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A Comprehensive Framework to Monitor, Evaluate, and Guide Broadband and Digital Equity Policy

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Agenda

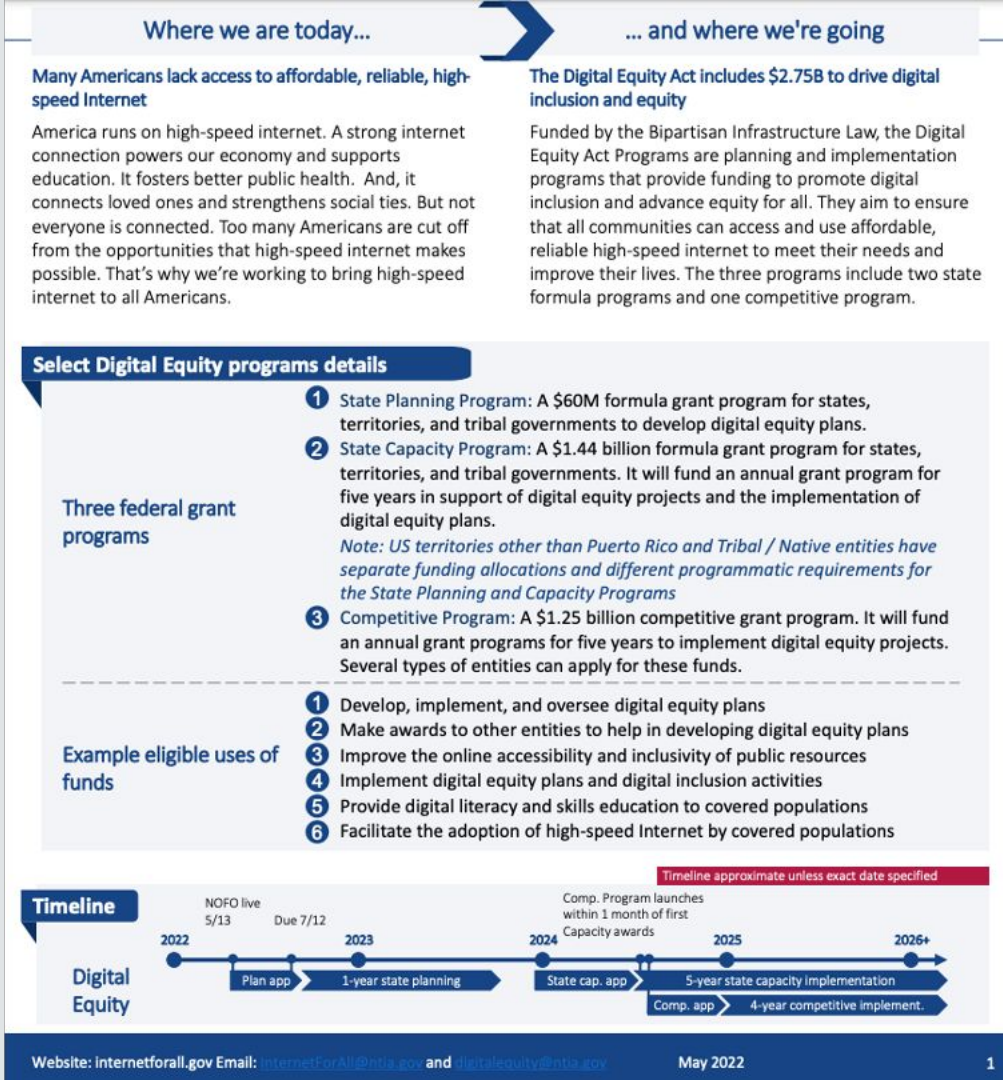
- Federal Funding Landscape
- Beyond the Access Triangle - Proposing a Holistic Picture of Digital Inclusion
- Development of Digital Opportunities Compass Discussion
- Framework
- Potential Applications and Benefits Overview
- Levels of the Digital Divide
- Compass Components and Indicators
- How do these align with current strategies?
- How might your thinking and strategy expand in meaningful ways?
- Which components are relevant to this expansion?
- Using the Compass in Practice
- Practitioner Pilots and Grant Projects

Background

- Bipartisan Infrastructure Bill of 2021
  - Significant investment of taxpayer resources to improve broadband connectivity
  - Multiple evaluation and assessment requirements (BEAD, Digital Equity Act)
- Unique window of opportunity for broadband policy research
  - Decentralized implementation creates vast natural experiment
  - Local and state variation can be examined to assess past and guide future policy
- $ Billions available to states and organizations (like OCC)

The Digital Equity Act

The Digital Equity Act provides $2.75 billion to establish three grant programs that promote digital equity and inclusion. They aim to ensure that all people and communities have the skills, technology, and capacity needed to reap the full benefits of our digital economy.



Beyond the Access Triangle - Proposing a Holistic Picture of Digital Inclusion

- **The Digital Opportunities Compass is a measurement framework to guide state and local policy at a moment of unprecedented investment in broadband infrastructure and digital equity nationwide.**

- **Builds on over 25 years of research and experience related to how broadband and device access, affordability, and digital skills relate to digital equity and broader social and development outcomes.**

- **This body of research or experience suggests that digital equity can be achieved more sustainably if the entire broadband ecosystem is considered.**

Presentation Goals

- Explore ways to expand your thinking about digital equity and its relationship to higher education
- Provide a basis for assessment, opportunity identification, and strategy development
- Encourage Digital Equity Act and other Grant Applications
- Introduce a process at the local level to build holistic, sustainable digital equity strategies

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Digital Opportunities Compass

Metrics to Monitor, Evaluate, and Guide Broadband and Digital Equity Policy

By Colin Rhinesmith, Pierrette Renée Dagg, Johannes M. Bauer, Greta Byrum, and Aaron Schill

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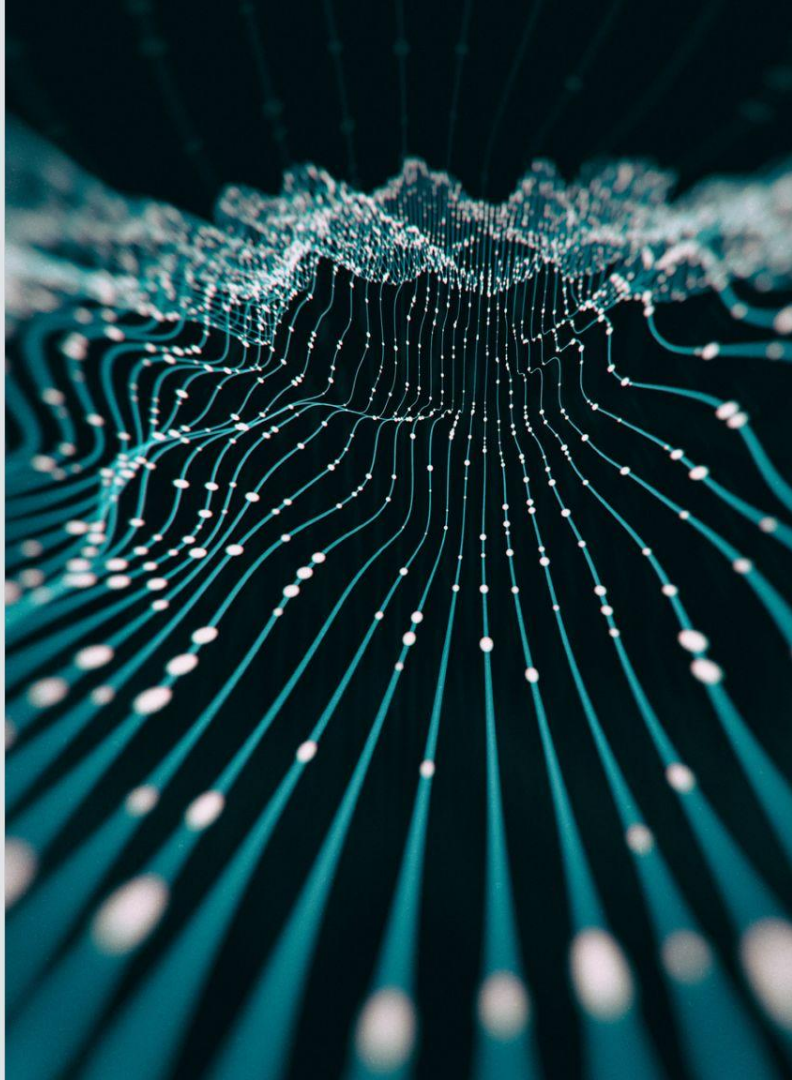
Potential Applications and Benefits Overview

The Compass Framework and practitioner tool can be used to:

- Identify key groups of factors that influence digital equity efforts and outcomes
- Measure and assess digital equity efforts and outcomes over time
- Utilize a standardized core set of metrics that can be expanded and customized to meet state and community needs
- When possible, build on existing data and indicies
- Augment existing data with new (qualitative and quantitative) data
- Innovatively design infrastructure to help automate data collection (e.g., quality measurement in routers)
- Evaluate grant applications
- Support the development of grant narratives and measurement approaches



Levels of the Digital Divide

- **Network and device access** (first level)

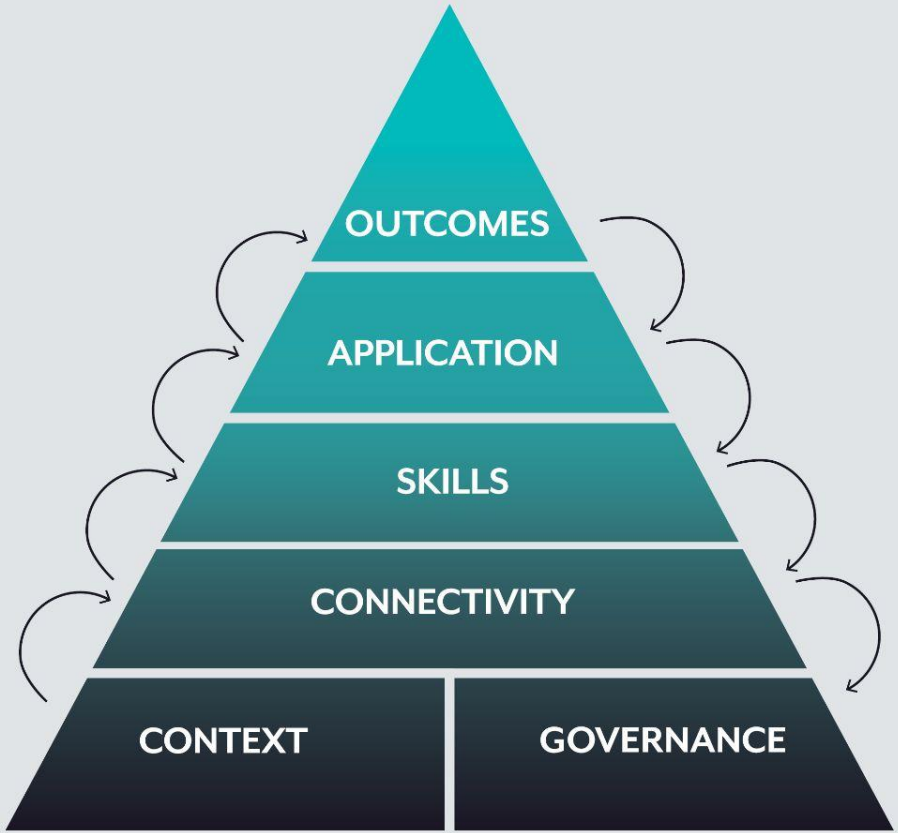
  Necessary but not sufficient to realize benefits of digital connectivity, requires alignment of local, state and federal policies

- **Digital skills and literacy** (second level)

  Necessary to utilize available technology for individual and social benefit, requires changes across all education systems, from K-12, post-secondary, and lifelong education

- **Uses and outcomes** (third level)

  Requires human-centric design of digital solutions, legal and institutional adjustments to change practices of health care, education, ...



Six Components and Indicator areas

#1 Contexts

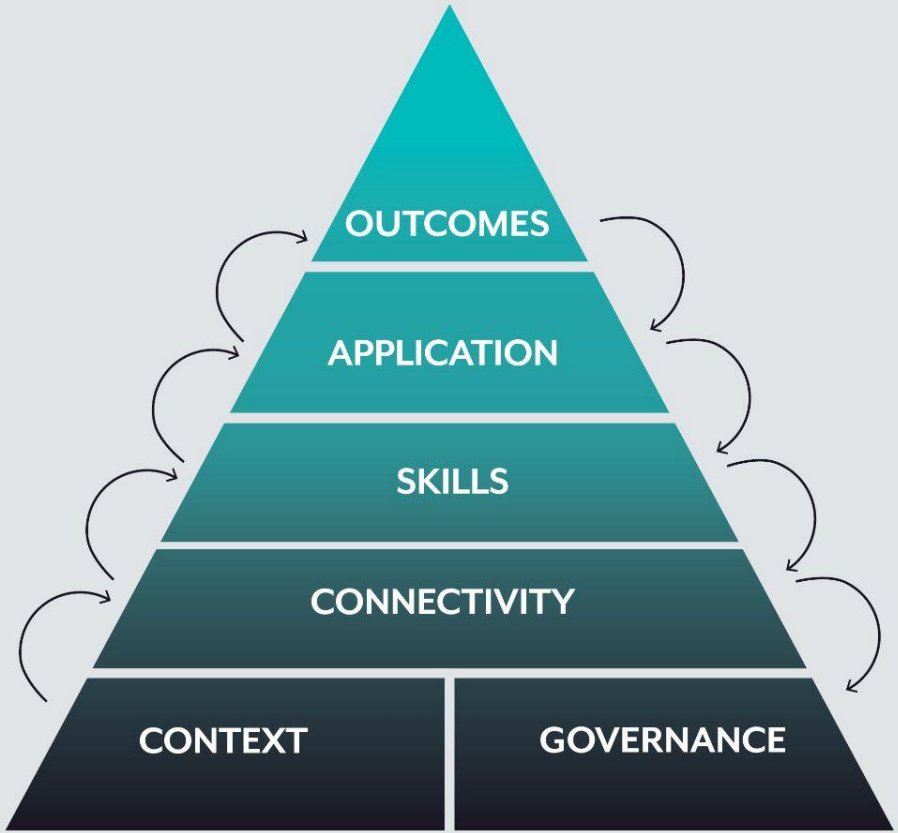
- Indicators related to sociodemographic, economic, and community level factors

#2 Governance

- Indicators related to local, state, and federal policy, governance, and power

#3 Connectivity

- Indicators related to the existence of necessary network infrastructure, as well as the accessibility, affordability, and adoption of internet service and network-enabled devices



Six Components and Indicator areas

#4 Skills

- Indicators related to a broad range of activities centered around digital literacy (including secure online practices), training, and skills attainment

#5 Application

- Indicators related to the uses and application of digital connectivity and skills, while considering additional sociotechnical contexts

#6 Outcomes

- Indicators related to the broader effects of improved digital equity on individuals, communities, and states

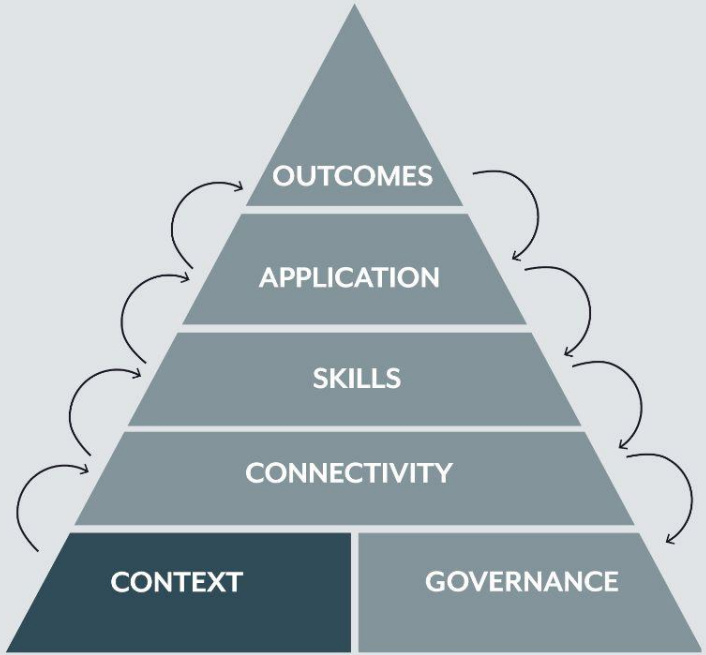
Questions

- How do these align with current strategies?
- How might your thinking and strategy expand in meaningful ways?
- Which components are relevant to this expansion?
- What existing data is already collected?
- What new data might be beneficial to gather?

Contexts

Socio-demographic factors, economic opportunity, and community development

- Socio-demographic factors
- Economic factors
- Business digital readiness
- Community health and wellbeing
- Community assets
- Everyday experiences
- Structural inequalities
- Barriers addressed
- Equity centered
- Geography



Contexts

Considerations for Data Collection

- Data should be collected to be inclusive of all of the "covered populations" listed in the Digital Equity Act, as well as other historically marginalized populations.
- Local communities will need to be engaged and consulted on the categories included in this component, as well as the data that need to be gathered based on these indicator areas.
- Indicators in this component need to be supportive of an individual community's theory of change.
- Indicators could be gathered within an "ecosystem framework" to include micro (individual-level), meso (population-level), and macro (community-level) measures
- Some data exist for some of the indicators; other indicators do not have any data yet; and other indicators need additional ways of thinking about measurement to help stakeholders better understand the influence of these contexts on digital equity initiatives.
- Rural and tribal communities need to be represented in the data gathered across these indicators areas.
- Power can be measured across several indicator areas, particularly in understanding where there are barriers to any of the indicators being measured or realized.
- Measurement considerations must be included at different geographic levels (community, city, county, region, etc.)

Contexts

Existing Tools

Broadband and Socioeconomic Data

- Municipal Digital Advancement Index https://www.digitaladvancement.org/
- The Digital Divide Index https://pcrd.purdue.edu/2019-digital-divide-index-ddi/
- American Community Survey https://www.census.gov/programs-surveys/acs

Socioeconomic Data

- Opportunity Atlas https://www.opportunityatlas.org/
- Economic Tracker https://www.tracktherecovery.org/
- Bureau of Labor Statistics https://www.bls.gov/data/tools.htm

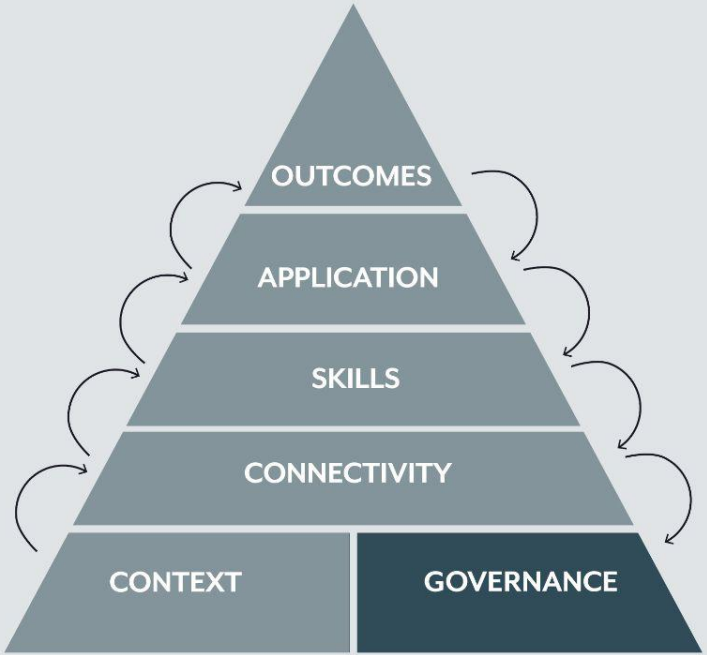
Community-Based Approaches

- ABCD Framework https://resources.depaul.edu/abcd-institute/Pages/default.aspx
- NDIA Asset Mapping for Digital Inclusion https://www.digitalinclusion.org/asset-mapping/
- Digital Inclusion Coalition Guidebook https://www.digitalinclusion.org/wp-content/uploads/2022/02/NDIA_Coalition-Guidebook_vFINAL_RGB.pdf
- Digital Equity Ecosystems Measurement Framework https://metro.org/digital_equity_ecosystems
- DCTP Teaching Community Technology Handbook https://detroitcommunitytech.org/?q=content/teaching-community-technology-handbook
- Achieving Digital Equity In NY (https://www.nysl.nysed.gov/libdev/DigitalEquityNY.pdf)

Governance

Local, state, and federal policy, governance, and power

- Appropriate programs are implemented
- Coordinated policies
- Community participation and ownership
- Collaboration with education institutions
- Holistic approach
- Local coalitions
- Backbone organizations
- Policy support
- Inclusive digital service
- Champions in local government
- Public-private partnerships
- Funding



Governance

Considerations for Data Collection

- This component is the connective tissue between the other 4 components of the Compass.
- Community capacity and agency will be needed after IIJA ends
- Interagency coordination and alignment with agency/state/municipal objectives; integration of policy measures into ongoing legislative/ policy measures
- Capacity of state/local government (as opposed to fed govt) needed to design and implement broadband and digital equity programs.
- Philanthropy can help both with supporting new and existing policy positions, as well as helping to influence policy and governance structures to advance digital equity
- Multiple indicators can be used to measure how and where governance and power are understood.
- Qualitative data are needed to gain a deeper understanding of the existing landscape and to inform future planning efforts.
- Measurement considerations must be included at different geographic levels (community, city, county, region, etc.)

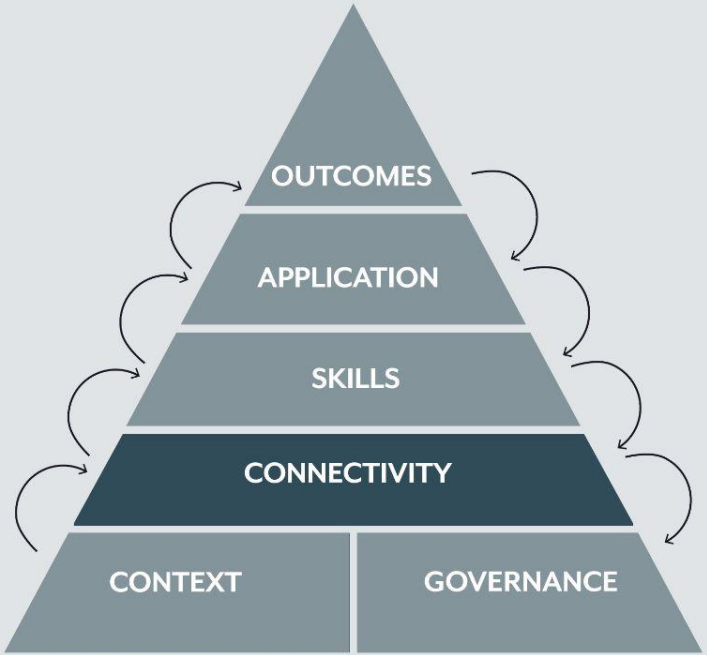
Relevance to IIJA/DEA requirements

- Stakeholder coordination plan
- Implementation plan
- Vision

Connectivity

Network infrastructure, broadband access, device access, affordability, technology adoption

- Broadband availability
- Broadband affordability
- Broadband adoption
- Device availability
- Device affordability
- Device adoption
- Service plan availability
- Quality of network services
- Adequate broadband for CAIs
- Complementary assets



Connectivity

Considerations for Data Collection

NTIA Measurable Objective Categories

- The availability of, and affordability of access to, fixed and wireless broadband technology
- Availability and affordability of consumer devices and technical support for those devices

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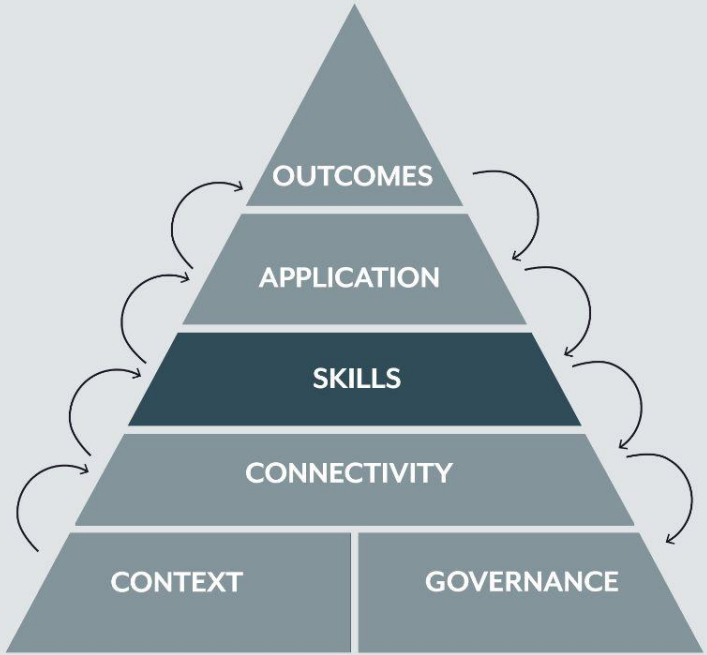
- It is important to keep in mind that each indicator has strengths and limitations. The FCC broadband map will likely suffer from accuracy challenges during the challenge and revision period
- In addition to measuring device adoption (outcomes), need supply side measures for device availability & provision
- Speed tests and hardware based devices should be used to determine speed and quality of service
- Device distribution - need data to support coordinated support within the device ecosystem
- Data should be gathered on general purpose devices and specific applications, such as medical devices
- Hardware-based testing devices are needed to measure network quality
- Crowdsourced tools should be included to measure indicators and provide opportunity and guidance on how to use additional/alternative data sources
- Measurement considerations must be included at different geographic levels (community, city, county, region, etc.)

Skills

Training, skills, digital literacy

- Digital skills assessment
- Culturally relevant pedagogies
- Multilingual/multimodal training
- Coordinated support
- Embedded digital skills training
- Lifelong learning
- Learning together
- Digital skills
- Digital literacy
- Information and media literacy
- Adult literacy



Skills

Considerations for Data Collection

NTIA Measurable Objective Categories

- Digital literacy
- Awareness of, and the use of, measures to secure the online privacy of, and cybersecurity with respect to, an individual

DEA covered Digital Inclusion Activities:

- Digital literacy
- Awareness of, and the use of, measures to secure the online privacy of, and cybersecurity with respect to, an individual

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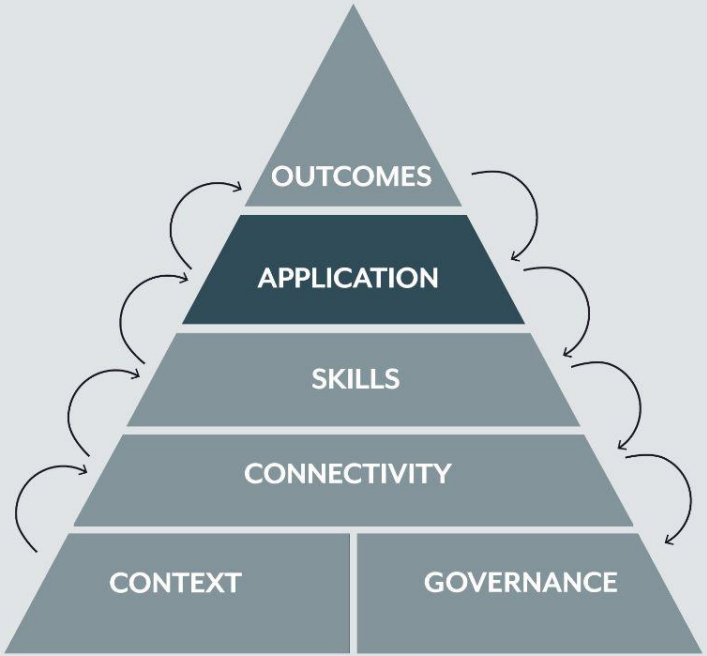
- Safety & protection data including:
  - Mental health
  - Dis- & mis-information
  - Surveillance, predation
  - Harassment
  - Cybersecurity
- Develop navigation/wayfinding systems to help different populations move through learning achievement/outcome journeys
- Crowdsource specific tools to measure indicators, and provide opportunity and guidance on how to use additional/ alternative data sources
- Measurement considerations must be included at different geographic levels (community, city, county, region, etc.)

Application

Cultural relevance, equitable design, workforce development, education, healthcare, public safety, civic engagement, social connections

- Cultural considerations
- Equitable and accessible design
- Tech training support
- Job-seeking assistance
- Private and secure systems
- Patient portals
- Online civic engagement
- Local cultural preservation
- Accessibility and assistive tech



Application

Considerations for Data Collection

NTIA Measurable Objective Categories

- The online accessibility and inclusivity of public resources and services
- Awareness of, and the use of, measures to secure the online privacy of, and cybersecurity with respect to, an individual

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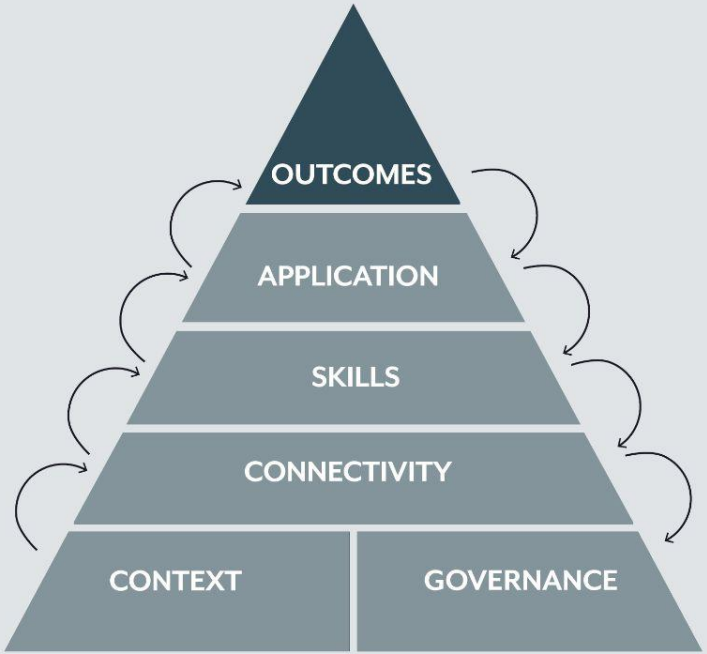
- **Types of digital resources/services that states and localities can shape:**
- Procurement policies
- Policies re: municipal resources
- Fundable products of Capacity/ Competitive grants
  - For ex, multiple languages, accessibility standards
- Develop a gradient (i.e., assessment) through which policymakers can be measured regarding the online accessibility and inclusivity of public resources and services (what they can directly influence and what they are able to indirectly influence)
  - What are the existing government resources to develop/change?
  - What can be influenced through policy?
  - What can be influenced through encouragement?
- **Crowdsource specific tools to measure indicators, and provide opportunity and guidance on how to use additional/alternative data sources**
- **Measurement considerations must be included at different geographic levels (community, city, county, region, etc.)**

Broader Outcomes

Indicators related to the broader effects of improved digital equity on individuals, communities, and states

- Economic Development: Jobs, income, start-ups, growth
- Social Development: Quality of life, safety, happiness, mental health, social peace
- Physical Environment: Water quality, air quality, housing, transit
- Civic Participation



Broader Outcomes

Broader effects of improved digital equity on individuals, communities, and states

- Number of new jobs generated
- Median household income, poverty
- Number of start-ups attracted
- Community economic and population growth
- Health outcomes
- Indicators for community safety
- Mental health data
- Indicators for the physical environment
- Indicators for civic engagement and participation

Using the Compass in Practice

- Develop a baseline in ongoing digital equity planning, implementation, and evaluation contexts
  - Incorporating indicators in *state* digital equity plans
  - Incorporating indicators in *local* digital equity plans
- Using compass indicators to measure broader social, economic, and other wellbeing outcomes
- Building a healthy digital equity ecosystem
  - Expanding digital city services
  - Increasing digital equity in higher education
- Developing or evaluating digital equity grant proposals

Putting it all into Practice: Community and Organizational-level practitioners

- **Practical Application**
  - Two county governments and one tri-county planning commission - pilots
  - Broadband Technical Assistance Grant – Awarded **$997,000** to conduct efforts in eight additional communities in 2024-2025

Putting it all into Practice: Community and Organizational-level practitioners

- **Goals of the pilots**
  - Develop research-backed holistic digital opportunities strategy
  - Understand long-term assessment of programs and strategies
  - Create a roadmap of next steps
    - (e.g. infrastructure planning, sentiment analysis, measurements of digital literacy and educational needs, etc.)
  - Provide foundation for grant narratives
  - Shape future tools for digital equity practitioners
  - Better understanding of how communities and practitioners perceive, experience, and envision the development of sustainable, comprehensive digital equity strategies
  - Study the ways in which broadband task forces, organizations, and communities use these data to broaden their perspectives while devising strategies
  - Identify the role that context plays in policy making
- **Outcomes of the pilots**

Putting it all into Practice: Community and Organizational-level practitioners

- **USDA Grant**
  - **Expected deliverables** of this grant include the development of a digital equity and infrastructure strategy for eight communities that can also be leveraged for additional grant applications, a household-level survey and analysis that identifies resident's sentiments and perceptions, community education materials, and a feasibility study for broadband connectivity
    - Community Listening Tours
    - Sentiment Surveys on Residents' Needs and Perceptions of Digital Access
    - Feasibility Study (if needed/wanted) for an Infrastructure Buildout
    - Grant Support - Including Identifying Funding Sources and Grant Narratives
    - Development of the Digital Equity Task Force
    - Training Materials for Digital Skills Building
    - Participation in a Statewide Coalition to Build Knowledge and Identify Other Solutions
  - **Expectations of participants**
    - Some sort of "official" sign off/endorsement
    - Representation in meetings from someone in community is often helpful, not required
    - Community participation in listening tours
    - Assistance in recruiting/appointing DE Task Force members
    - Assistance finding locations to host meetings
    - May need time here and there with info like census blocks, information sharing, etc
    - Community is not required to act on any of the recommendations, or to apply for grants
    - We welcome AS MUCH participation as the community would like

Process

Community intake/initial research analysis

- Via email, telephone and online research
- Information gathering: investigation of public data, state of digital ecosystem, historical stumbling blocks, current strategies, funding landscape, community coalitions and others

Stakeholder discovery call: goal-setting and onboarding

- Introduction to Digital Opportunities Compass and Digital Strategy Development process
  - Identify current and potential baseline strategies in consideration of a wide range of stakeholders and outcomes
- Identify task force members
  - Task force should be inclusive of a broader range of stakeholders as defined by the Digital Opportunities Compass

Virtual Task Force Meeting 1 - Introductions and Goal Setting

- Digital Opportunities Compass process overview
- Discuss and develop role of task force
- Brainstorm all potential expansions of current strategies, if currently in place
- Identify task force information gathering needs
- Post-meeting individual survey and activities
  - Finalize 2-3 central areas of focus through rate/rank survey

Process

Virtual Task Force Meeting 2 - Connectivity

- Task force report out
- Discussion of connectivity indicators, barriers, data collection, current infrastructure development plans, others
- Review of existing tools
- Identify expansion areas based on strategic focus
- Discuss task force information gathering needs
- Post-meeting individual survey and activities

Virtual Task Force Meeting 3 - Skills and Applications

- Task force report out
- Discussion of skills and applications indicators, such as digital literacy, secure online practices, training, accessible design, public safety, civic engagement, health care, and cultural relevance
    - Evaluation of existing programs and identification of expansion areas
- Review of existing resources to leverage, such as frameworks and standards
- Identify expansion areas based on strategic focus
- Discuss task force information gathering needs
- Post-meeting individual survey and activities

Process

Virtual Task Force Meeting 4 - Governance and Contexts

- Task force report out
- Discussion of governance and contexts indicators such as coordinated policies, available programs, community participation and organizations, public-private partnerships, economic factors, business digital readiness, community assets, and others
- Identify expansion areas based on strategic focus
- Discuss task force information gathering needs
- Post-meeting individual survey and activities

Virtual Task Force Meeting 5 - Integrated discussion of indicator areas

- Task force report out
- Review and discussion of indicator areas, existing tools, and data collection needs
- Preparation for workshop 1
- Discuss task force information gathering needs
- Post-meeting individual survey and activities

Process

In Person ½ Day Workshop 1 - Broader Outcomes and Digital Opportunity Strategy Development

- Review and develop broader outcomes and longitudinal measurements
  - Identification of indicators related to broader effects of improved digital opportunity on the holistic ecosystem
    - Indicator areas could include economic development, social development, health and wellbeing, physical environment and civic participation, among others
- Co-develop draft strategy or strategy expansion

Virtual Task Force Meeting 6 - Funding

- Review of broader outcomes
- Discussion of potential funding sources and strategy sustainability
- Post-meeting individual survey and activities

In Person ½ Day Workshop 2 - Final Planning and Next Steps

- Data analysis report out and co-development of next steps
- Finalization of task force's strategic plan

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