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Education and Its Impact at the Community Level

April 15, 2015

Austin, TX

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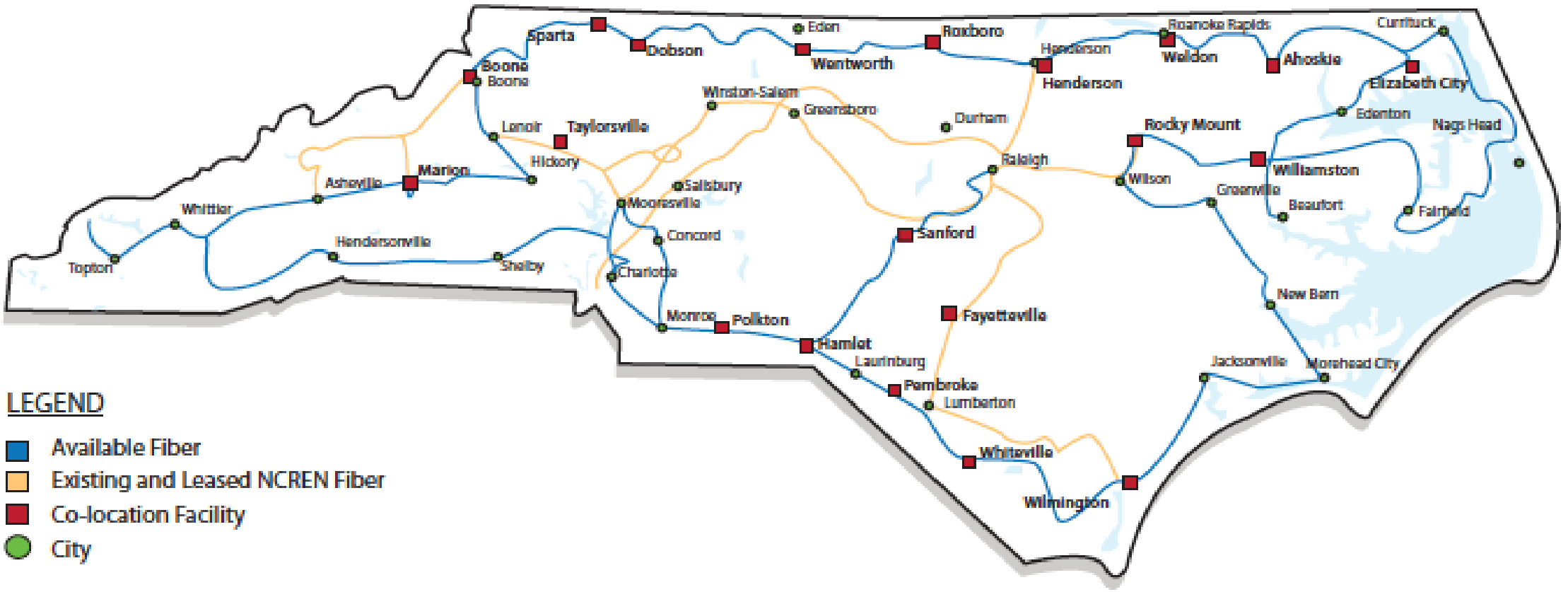
Answer 4 questions:

- What is the North Carolina Story?
- Who is DigiLEARN?
- Why is technology is the difference maker for education and the economy?
- How do you build support for technology in

MCNC Statewide Network



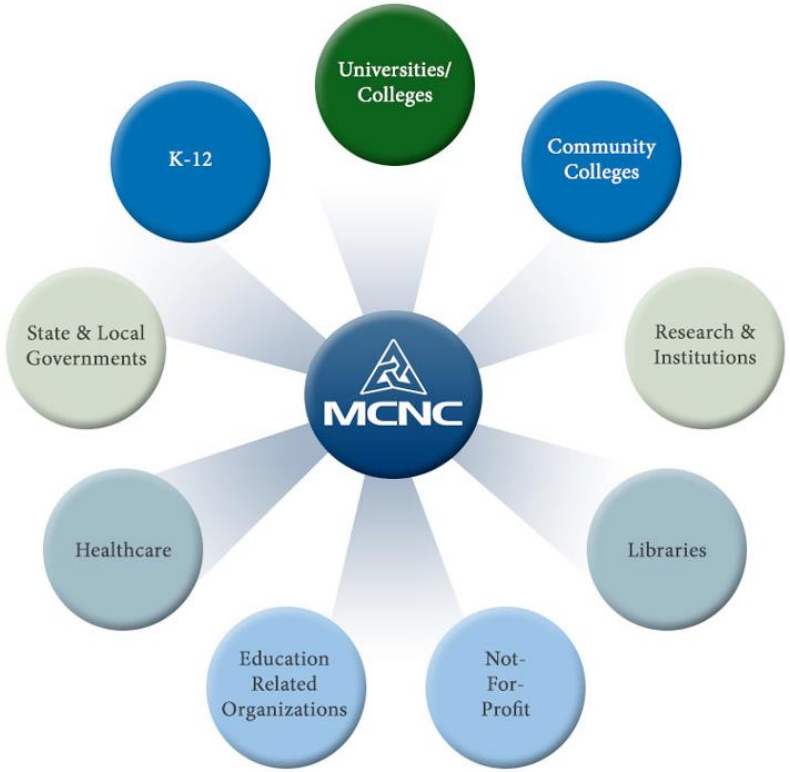
LEGEND

- Available Fiber
- Existing and Leased NCREN Fiber
- Co-location Facility
- City

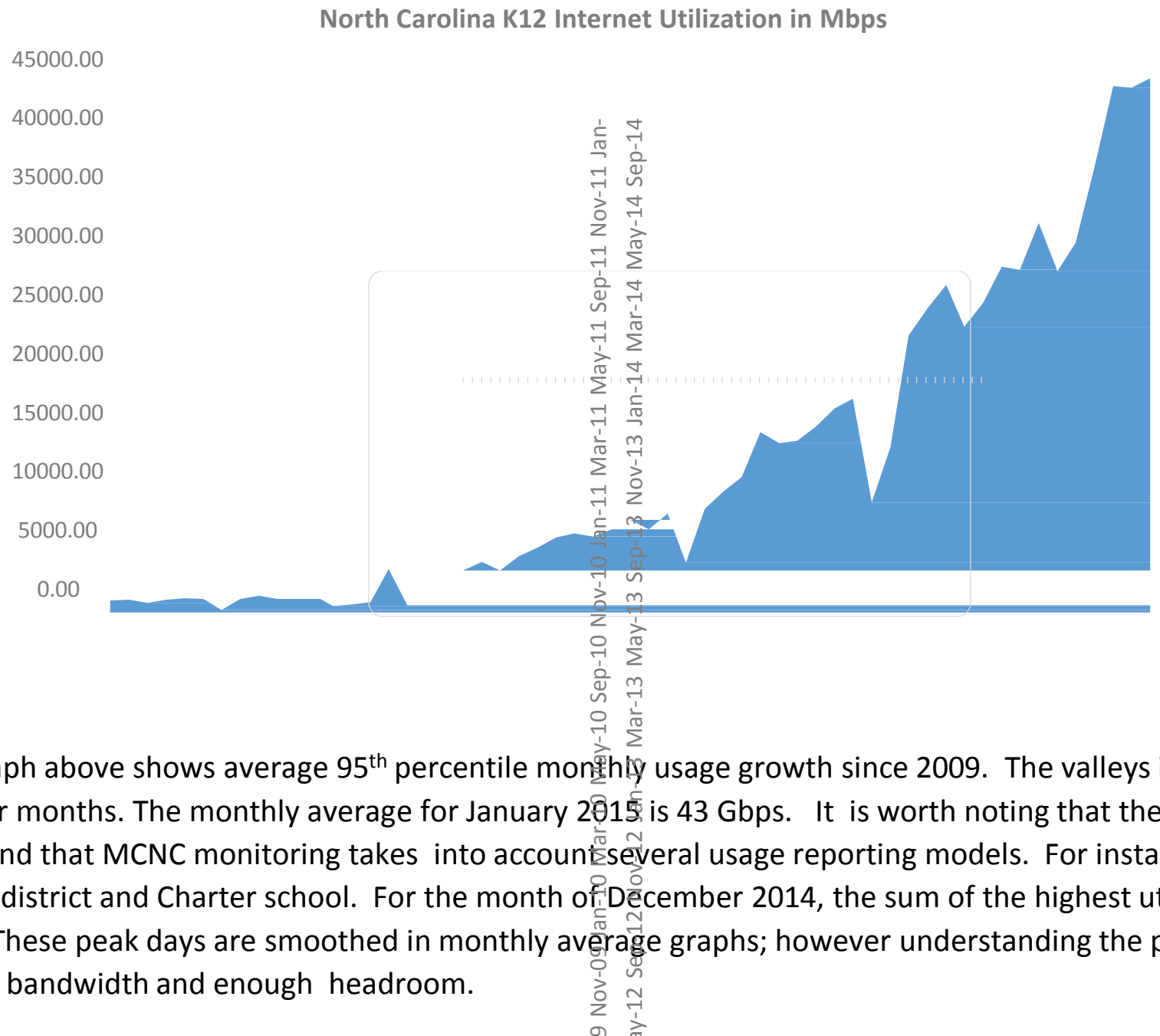
*Handholes/interconnection points are available approximately every 5,000 feet or less as needed.

NCREN serves…

- 17 UNC System Institutions
- 26 of 37 independent colleges and universities
- 58 Community Colleges
- 115 Local Education Agencies (School Districts)

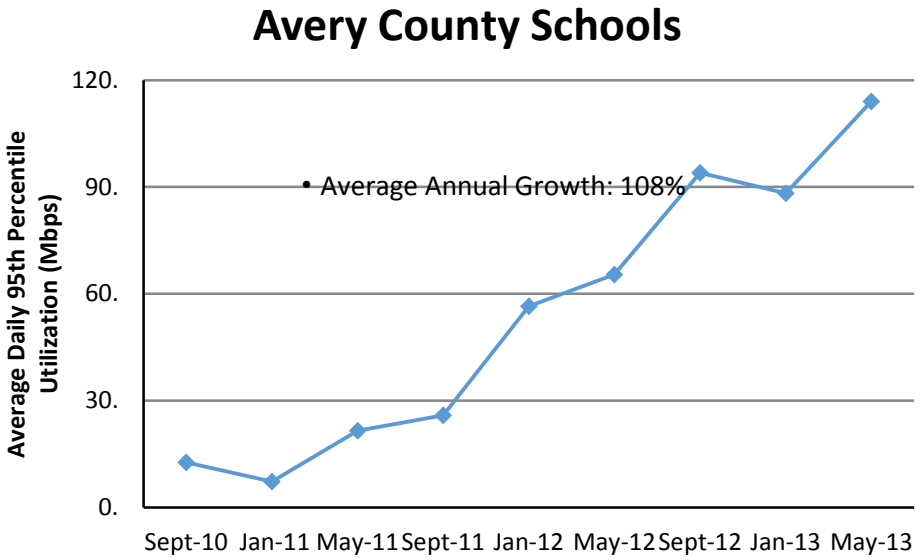


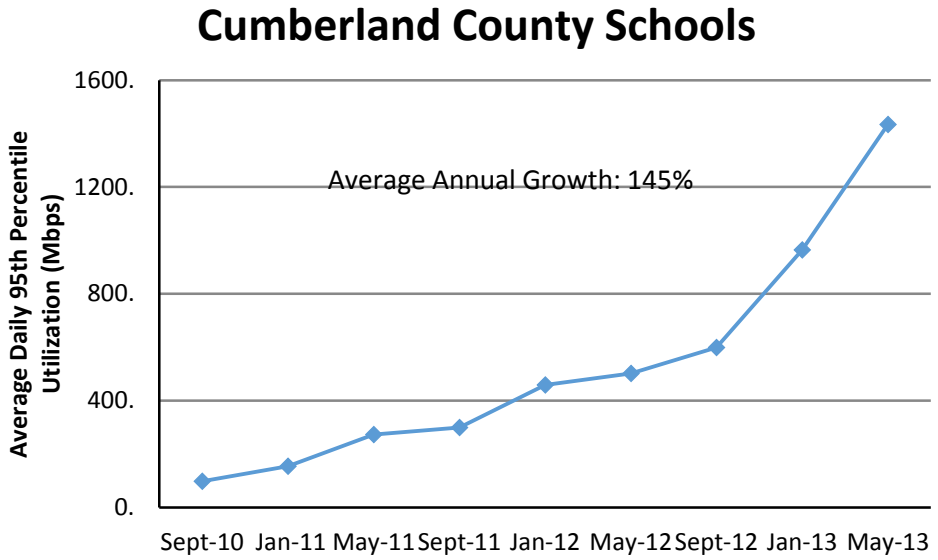
- 75 Charter Schools
- Healthcare
  - 30 Hospitals (Non Profit)
  - 70 County Health Agencies and Free clinics
- RTI, NISS, NHC, Burroughs Wellcome Fund, Bio Tech Center, other research institutions

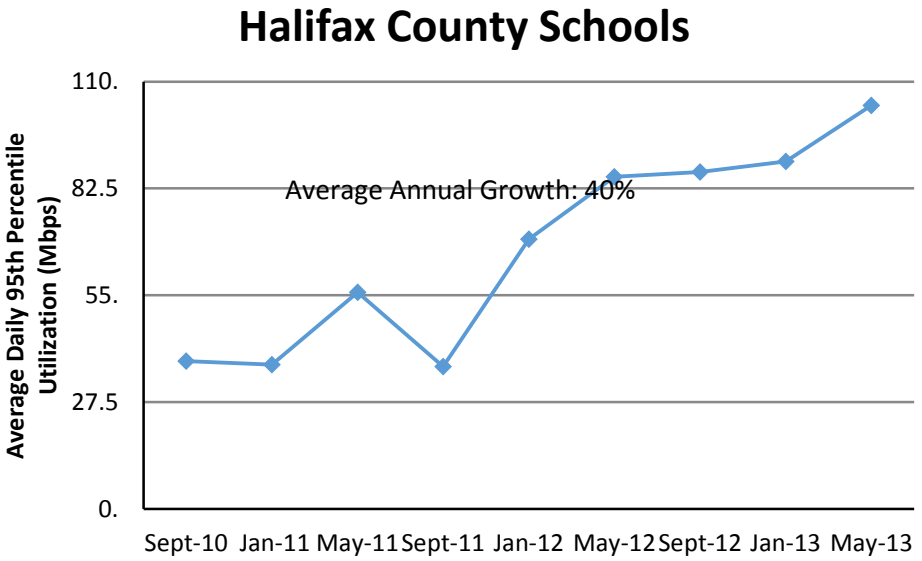


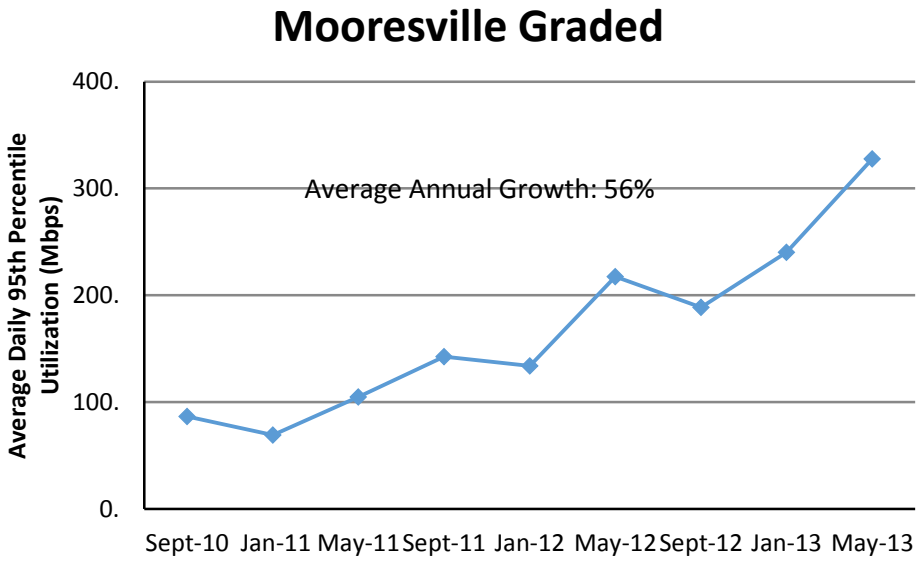
This graph above shows average 95th percentile monthly usage growth since 2009. The valleys in the graph represent dips during the summer months. The monthly average for January 2015 is 43 Gbps. It is worth noting that there are many ways to represent actual usage and that MCNC monitoring takes into account several usage reporting models. For instance, MCNC also monitors peak daily usage in each district and Charter school. For the month of December 2014, the sum of the highest utilization days across all 115 LEAs was 68 Gbps. These peak days are smoothed in monthly average graphs; however understanding the peaks informs decisions related to defining enough bandwidth and enough headroom.

Sample Districts – Bandwidth Utilization









LESSONS LEARNED

1. **What gets funded is what gets done.**
2. **Shared Vision for the State.**
3. **Formal Stakeholder Group with skilled leadership team.**
4. **Develop a plan based on the state's assets with clear measureable outcomes.**
5. **Manage the process and adjust accordingly- technology is not an event- it is a process.**

LESSONS LEARNED (con’t)

6. Define the roles for the state and the locals.

For example, the state:

- **Provides the technology infrastructure for all schools**
- **Fosters model digital learning innovations within districts**
- **Develops local leadership capacity**
- **Ensures access to high quality digital resources**
- **Leverages state and regional support structures**

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Who is DigiLEARN?

DigiLEARN is a nonprofit that seeks to narrow the nation's persistent achievement and skills gaps by accelerating the use of technology in education- *the key to economic prosperity*.

Technology and broadband connectivity can give teachers access to instructional tools and data in real time so they can quickly adjust and personalize instruction for each student.

What makes DigiLEARN different is bringing our best and brightest entrepreneurs and teachers in the classroom to directly collaborate to develop learning models and products to improve students' learning outcomes that can be scaled nationwide.

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DigiLEARN Board of Directors

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- National Advisors involved with digital learning Birth – Post Secondary
- K12 Advisors involved with digital including Superintendents, Teachers, local policy leaders and parents.

Elements of the Digital-Age Learning Model

Advancement based on demonstrated **mastery** of the content and **competency** in applying what has been learned.

Anywhere and anytime learning, inside and outside of schools, 24/7, with most learning blending face-to-face and online activities.

Personalized learning and flexible resources optimized for each student.

Student-centered instruction, combining large group, small group and individualized learning, with teachers serving as facilitators and coaches.

Digital content providing interactive, flexible and easily updated educational resources.

Assessments integrated into learning activities to provide ongoing information about students' achievement that can be used to improve teaching and learning.

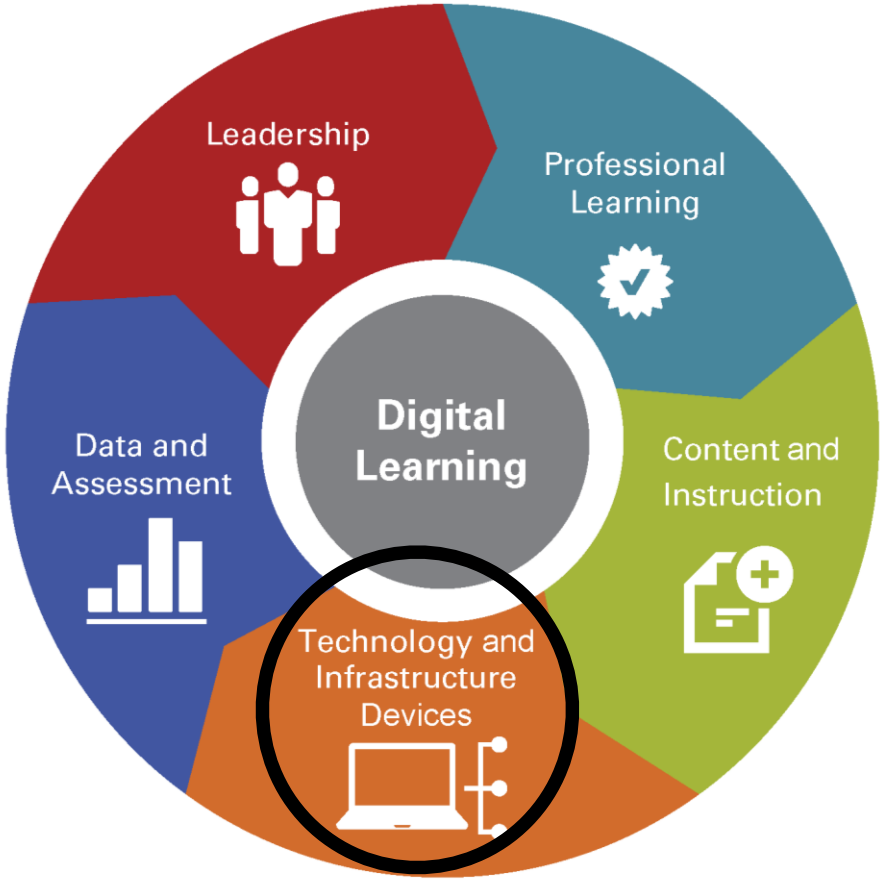
Parent portals provide 24/7 access to their children's assignments, grades, and records, as well as a means to communicate with teachers and administrators.

Project-based and community-based learning activities connecting to students' lives outside of school.

Digital Learning Progress Rubric

Technology Infrastructure & Devices

- School Networks
- End-User Devices
- Learning Environments
- Technical Support
- Supporting Services
- Outside of School



http://ncdlplan.fi.ncsu.edu/

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Alliance for Excellent Education

- 60 percent of today's jobs require some form of education after high school, however, the employability indicator shows, few twenty-five to thirty-four year-olds have an associate's degree or higher.

US Department of Labor

- 10 million Americans unemployed but at the same time there are 4 million jobs available and unfilled due to the growing skills gap.

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National Assessment of Educational Progress

- 1 in 3 students is proficient in fourth-grade reading, eighth-grade reading or eighth-grade math,
- 4 in 10 are proficient in fourth-grade math with some subgroups of students being much lower;
- 1 in 5 African American, Latino, and Native American students are proficient in fourth

NAEP 12th Grade Results

- Only 39 percent of students have the mathematics skills and 38% the reading skills needed for entry-level college courses.

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Stanford Center on Poverty and Inequality

- One in 5 children — 16.1 million — was poor in 2012
- The largest group of poor children was Hispanic children (5.8 million) followed by White children (5.2 million) and Black children (4.1 million).
- The South had the highest child poverty rate with 1 in 4 Southern children poor compared to 1 in 5 in the rest of the country.
- Nearly 1.2 million public school students were homeless in 2011-2012, 73 percent more than before the recession.
- By 2019 children of color will be the majority.

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The Opportunity

The facts show that in the US we continue to have persistent achievement and skills gaps as well as continued high poverty rates among the same low achieving sub groups especially in the Southeastern United States and other rural parts of our country.

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The Solution

591 Billion dollars is spent annually for education in the United States. Of that 7.97 billion dollars is spent for education technology.

Is education getting its return on that investment?

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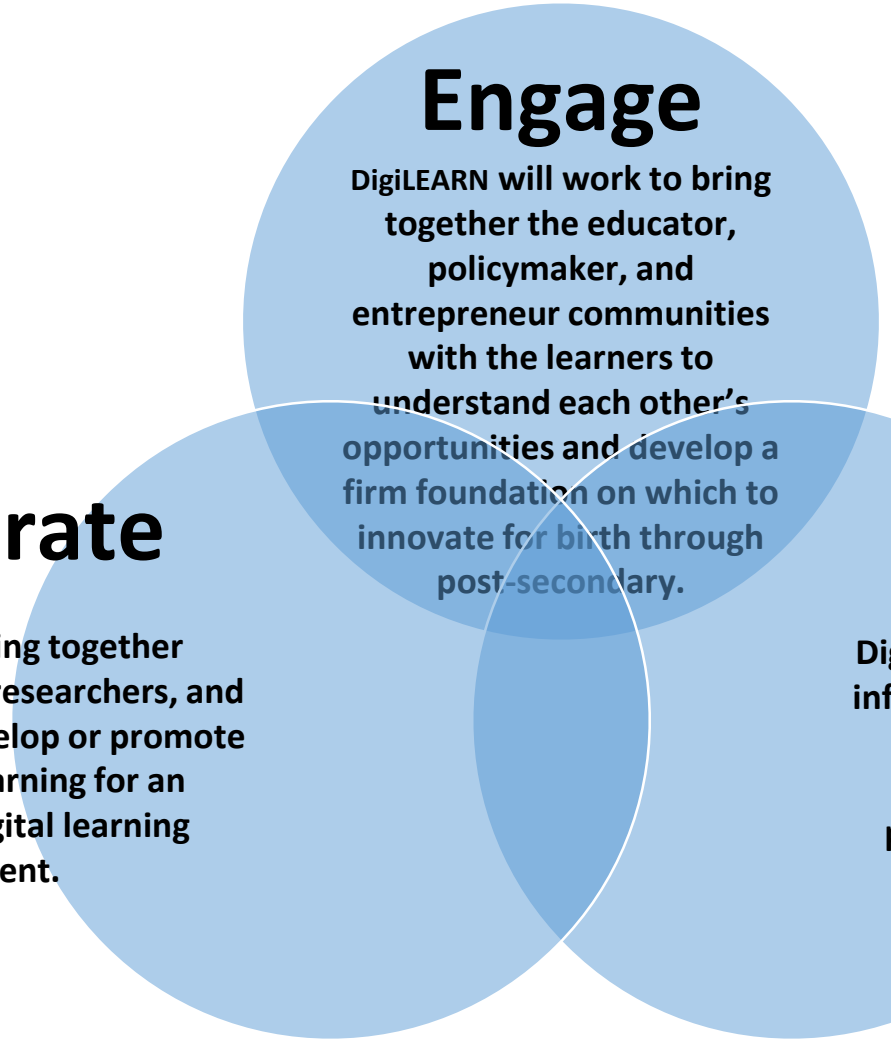
The better question or solution may be:

How do we get more out of the 591 Billion in a way that closes the achievement and skills gaps, improves the quality of workforce which leads to decreased poverty and increased economic prosperity?

3 Priorities



Engage

DigiLEARN will work to bring together the educator, policymaker, and entrepreneur communities with the learners to understand each other's opportunities and develop a firm foundation on which to innovate for birth through post-secondary.

Accelerate

DigiLEARN will bring together educators, students, researchers, and entrepreneurs to develop or promote new models of learning for an innovative and digital learning environment.

Communicate

DigiLEARN will communicate data-driven information about successful innovations as well as encouraging new thinking around possibilities for personalized learning. DigiLEARN will also strive to be a leading resource for information about digital learning opportunities.

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Engage

- Use conveni ng power

Engage

- Hold the first Southeastern Education Innovation Summit in partnership with business and educators to highlight and promote innovations in education and digital

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Accelerate innovation through a Virtual Innovation Studio

Accelerate
- Host opportunities for educato

Accelerate
- Host Learning Institutes for

Accelerate
- Develop a Model for Digital

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Communicate

- Build support for the edu-innovation agenda with a targeted communication strategy

Communicate

- Promote successful innovations in digital learning through web based strategies, social media strategies and other communications channels. Communicate

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Thank You!

Governor Bev Perdue, Chair

Governor Jim Geringer, Vice Chair

For additional information, please contact:

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Questions?

Summary Table

Technology Infrastructure	
• **Expand the School Connectivity Initiative to support internal Wi-Fi infrastructure**	**$7M (Yr1)-$12M-R**
• **Establish a collaborative procurement service**	
• **Multi-agency plan for addressing broadband access in rural communities**	
Model Digital Learning Innovations	
• **Establish a grants program for innovative district digital learning models**	**$24M-R**
Local Educator Leadership Capacity	
• **Support professional learning for digital learning leaders**	**$5M-R**
High Quality Digital Education Resources	
• **Implement Home Base curriculum and learning management system 2.0**	**$6M-R**
• **Expand access to digital education resources, focused on NC resources**	**$10M-R**
• **Begin transition to digital education resource adoption process**	
Regional and Support Structures	
• **Strengthen regional support structures**	***$4M-R***
• **State-level management of centralized functions**	**$1M-R**
Total	**$57M (Yr1)-$62M-R**

What's driving this

Digital Teaching and Learning

Bring Your Own Device (BYOD)

On-line Assessments

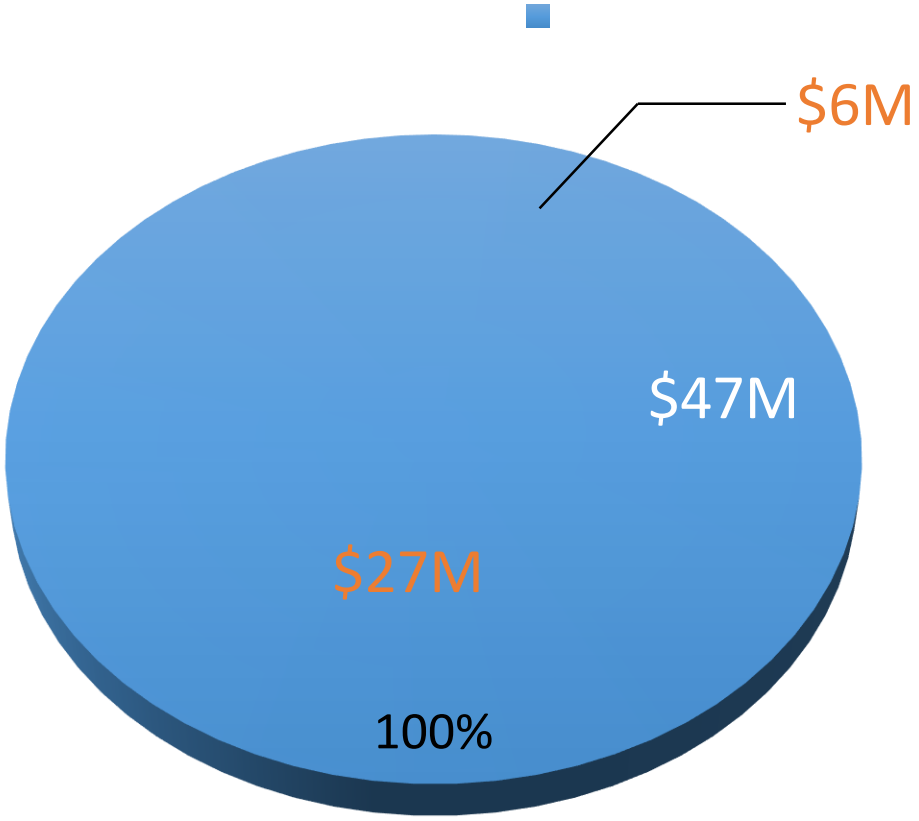
One to One devices

Home Base Applications & NC EdCloud

Blended Learning (Flipped Classrooms, NCVPS)

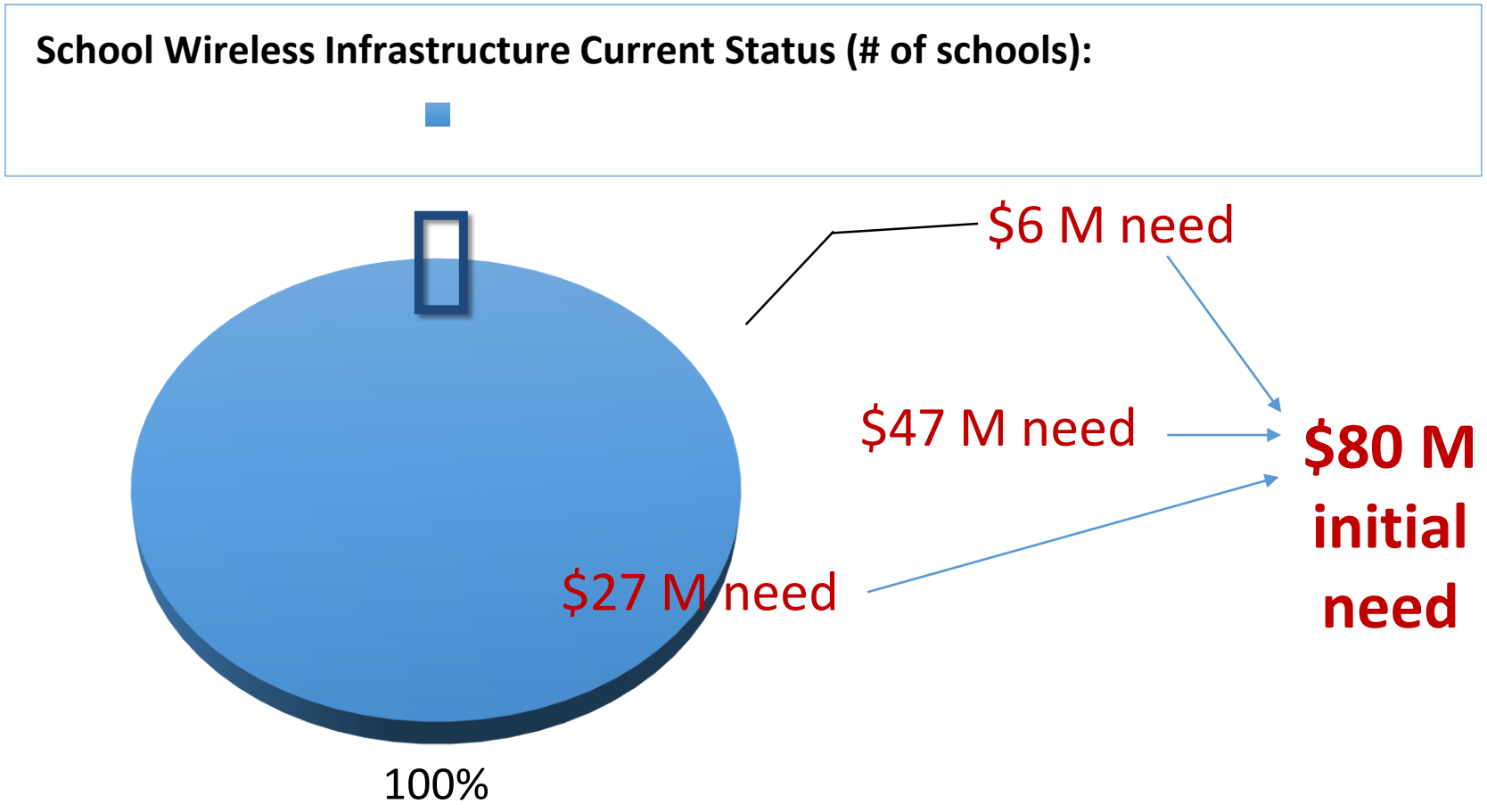
Our students deserve broadband without limits

Towards High Density for All



To move all schools to high density requires ~**$80M** non-recurring
To maintain high density wireless in schools requires ~**$25M** annual recurring
E-rate modernization order figures ~**$45M** per year – NC cost ~**$12-14M**

Towards High Density for All



to move all schools initially to high density wireless