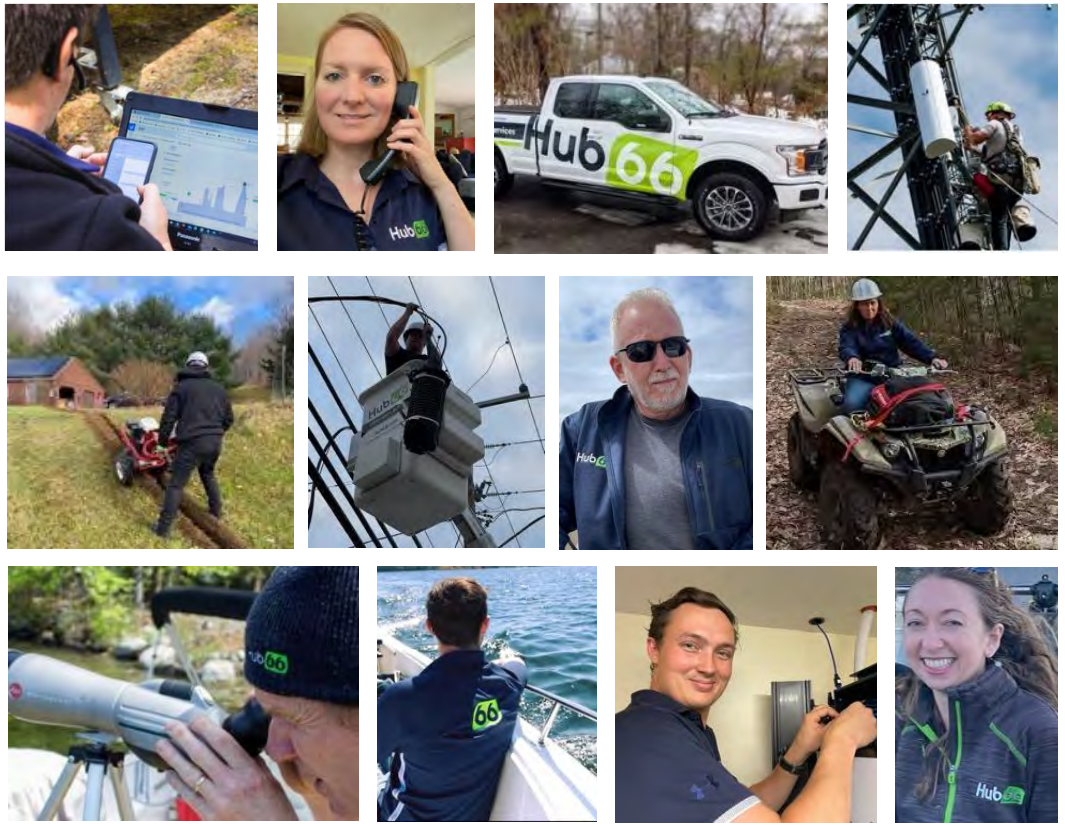
Fiber to the home (FTTH)
Fixed Wireless (WISP)
Future Expansion

100% LOCAL

Our in-house capabilities include customer service, field design, network engineering, line work, and fiber splicing.

- Local Customer Service.
- Local Technicians.
- Local Outside Plant.
- Local Network Engineers

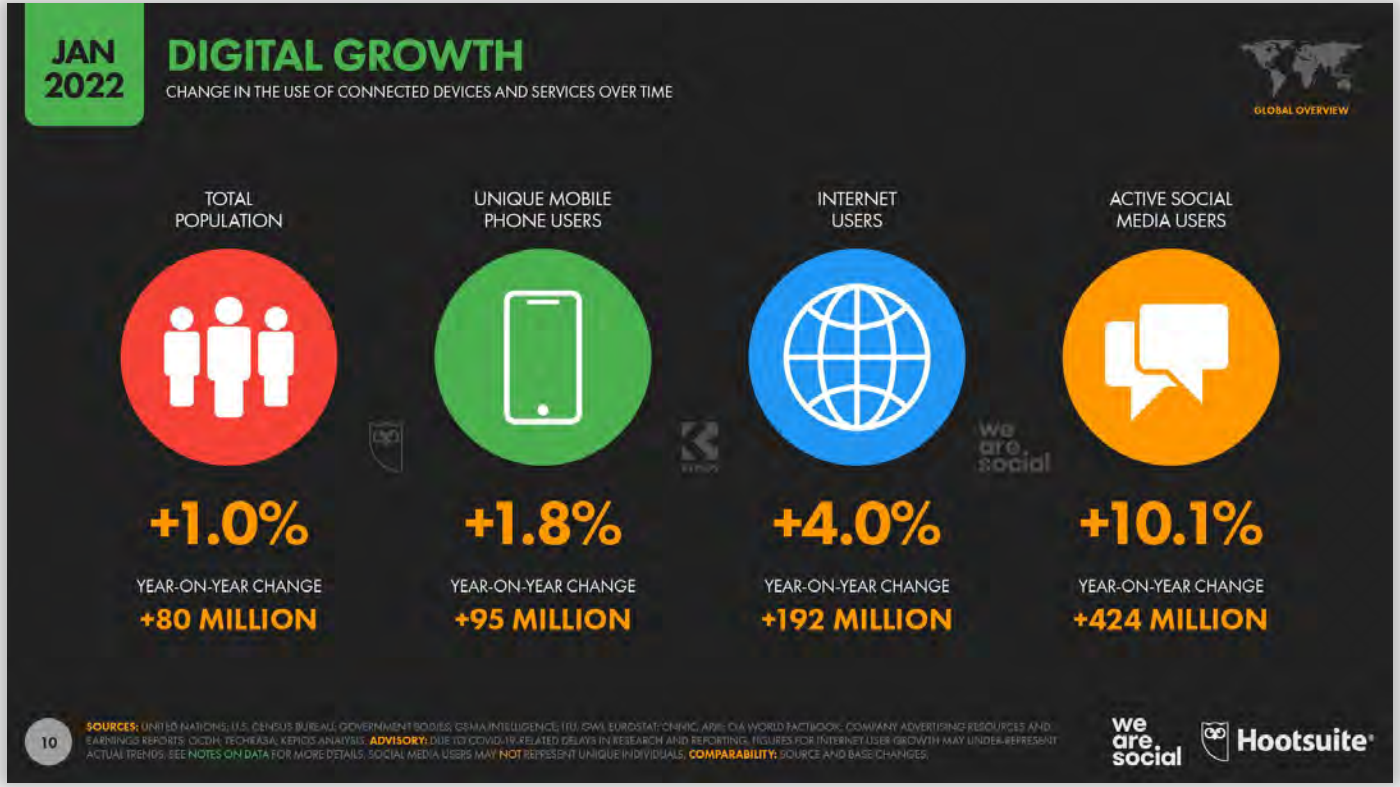
…and currently hiring for new employees.



DIGITAL GROWTH* YEAR OVER YEAR

Digital Growth Continues to Explode

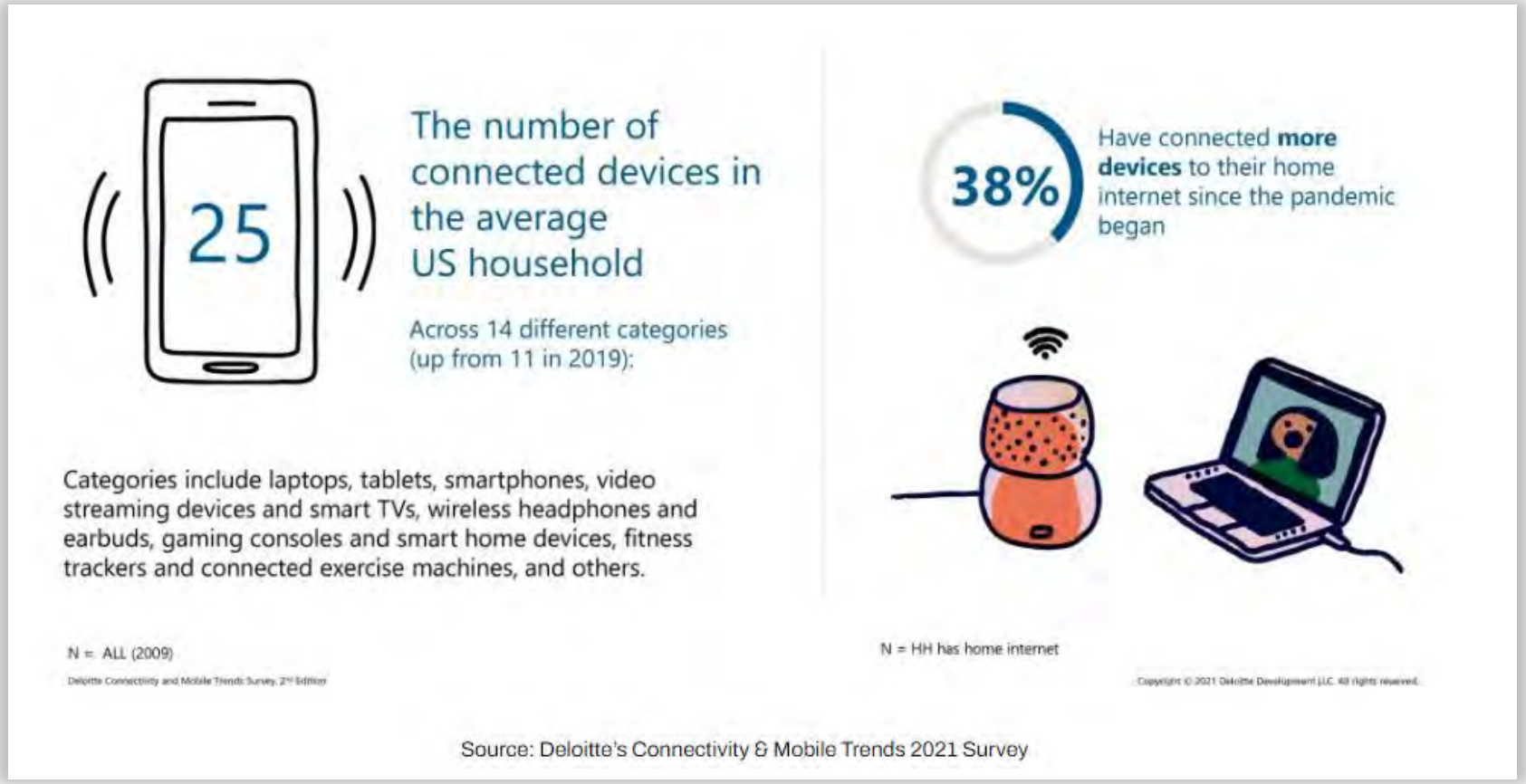
With more users online than ever, on more devices than ever with ever-increasing ways people can work, play and connect digitally.



*Hootsuite [datareportal]

TECHNOLOGY DEMANDS GROW WITH HOUSEHOLD NEEDS

Household are using more devices than ever, and connecting them simultaneously, driving the need for better technology.



Source: Deloitte's Connectivity & Mobile Trends 2021 Survey

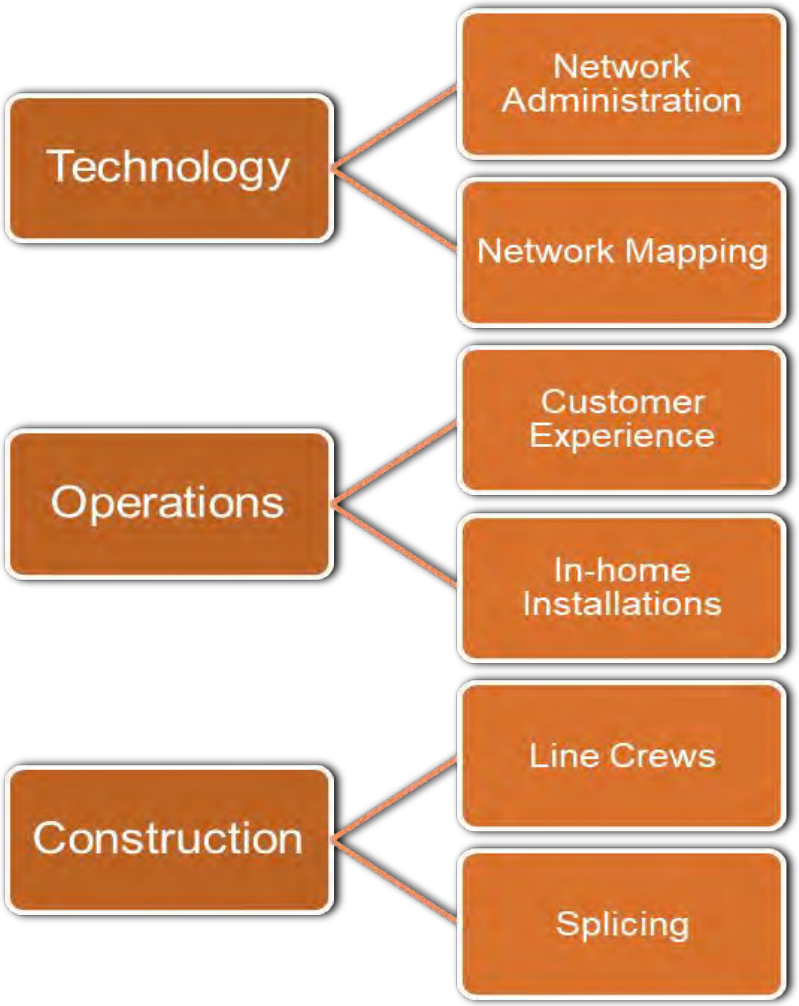
WORKFORCE NEEDS

While there's increased focus on providing equal access to the Internet, resources are needed to build these networks and our team is filling gaps as many customers struggle with new technology.

It Takes a Village

We're looking to expand **in-house capabilities** to strengthen and grow the company.

In addition, we **need to provide extensive training on current digital technology** to assist customers that struggle with the ability to consume and utilize technology.



Mass General Brigham

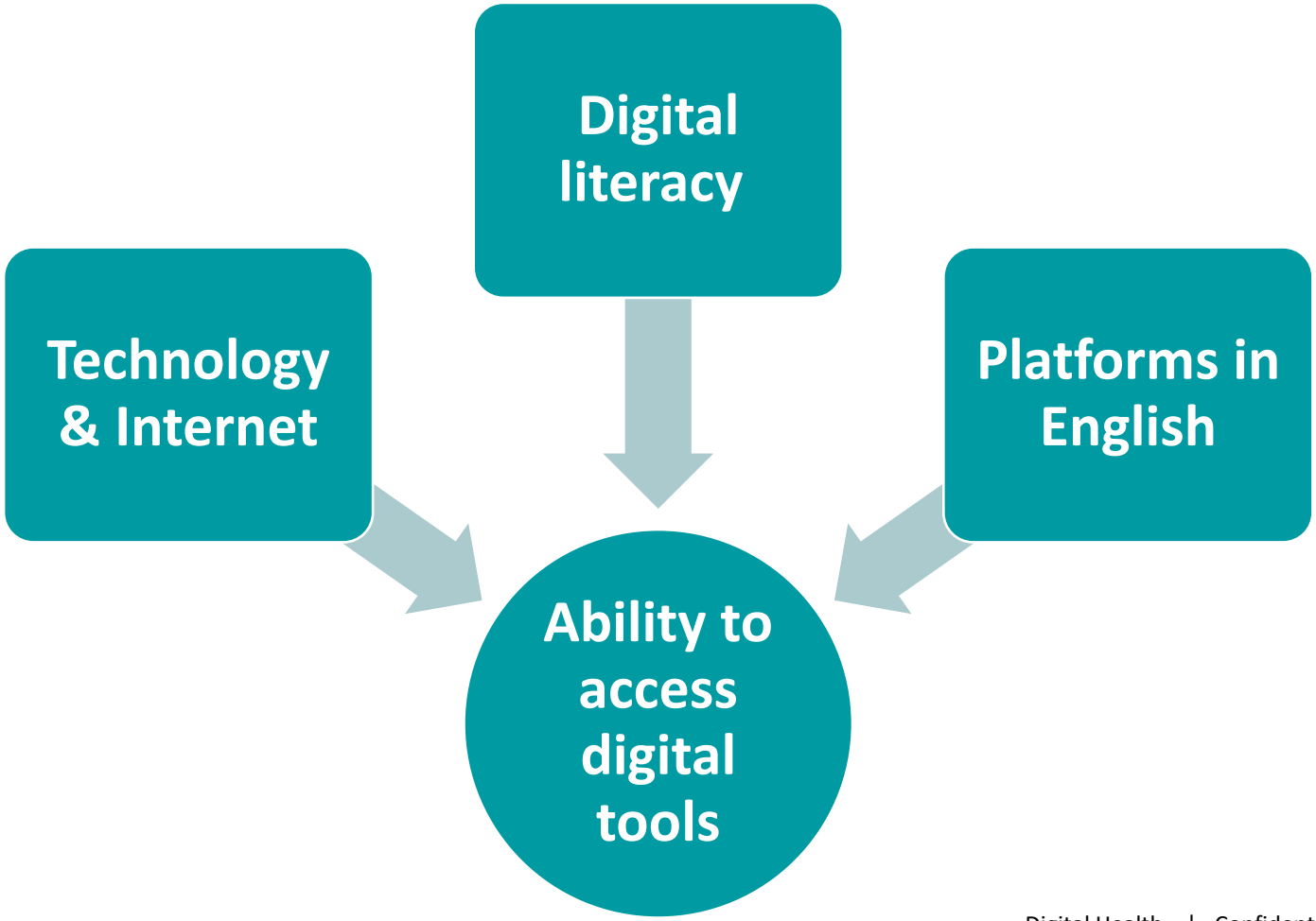
Digital Access Coordinator Program

Michelle Zelen
Sr. Program Manager

January 24, 2023

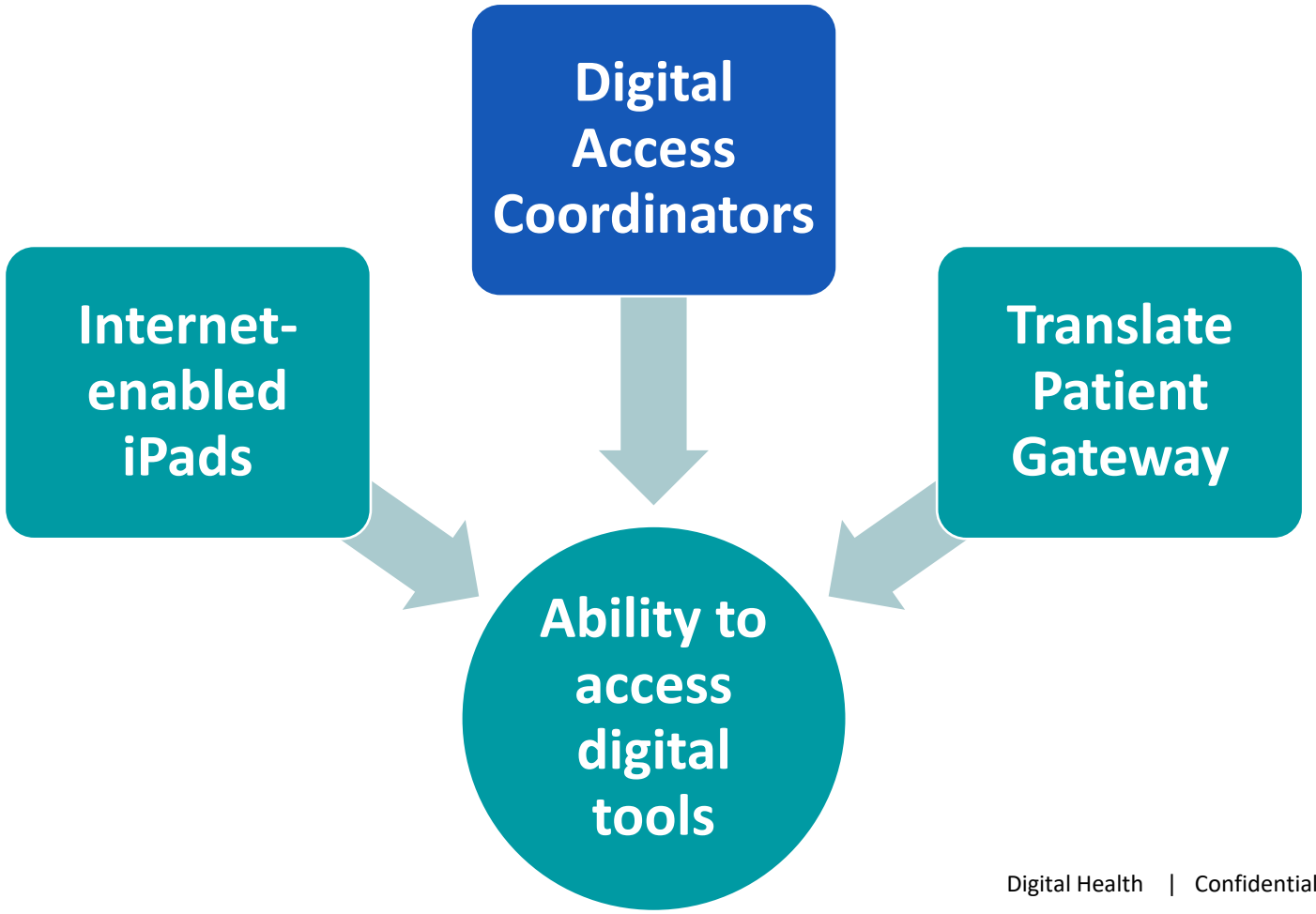
The Challenge

Patients face overlapping **barriers** to accessing virtual care and digital health tools:



The Solution: The United Against Racism Initiative

The **Digital Access Coordinator (DAC) Program** addresses digital literacy disparities.



Digital Access Coordinator Program

What is the Digital Access Coordinator Program?

- A team of Digital Access Coordinators (DACs) whose goal is to address gaps in digital literacy among MGB's patient population.

- DACs are available to **enroll and train** patients to use Patient Gateway and other digital health tools.

Janelle – DAC at PMA Lawrence

Who are the Digital Access Coordinators?

- Bilingual team covering the top non-English languages spoken by our patients:
  - Spanish (7 FTEs)
  - Brazilian Portuguese (1 FTE)
  - Haitian Creole (1 FTE)
  - Russian (1 FTE)
  - Cantonese
  - Mandarin (1 FTE)
  - Arabic (1 FTE)

Meeting Patients Where They're At

At the Clinic

- In-person assistance offered at patient's primary care doctor's office
- Ideal for teaching new skills

At Home (on the phone)

- Where patients will be using our digital tools most often
- Difficult to reach patients (may take >3 calls)
- Utilize video chat, screen sharing

In the Community *_Future_*

- Build trust
- Access some difficult-to-reach patients
- Better match DAC languages to patients

Hiring Strategy/Requirements

- High school diploma or GED
- ★ Hire DACs that have ties to the communities they serve *(i.e. better understanding of cultural backgrounds, establish rapport and trust with patients, insight into what their patients need)*
- Bilingual skills
- Strong customer service/communication skills
- Flexibility/adaptability to changing program requirements
- Comfort level with technology and technical terminology
- Quick learner
- Microsoft Office Proficiency
- Language Proficiency Assessment through vendor
  - Listening & Speaking assessment; must score >= 8

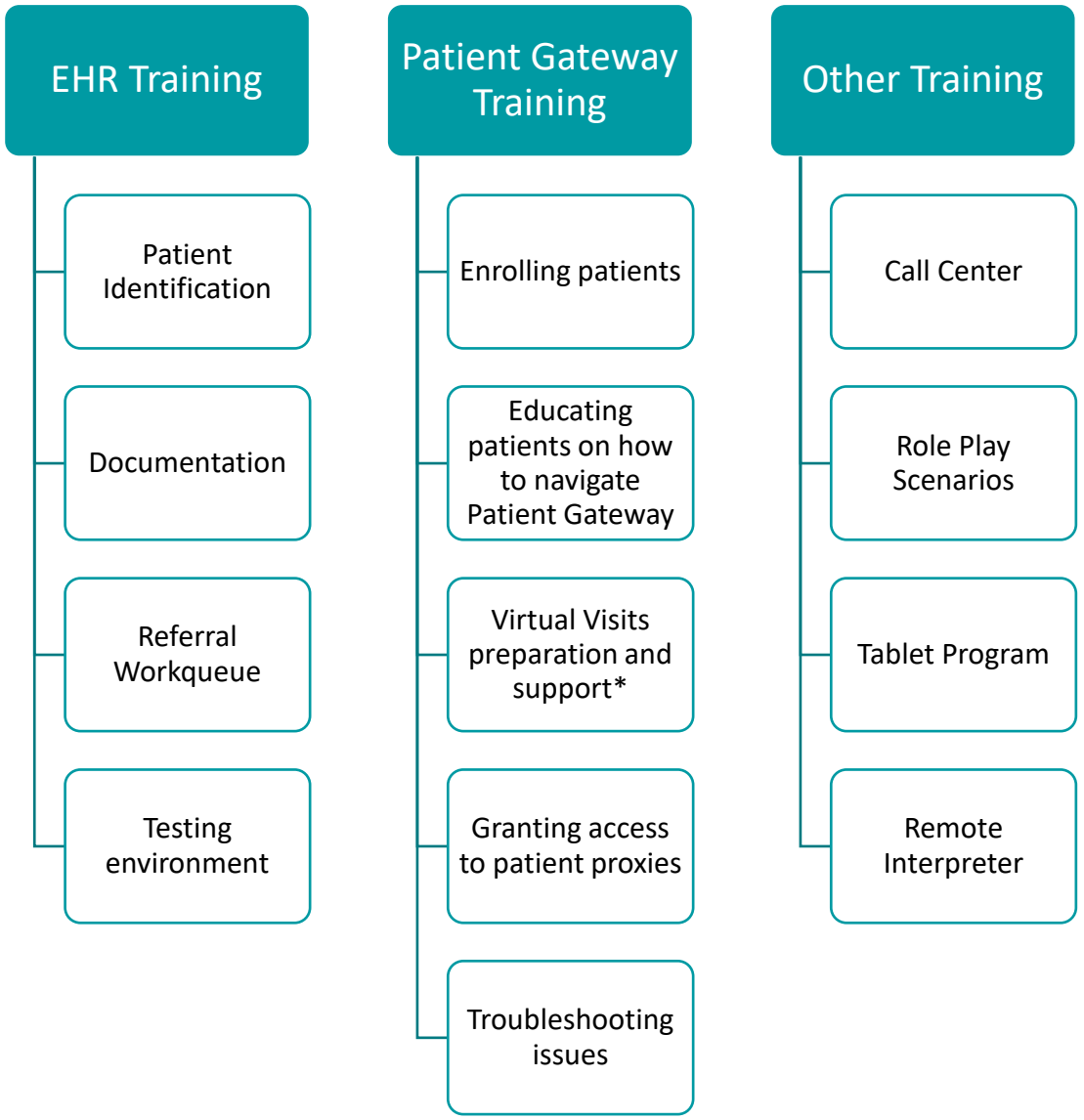
Onboarding

DACs are hired, trained, and onboarded centrally

- Timeline: 2-3 weeks

Corporate New Hire Orientation	Program Mission and Goals	Onboarding Curriculum (80+ page training document)	Review Team Structure/Meet & Greets
Cultural Competency trainings	EHR Access and Training	Patient Gateway Training	Site visit and Introduction to staff
	Setup Jabber Phone and Voicemail	Shadow DAC in Clinic	

Training



*For technical support during a Virtual Visit, patients are directed to the Patient Gateway Help Desk.

Thinking Ahead

Enter new healthcare settings

Expand DAC expertise to additional tools and resources

Evolve program goals towards engagement

Publish evaluation and share lessons learned, best practices

DAC Experience

*"Being part of the Digital Access team at Mass General Brigham has been very rewarding to me**. I believe we are already making an impact in helping bridge the gap in making digital health more accessible to everyone.** We are doing this by tackling problems like language barriers, providing access to technology, and assisting patients with navigating their digital health tools. A lot of the patients we are helping are very appreciative of what we are doing and feel more empowered as a result."*

- Janelle Mercedes Vargas, DAC

Appendix

DAC Testimonials

DAC	Site	Testimonial	Reported By
Jasmary	SJP	Yesterday I spoke with one of the patients who is part of the tablet loan program. Patient stated how grateful she was of being able to have the tablet with her. She cried of joy the very first day that she joined the group as it was the very first time after two years that she was able to see all the BH staff members again. She is so happy we have this program available qualified patients.	DAC
Ariel	BWH Brookside	So yesterday I had a bit of a funny encounter on the phone with a patient. It was a bit of a struggle getting her enrolled at first due to trouble with helping her set up her username and password, but by the end of it we were laughing at the ordeal and had her set up with PG. She got really excited when we were navigating PG and pumping herself up saying how ready she was to start using her PG.	DAC
Carla	MGH Chelsea	This morning I encountered a patient who was a young adult and she was having issues logging into her PG. Once I was done helping her, she stated that it was great to have someone designated on site for PG help because that avoids calls and wait times. It stood out to me because I know that elder patients who are interested in PG generally show appreciation but to hear it from a 25 yr. old is not that common and it was a cherishable moment.	DAC
Janelle	PMA Lawrence	Good Morning to all. I had a patient last week, that approached me and I thought he needed help with PG. He told me: "I just wanted to Thank You for helping enroll in Patient Gateway last time I was here, it has been of great use to me, I just wanted to let you know." That was nice to hear =)	DAC
Ariel	BWH Brookside	After I'd been having a back and forth with a patient here at BCHC for about 2 weeks now who was trying to self enroll but was unable to complete the process and finally yesterday we were able to connect and walk-through enrollment and education. I worried that the patient was getting annoyed with the contact attempts but she after we had finished enrollment, she mentioned how she appreciated the time and patience that went into making sure she was able to connect to the program.	DAC
Sheriden	MGH Main Campus - Yawkey	I helped a 78-year-old patient who came from NY. He did a bunch of tests on MGH main campus and was very urged to see all his lab results but couldn’t enroll by himself even tried a couple of times. So, the front desk brought him to me. I helped him register and set up a passcode for him to log in easier every time. Thanks to his corporation and patience for giving me all the info I need. After he logged into PG, he was so excited that he showed me his lab results and immediately sent a message to one of his doctors. I also learned a new “FISH test” from this patient. I felt that he educated me at the same time. And he could not wait for this result to come up, and his doctor told him this test had to wait one week to get it. It was a pleasant experience, and he even got his cell phone charged at my little desk beside the PG enrollment!	DAC
Janelle	PMA Lawrence	Janelle has become an ambassador for MGB, not only assisting patients with the patient getaway, she is helping the patients clarify appointment dates and answer questions in a very professional way. We are fortunate to have her at Riverwalk	Site

Program Recognition

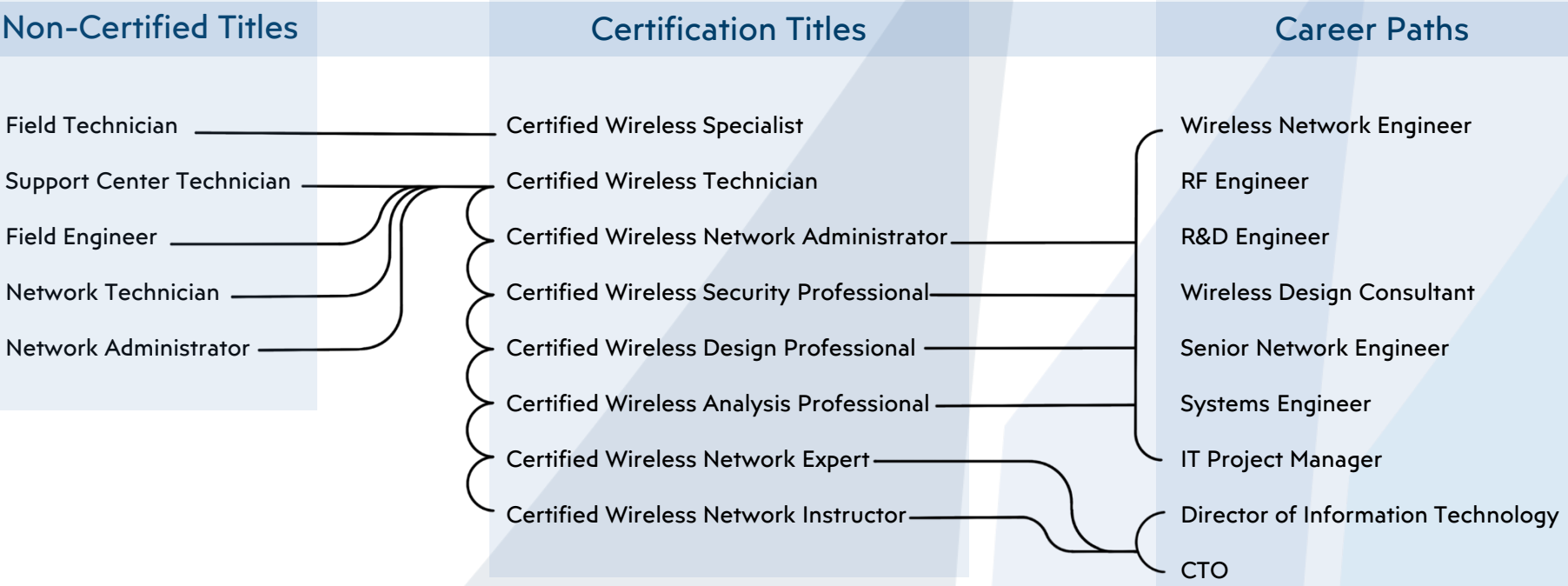
Mass General Brigham

Pillars of Excellence Awards

BENTON INSTITUTE for BROADBAND & SOCIETY

Mass General Brigham

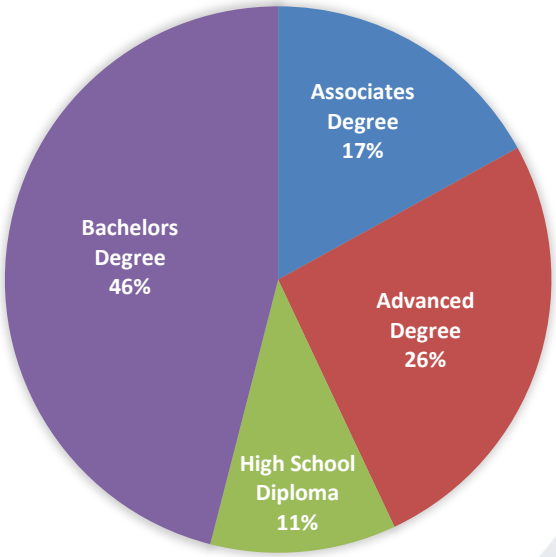
Wireless Network Engineer Career Paths



This tree represents examples of career paths for wireless network engineers. There are many more branches that can be explored beyond this presentation depending on the organization.

Job Market

Education



More than 70% of respondents have a High School diploma, an Associates degree, or a Bachelor's degree.

** Based on CWNP 2022 Annual Survey*

This indicates that most certified engineers did not need an advanced degree in order to get involved with CWNP certifications. Industry organizations provide sufficient education for wireless professionals to get started with four years or less of education.

Challenges

- Introducing yourself to the industry (where to begin?)
- Finding the right employer
- Gaining native knowledge (learning on your own)
- Building a reputation in the wireless industry
- Constant technology refresh (can also be a market benefit)

Benefits

- ✓ *Some jobs are tailored for travel*
- ✓ *Some jobs are tailored for work-from-home*
- ✓ *Wireless technology will never be outgrown or deprecated*
- ✓ *Higher education is not required for all wireless engineering career paths*

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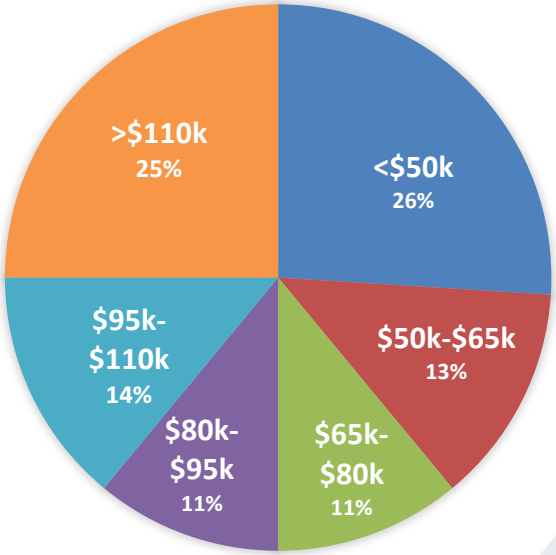
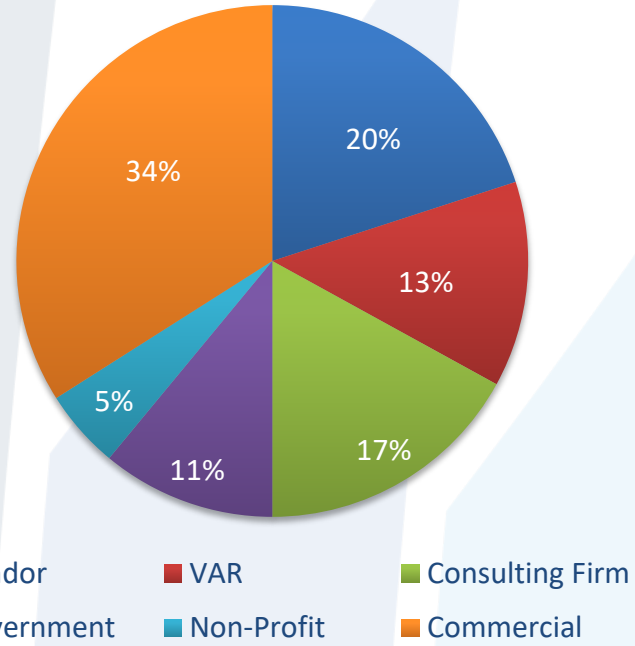
Salary

Compensation



Total compensation of certified engineers.
(includes bonuses & benefits)
** Based on CWNP 2022 Annual Survey*

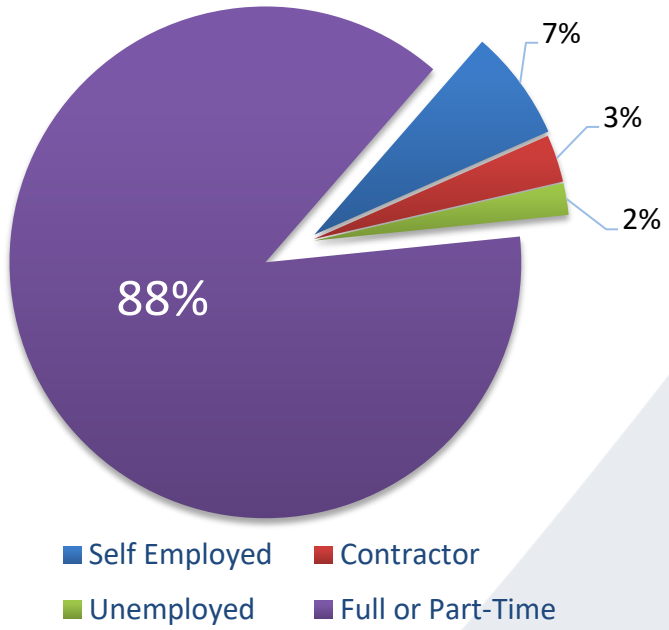
Organization



Employment organization examples for wireless engineers
More than half of the engineers who participated in data collection surveys work for commercial organizations or wireless vendors.
** Based on CWNP 2022 Annual Survey*

Employment & Industry Growth

Employment Rate



88% of respondents are employed full-time or part-time.

The current unemployment rate for certified wireless engineers is 2% which is lower than the average global unemployment rate forecast for 2022 at 3.6%.

** Based on CWNP 2022 Annual Survey*

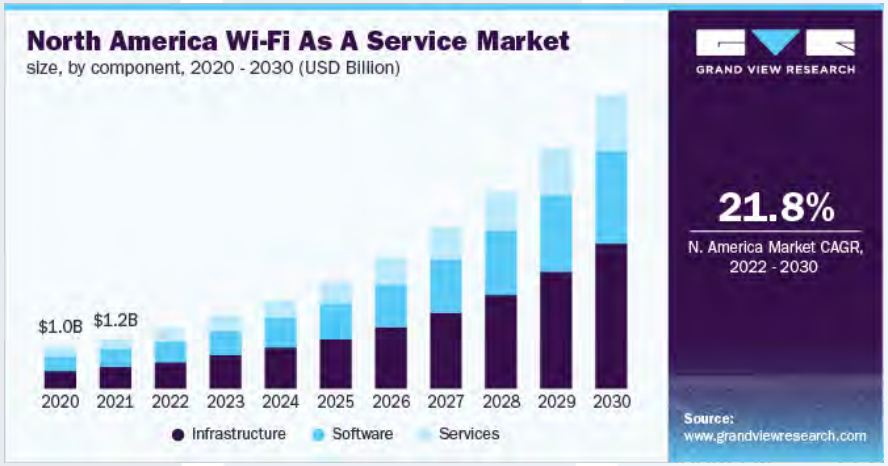
Industry Growth

The global Wi-Fi market reached a value of US $24.2 Billion in 2021, with USA being the largest area of growth worldwide. Looking forward, market is expected to reach a value of US $54.,53 Billion by 2027, exhibiting a growth rate of 13.7% during 2022-2027.

** Based on IMARC Global WiFi Report 2022*

Wi-Fi As A Service market growth is following a similar trend due to the affordability and scalability of these service types.

** Based on Grand View Research 2022 report*



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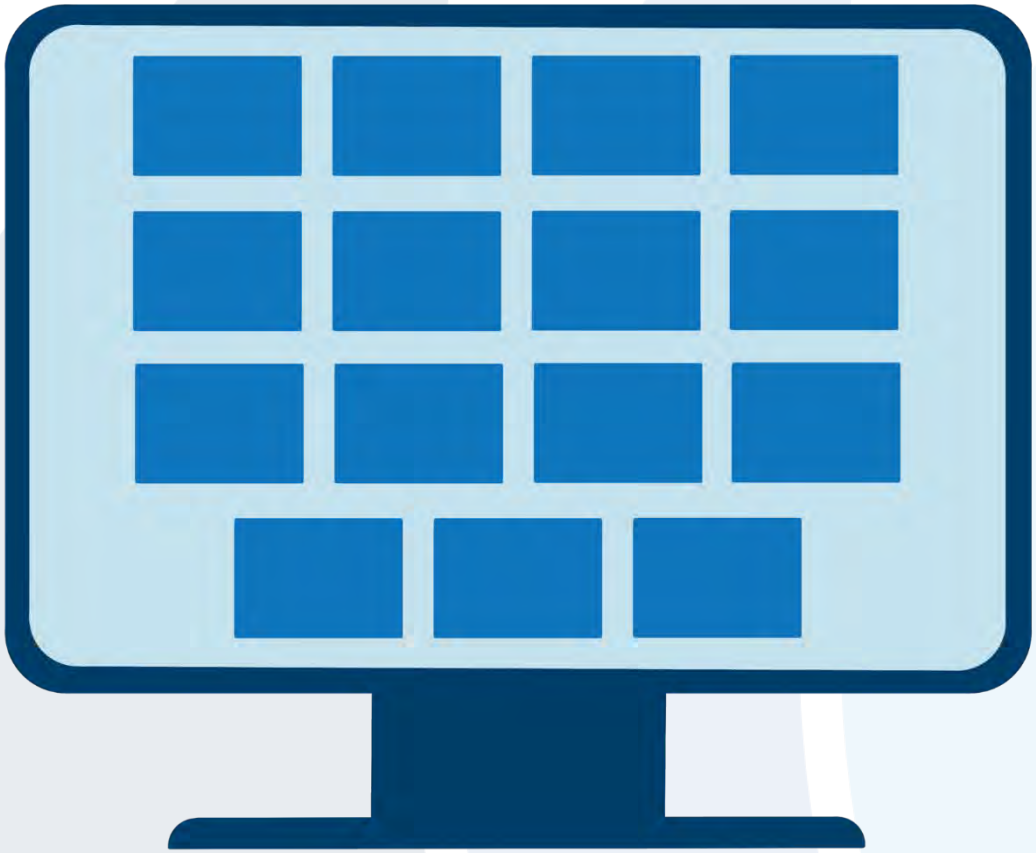
What does it take to make a successful enterprise video conference call?

Sample list of jobs involved:

- Software engineer
- Software test engineer
- Project manager
- Graphic artist
- User interface developer
- Network engineer
- Wireless network engineer
- ISP deployment technician
- IT administrator
- Support center technician
- Network operations engineer