REQUIRED SUBSTANTIVE COMPONENTS
OF THE
LOCAL SCHOOL DISTRICT TECHNOLOGY PLAN

Schools, school districts, and libraries that want to apply for Schools and Libraries support, conunonly referred to as "E-rate," must frrst prepare a technology plan. Beginning with FY2011, technology plans are required only for Priority 2 services (Internal Connections and Basic Maintenance oflntemal Connections). An approved technology plan sets out how information technology and telecommunications infrastructure will be used to achieve educational goals, specific curriculum reforms, or library service improvements.

A technology plan designed to improve education should cover the entire funding year (July I to June 30) but not more than three years. The plan must contain the following elements:

Goals and realistic strategy for using telecommunications and information technology
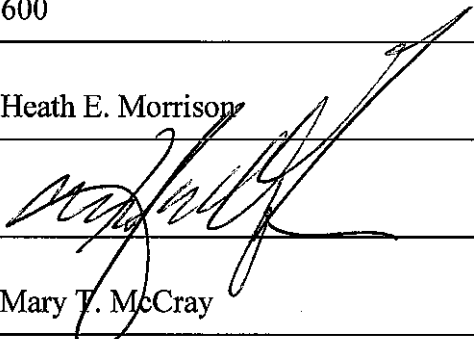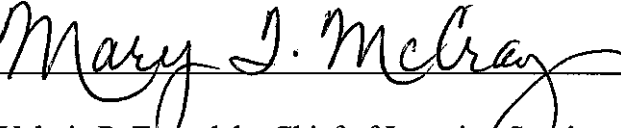
A professional development strategy

An assessment of telecommunication services, hardware, software, and other services needed

Ongoing evaluation process

Policies

The technology plan must be approved by a USAC-certified technology plan approver before discounted services can begin. The state is the certified technology plan approver for libraries and public schools. www.usac.org, August, 20**II**.

LEA/Charter Name:	Charlotte-Mecklenburg
LEA/Charter Number:	600
Superintendent Name:	Heath E. Morrison
Superintendent Signature	
Local Board Chair Name:	Mary T. McCray
Local Board Chair Signature:	
Person of Contact:	Valerie P. Truesdale, Chief of Learning Services
Telephone:	980-344-0022
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Charlotte-Mecklenburg Schools
Technology Plan

2014-2016
Submitted to **NCDPI**- November 1, 2013

Adopted by Charlotte-Mecklenburg Board of Education
January 20, 2014
Posted on the CMS Website:

http://wwwauthoring.cms.k12.nc.us/cmsdepartments/CIO/Documents/CMS%20Tech%20Plan%202014-2016%20(3).pdf

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Technology Planning
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Sheila Shirley	Chief Financial Officer
Kelly Gwaltney	Chief of School Perfonnance
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Kathy Meads	Executive Director, ESL
Charles Nusinov	Executive Director, Leamin_g and Teaching
Sandy Fish	Executive Director, Inventory & Distribution
Brian Schultz	Executive Director, Northeast Learning Community
Christina Efird	Director, Professional Development
Jimmy Chancey	Director, Career and Technical Education
Hope Johnston	Director, Virtual Learning and Media
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Charlotte-Mecklenburg Schools Technology Plan
2014-2016

Vision Statement

Charlotte-Mecklenburg Schools envisions technology as a resource for learning and teaching that fosters a digital learning environment focused on meeting individual student needs. This environment enables students to develop the skills and knowledge they need to learn effectively and live productively in an increasingly global and digital world.

The "classroom" should be a place of learning where there are no walls:
- Continuous and limitless learning- 24 hours a day, 7 days a week
- Allowing students to teach as well as learn
- Diversified and individualized learning- personalizing education to the need of each student
- Incorporating global learning and teaching experiences
- Focusing on creativity, innovation, agility and higher level thinking skills

The implementation of this vision began in 2012 with the creation of a wireless infrastructure to support each school in CMS. Today we celebrate that 100% of our brick and mortar classrooms have good wireless coverage (1.5 access points per classroom). The process has begun to support wireless connectivity in CMS mobile classrooms.

The "Bring Your Own Technology" (BYOT) environment is fully implemented. This is a "guest network" that enables all users to access a filtered Internet environment using personal devices. Students and staff are able to access documents and other digital content from personal devices, as well as CMS devices, from either school or home.

Access to personal learning and teaching devices will expand. For the first time in CMS history, each classroom teacher has a mobile device to use in expanding his/her own technology skills, and for use in classroom instruction. These mobile learning devices will enhance student and staff access to digital resources. A comprehensive professional development plan is underway in support of the infusion of technology within the learning environment.

The "classroom" will expand beyond bricks and mortar. Technology will link students in Charlotte-Mecklenburg Schools with professors at universities and colleges from Chapel Hill to China. Virtual learning will enable students to study advanced Chinese or a second year of physics. Digital tools will link students with teachers who challenge them to awaken their own possibilities and provide them with the differentiated support that they need.

Learning at new levels will be within every student's reach, regardless of ability. Teachers will be highly effective; they will have access to real-time data on student learning that will help them identify which students need more attention and which students have mastered content. Great teaching will help every student in the classroom. Clear boundaries between classrooms, subjects, grades and school levels will fade as teachers plan together how best to organize learning and align instruction with student needs and interests.

Students will be learning in less formal ways. Extracurricular and after-school activities will provide opportunities to learn from and help others here at home and around the world. Technology, great teaching and support for every student, resource conservation, diversity and global citizenship -all of these will be present in classrooms of the future. We know that these things are possible. This transformation is now underway in CMS classrooms.

Why must we engage in this work?

(Excerpt from the *CMS Strategic Plan 2018: For a Better Tomorrow*)

"What will the workplace of the future-the one in which our students today will be working-look like and what kinds of jobs will it provide? General Electric's research lab in upstate New York provides a window into that future.

General Electric is an American company and a global giant. GE manufactures appliances, healthcare products, aviation and train engines, advanced energy technology devices, medical equipment and more. The company's Niskayuna, NY-based research lab draws on the expertise of its own engineers from around the world-and everyone else through online design contests. The recent GE Engine Bracket Challenge offered a reward to anyone who could design a lighter, better bracket for a jet engine to increase fuel efficiency. The prize was $20,000. The *New York Times* colunmist Tom Friedman reports that, in all, 697 contestants from around the world- companies, individuals, graduate students and designers-competed, with a majority of them coming from outside the aviation industry.

What did the GE contestants need to successfully compete? Higher-level thinking skills. Digital and technological competency and access. Literacy, numeracy and content mastery. Creativity and the ability to innovate. Motivation and the desire to compete. Communications and entrepreneurship skills to share ideas.

Every student in Charlotte-Mecklenburg Schools today will enter a workforce that requires the same skills and competencies needed to successfully compete in the GE contest. In the rapidly changing workforce oftomorrow,jobs that require easily replicated, rote skills will be gone-automated or outsourced. The factory model job is gone and it's not coming back. The jobs that remain will be those that require creativity, agility and creative thinking.

It is our challenge-our privilege and responsibility as educators, caregivers and members of the community-to ensure that every student in every school leaves CMS with those skills and competencies. Working together, we can provide the schools our students need and deserve. We can provide schools that move beyond the four walls of a classroom to offer global learning and teaching experiences, unfettered creativity and inspiration to become lifelong learners.

We can provide schools that will nurture innovation and entrepreneurship in our students-schools where learning is uot only encouraged in the classroom but supported everywhere, all the time.…
Only by building that learning system can we ensure that every student leaves high school prepared for college, career or the military. Only by preparing our students with those higher-thinking, critical-analysis skills and digital literacy will we ensure that our region, Mecklenburg county and beyond, has the skilled, and knowledgeable workers we will need to continue to prosper economically and socially."
[The CMS Strategic Plan 2018: For a Better Tomorrow is *our roadmap to transform Charlotte-Mecklenburg Schools over the next five years]*
http://www.ems.kl2.nc.us!mediaroom/strategicplan2018/Pages/de(ault.aspx

There is a growing national awareness of the need to prepare our students for the future. The federal government has challenged states to compete for a Race to the Top for $4 billion in federal funding for public schools. In the private sector, the Bill & Melinda Gates Foundation targeted improving American high schools as a major goal. The foundation is funding a national two-year study of what constitutes effective teaching, and this research includes 500 teachers in Charlotte- Mecklenburg Schools. CMS is

also the recipient of the Bill & Melinda Gates Foundation Next Generation Innovation grant. This grant will begin the work to design a personalized learning platform enhanced by student e-portfolios.

Nationwide, there is a growing urgency among educators, government officials and citizens about the need to reform our schools so that America remains a global leader in education, innovation and entrepreneurship. Our nation's long-term economic success is not possible without dramatic improvement in education.

A strong impetus for reform exists in Mecklenburg County as well. The Charlotte-Mecklenburg Board of Education is committed to "transform the culture of Charlotte-Mecklenburg Schools into one of high performance in both academics and operations…Foster a performance culture and unleash innovation in teaching, learning and school operations."

In the past three years, Charlotte-Mecklenburg Schools has improved student achievement, increased the graduation rate, streamlined many business operations, and won the 2011 Broad Prize for Urban Education. We have decentralized to become more responsive and agile. An Office of Transformation has been created to focus on expanding options, encouraging innovation and focusing on skills to prepare our students for the future. CMS is creating a strong foundation for reform- but it is only a foundation.

"The residents of Mecklenburg County and the employees of Charlotte-Mecklenburg Schools do not want a good school district; we want a great one. *Strategic Plan 2018: For a Better Tomorrow* is the blueprint for transformative change--the goals, focus areas, performance indicators and milestones we will use to transform our district and our schools." Aligning the district technology plan to the strategic plan, particularly to *Goal]* and *Goal 6,* will prepare us to move from good to great. "The strategic plan establishes a roadmap that will enable every school to provide every student with a 21"-century learning experience. It will empower Charlotte-Mecklenburg Schools to realize the CMS brand promise: a personalized environment of academic excellence that prepares every child, every day for a better tomorrow." *[Strategic Plan 2018: For a Better Tomorrow, October 2013]*

CMS Strategic Plan 2018
Goal I
Maximize academic achievement in a personalized 21"-century learning environment for every child to graduate college- and career-ready
Four Focus Areas
   I. College- and career-readiness
   2. Academic growth and high academic achievement
   3. Access to rigor
   4. Closing achievement gaps

Goa/6
Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign
Four Focus Areas
   I. Learning everywhere, all the time
   2. Innovation and entrepreneurship
   3. Strategic school redesign
   4. Innovation new schools

Charlotte-Mecklenburg Schools Technology Plan 2014- 2016

Strategic Priorities

Charlotte-Mecklenburg Schools is a leader in the use of technology as an instructional and administrative tool. However, an analysis of individual schools across the district indicates wide variances in the amount of technology infused in the work of administrators, teachers and students. It is the responsibility of Charlotte-Mecklenburg Schools to provide the optimal learning and teaching environment and to ensure equity is achieved by using all available resources.

Equal access to technology and 21st century opportunities are critical to ensuring the success of all Charlotte-Mecklenburg students. Preparing students to be career and college ready requires the effective integration of 2Ist Century technology tools. While content mastery is critical, this mastery does not necessarily indicate that a student can apply their knowledge to communicate, collaborate, analyze, create, innovate and solve problems. These are the skills demanded by employers. Simply being able to use technology is no longer enough.

The National Education Technology Standards for Students (NETS-S) serve as a guide for CMS to enable the district to focus priorities and prepare students for a digital age. By the time a student graduates from a CMS high school, he/she should be able to:

I) Demonstrate creative thinking, construct knowledge and develop innovative products and processes using technology

2) Use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others

3) Apply digital tools to gather, evaluate and use information

4) Use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using appropriate digital tools and resources

5) Understand human, cultural and societal issues related to technology and practice legal and ethical behavior

6) Demonstrate a sound understanding of technology concepts, systems and operations

In order to ensure all CMS students and staff meet the National Education Technology Standards, CMS will address the five strategic priorities established by the North Carolina Department of Public Instruction in the following manner:

I) Shared Services Model-leverage CMS technology initiatives with state shared services opportunities

2) Universal Access to Personal Learning and teaching Devices-create a Bring Your Own Technology (BYOT) environment and enhance existing infrastructure

3) Access to Digital Learning and teaching Resources, including digital textbooks-transform the instructional environment from one driven by paper to one that is rich in digital content

4) Model of Technology-Enabled Professional Development-focus upon the development of digital age professionals

5) 2I"Century Leadership for Your LEA-focus upon the development of leaders who can support digital age learning, implement technology and transform the education landscape

Strategic Priority 1: A Statewide Shared Services Model

Essential Questions

How will we leverage collaborative purchasing to pay substantially less for technology services and platforms?

How can a Statewide Shared Services Model assist in shifting primary support from infrastructure to instructional needs?

How can a Statewide Shared Services Model enable increased infrastructure and technology efficiency and sustainability?

How can a Statewide Shared Services Model provide higher service reliability?

How can a Statewide Shared Services Model facilitate more strategic budgeting models for our Charlotte-Mecklenburg Schools?

Current Status and Moving Forward

Charlotte-Mecklenburg Schools has had a distinct advantage over many school districts in North Carolina in that our size has allowed us to secure significant discounts over goods and services that smaller districts may not be able to obtain. However, the district is cognizant that the economy of scale on a state level offers the promise of additional savings.

The district has secured a communications line through the Microelectronics Center of North Carolina (MCMC) as our primary line connection from CMS to the Internet. This has resulted in a considerable savings to the district. The shift from local to state servers for the PowerSchool system allowed CMS to reallocate that hardware for other purposes, negating the need to purchase some equipment. As we move forward, the costs for maintaining and replacing that hardware will be reinvested into the enterprise.

Online assessment offers the opportunity to decrease costs by eliminating the need for the traditional paper forms, however these savings are tempered by the need for a sufficient quantity of devices that allow students to take their assessments online. Infrastructure, connectivity, speed and reliability must grow as the number. of devices in the district increase.

The promise of other offerings, such as a filtering solution, storage and other cloud technologies could assist the district in reallocating dollars to instructional needs. The district will at some point need to update email service and we will investigate all options, including possible collaborations with the state. CMS will always have an evaluation process to determine what meets the needs of this LEA at the best possible cost.

Alignment to Other Plans and Initiatives:

Strategic Priority 1: A Statewide Shared Services Model
Charlotte-Mecklenburg will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of our plan:

CMS Strategic Plan 2018

Goal!: Maximize academic achievement in a personalized 21st-century learning environment for every child to graduate college- and career-ready

Goal 3: Cultivate partnerships with families, businesses, faith-based groups and community organizations to provide a sustainable system of support and care for each child

Goal6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign.

Career and College Ready, Set, Go!
Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems

Accountability and Curriculum Reform Effort (ACRE)

By participating in the shared services model offerings, CMS will better prepare for the transition to online assessments, digital textbooks and universal access to personal teaching devices.

Race to the Top Local and State Scopes of Work

Implementation of the NC Education Cloud involves the development of a Tier 4 style data center that ensures hosted infrastructure is safe and secure. The Cloud will be used as a content distribution network (CDN) to provide both cached and dynamic content to end users and provide scalable storage capacity that is adaptable to peak demands. The initiative will support PK-12 education statewide by delivering information that is needed, when it is needed, to individual devices. This initiative will involve the transition from LEA-hosted server infrastructures to a centralized, cloud-hosted infrastructure as service. The state used $3.1 million ofCMS' Race to the Top allocation to support this initiative. The three NC RttT objectives being met include: Incorporating the state infrastructure blueprint into technology plans; implementation of an infrastructure blueprint; and providing and supporting teacher, administrator access to Learner Management System, Learning Object Repository and web collaboration tools. CMS will provide any necessary infrastructure to connect to the NC Cloud and ensure end-users have access to the data and resources available in the Cloud. We are currently providing wireless Internet access and increased bandwidth in schools and offices in support of the district's Bring Your Own Technology (BYOT) initiative.

Priority!. Statewide Shared Services Model

Suggested Goalsffargets	Year I JulY 1, 2014-June 30, 2015	Year2 July 1, 2015-June 30, 2016	Yearly Evaluation	
			Evaluation Method(s)	DPI Use
Ensure each student has equitable access to personalized learning	Evaluate any NC Education Cloud offering that might include student resources, teacher resources, any devices for which the State obtained special pricing. Consider State provided email or document storage *Responsible:* *Office of Chief of Learning Services* *Legal Dept*	Continue evaluation of offerings and/or develop implementation plan *Responsible:* *Office of Chief of Learning Services* *Legal Dept*	Rubric for evaluation of goods and services; Implementation plan; Cost/benefit analysis	
Reduce operating costs by facilitating a more strategic budgeting model	Evaluate any device and service offerings from the State to facilitate cost savings for online assessments. *Responsible:* *Office of Chief of Learning Services*	Continue to evaluate offerings and/or develop implementation plan *Responsible:* *Office ofChiefof Learning Services*	Rubric for evaluation of goods and services; Implementation plan; Cost/benefit analysis	

Facilitate a more strategic budgeting model utilizing blended funding and reducing isolated programmatic spending	Provide all schools with a base level of technology, taking advantage of shared services. Title I schools will supplement the base level to provide additional technology to schools using a planned approach consistent with the district technology plan and the school improvement plan *Responsible:* *Office of Chief of Learning Services* *Title I*	Expand base technology standard if appropriate and funded. Continue to supplement above the base with Title I funding. *Responsible:* *Office of Chief of Learning Services* *Title I*	Percentage of schools meeting base standard List of supplemental technology goods/services provided by Title I

Maximize E-Rate in support of instructional programs	Attend E-Rate webinars, meetings, and calls with DPI to remain current on eligibility requirements *Responsible: Office of Chief of Learning Services*	Continue attendance at E-Rate webinars, meetings, calls with DPI to remain current on eligibility requirements *Responsible: Office ofChiefof Learning Services*	Award ofE-Rate funding
	Apply forE-Rate funding for district determined eligible goods and services at eligible schools *Responsible: Office of Chief of Learning Services*	Continue to apply forE-Rate funding for all eligible goods and services at eligible schools *Responsible: Office of Chief of Learning Services*	
	Apply forE-Rate funding for voice/voice mail equipment and/or services that contribute to student safety, security and excellent parent communications *Responsible: Office of Chief of Learning Services*	Continue to apply forE-Rate funding for voice/voice mail equipment and/or services that contribute to student safety, security and excellent parent communications *Responsible: Office of Chief of Learning Services*	

Provide content filtering in accordance with the Children's Internet Protection Act (CIPA).	Evaluate statewide Shared Service offering for filtering (ZScaler). *Responsible:* *Office of Chief of* *Learning Services*	Implement the software determined by evaluation metric *Responsible:* *Office ofChiefof* *Learning Services*	Rubric to evaluate filtering solutions Cost/benefit analysis
Evaluate the offerings of the State Instructional Improvement System for use in the CMS Talent Effectiveness initiative	Continue the design of additional modules purchased for CMS implementation of the Talent Management software *Responsible:* *HR* *Office ofChiefof* *Learning Services*	Fully implement Talent Management modules *Responsible:* *CMS Human Resources*	Implementation plan and timeline

Strategic Priority 2: Universal Access to Personal Learning and teaching Devices

Essential Questions

What is universal access to personal learning and teaching devices?

Why do our teachers and students need access to personal learning and teaching devices?

How will we provide ample access to individual learning and teaching devices?

What models can be used for implementing universal access to personal learning and teaching devices in Charlotte-Mecklenburg?

Current Status and Moving Forward

Charlotte-Mecklenburg Schools recognizes that our world continues to evolve into one that embraces personal mobile devices. The latest trend in technology is towards more personal devices that are highly customizable by the end user. Current iterations of smart phones and other mobile devices are evidence of this fact. The district also recognizes that sufficient funding will be required in order to provide each student with their own personal learning device. Part of the solution is answered by taking advantage of Bring Your Own Technology (BYOT). Charlotte-Mecklenburg Schools began implementation in 2012 with all schools having a filtered "guest network" for wireless connectivity by the opening of school in 2013. Wireless connectivity is available in the brick and mortar classrooms. Work has begun to provide the same connectivity for mobile classrooms.

The BYOT environment allows users to experience a filtered Internet enviromnent with their personal devices. Good coverage is provided for Internet use (1.5 access points per classroom). Students and staff are able to access documents and other digital content from personal devices, as well as CMS devices from either school or home. As infrastructure expands, the capability of delivering applications on both personal and CMS devices will be available.

The district will also provide personal learning and teaching devices in schools throughout the district. While some users may prefer to use their own device, other users will take advantage of the devices provided by CMS to access and create digital content. Federal, state, local and grant funds will continue to be leveraged for the purchase of digital content as well as personal learning devices. The infrastructure will continue to be enhanced to meet the growing demands of an ever- expanding digital learning environment.

Alignment to Other Plans and Initiatives:

Strategic Priority 2: Universal Access to Personal Learning and Teaching Devices
Charlotte-Mecklenburg will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of our plan:

CMS Strategic Plan 2018
  Goal 1: Maximize academic achievement in a personalized 21st-century learning environment for every child to graduate college- and career-ready
  Goal6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school design

Career and College Ready, Set, Go!
  Goal2: Recruit, develop, retain and reward a premier workforce
  Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems

Accountability and Curriculum Reform Effort (ACRE)
  By providing universal access to personal learning and teaching devices, CMS will better prepare for the transition to online assessments and digital textbooks/resources.

Race to the Top Local and State Scopes of Work
  Implementation of the NC Education Cloud involves the development of a Tier 4 style data center that ensures hosted infrastructure is safe and secure. The Cloud will be used as a content distribution network (CDN) to provide both cached and dynamic content to end users and provide scalable storage capacity that is adaptable to peak demands. The initiative will support PK-12 education statewide by delivering information that is needed, when it is needed, to individual devices. This initiative will involve the transition from LEA-hosted server infrastructures to a centralized, cloud-hosted infrastructure as service. The state used $3.1 million ofCMS' Race to the Top allocation to support this initiative. The three NC RttT objectives being met include: Incorporating the state infrastructure blueprint into technology plans; implementation of an infrastructure blueprint; and providing and supporting teacher, administrator access to Learner Management System, Learning Object Repository and web collaboration tools. CMS will provide any necessary infrastructure to connect to the NC Cloud and ensure end-users have access to the data and resources available in the Cloud. We are currently providing wireless Internet access and increased bandwidth in schools and offices in support of the district's Bring Your Own Technology (BYOT) initiative.

Priority 2: Universal Access to Personal Learning and Teaching Devices

Suggested Goalsffargets	Year1 July 1, 2014-June 30, 2015	Year2 July 1, 2015 –June 30, 2016	Yearly Evaluation Evaluation Method(s)	DPI Use
Expand wireless connectivity in mobile classrooms. Use Bring Your Own Technology (BYOT) as a means to supplement CMS owned devices to be used in learning and teaching.	Provide a wireless infrastructure in all mobile classrooms that enables a filtered Internet experience for users with personal mobile devices

Responsible: Office of Chief of Learning Services | Expand infrastructure and bandwidth as devices and digital contents increase and demand is high

Responsible: Office of Chief of Learning Services | Mobile wireless project plan/timeline

Network monitoring reports | |
| Effectively communicate to all stakeholder groups about the impact of personal learning devices on the learning and teaching environment. | Develop and implement a comprehensive communication plan that informs all stakeholders

Responsible: CMS Communications Dept Office of Chief of Learning Services | Continue with the implementation of the comprehensive communication plan

Responsible: CMS Communications Dept Office of Chief of Learning Services | District and parent survey results | |

Develop and implement Parent University courses for parents	Continue with the implementation of the Parent University courses for parents	District and parent survey results
Responsible: *Parent* *University*	*Responsible:* *Parent University*	

Increase student and staff access to personal learning devices.	Develop a plan that will provide a device for every student and classroom teacher. Increase technology resources and rich digital content to enhance learning and teaching.	Prepare a budget plan for sustainability and refresh of legacy devices.	Network usage reports
			MMIS audit reports
		Responsible: Office of Chief of Learning Services	Grant applications
	Seek funding opportunities from state, federal, and local entities.		E-Rate funding
	Responsible: Office of Chief of Learning Services		

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Strategic Priority 3: Statewide Access to Digital Learning and Teaching Resources, Including Digital Textbooks

Essential Questions

What are digital learning and teaching resources? What are digital textbooks? Why do teachers and students need access to digital learning and teaching devices? What are the benefits of digital textbooks?

What are open educational resources and how can they be used?

How can access to these resources be increased in our LEA?

Current Status and Moving Forward

Charlotte-Mecklenburg Schools entire vision for 21st century learning is guided by our *Strategic Plan 2018: For a Better Tomorrow.*
http://www.cms.k12.nc.us/mediaroomlstrategicplan2018/Pages/de(ault.asox

Strategic Plan 2018 (SP2018) serves as the foundation for instructional decisions, including technology, throughout our district. Student achievement is the keystone of the plan. Digital resources are viewed as a critical tool to enhance instruction throughout the district.

Digital learning and teaching resources are as varied as instructional methodologies. Student response systems, computers, tablet technology (iPad, Kindle, Nook), PCs, laptops, smart phones, document cameras, interactive whiteboards, data portals, Math Forward and digital ancillaries are but a few examples of technology designed to provide a medium for more flexible differentiated instruction, student response and enhanced engagement. Digital sound, text and images are often better suited to meet the needs of diverse learners thereby reducing barriers in instruction and enhancing appropriate accommodations for some users.

Digital learning and teaching devices enable the teacher and student to move beyond the fixed limitations of text and speech. Integration of technologies in instruction reflects the role of technology in students' lives. Digital natives do not view technology as a separate entity. Technology is inherent, seamless and transparent. The natural progression of instruction reflects the use of technology to transform instruction, enhance learning and increase student success. When teachers integrate technology as part of their classroom instruction, students are empowered and become actively engaged in their learning. Technology integration occurs when teachers know how and when to use technology as a teaching tool to maximize student learning. Technology is not just an add on, it is a learning tool that, when properly integrated in instruction, allows students to access information, learn content, solve problems, analyze and synthesize information in a timely manner and ultimately present their understanding. Technology extends the classroom beyond the walls of school or home so that students have access to resources and learning to be enhanced by the global experience.

The benefits of digital textbooks include aligning the learning styles of digital natives with instruction. Learning goes beyond physical access thereby requiring cognitive engagement through the use of appropriate, just in time technology. Updated information is continually available to students and teachers. Technology opens the door to accommodations for our students with special needs. For example, e-Readers or Text readers/magnifiers provide further accommodations for students.

Open education resources (OER) are learning and teaching materials that are freely available online for everyone to use, whether student, parent or instructor. The materials supplement day-to-day instruction and may enhance the educational experience for our students. Critical evaluation of OER is key to their

successful implementation. Instructional WIKIS, Edmodo and Yammer are examples of OER currently in use in Charlotte-Mecklenburg Schools. A significant plan of professional development for teachers is underway utilizing Google Apps for Education. CMS is realizing the many benefits from using this platform. We anticipate expanding these offerings throughout the life of the technology plan.

Digital instructional ancillaries and supplemental online student resources are regularly part of the adopted textbook programs. Students enrolled in Mandarin Chinese utilize an online text. This text is available to all students through LeamNC. Discovery Education is used now as a resource replacing science textbooks within CMS. MAPS!Ol is a digital resource providing the most current geography resources. Additionally all parents and students may access MAPS 101 at home 24/7. Online textbooks are becoming more commonplace at the university level. The increased use of these materials by CMS students provides additional preparation for college and beyond.

High school juniors and seniors will be provided an opportunity to participate in the Career and College Promise (CCP) by taking online courses for college credit, offered through a variety of North Carolina community colleges. CCP provides students with the experience of college while still providing them with the support of high school. It gives students an opportunity to improve their chances of success once they enter college. Better preparation for matriculating students should result in an improved graduation rate at the college level. Decreasing the dropout rate and shortening the graduation timetable will decrease the cost of subsidizing tuition for students enrolled in state institutions and should result in a significant savings as the cost of tuition hours in the university is significantly more than the cost of tuition hours in the community college system. Students have an opportunity to complete the Core 44 College Transfer Pathway where, upon completion, general education requirements will be waived by the NC institution they attend. Students that were on track to graduate early now have a strong reason to remain at the high school, where they can complete college classes without having to pay tuition. Students earn credit both at the high school and college level. The college credits count toward college general education requirements and give students the opportunity to transition into college level classes, earning college credits, while maintaining high school support. Students will be able to bring their own technology to supplement the availability at the school.

Our ability to increase access to these resources is continually under review and is reflective of global conversations related to the rapid expansion of instructional technology. Redesign of the traditional classroom is underway creating learning spaces that support our digital natives. Principals, school leadership and the increase of online professional development are helping to integrate technology into effective lesson design, implementation, testing, and staff evaluation. As a result of the needs of our students and the dynamics of technology development, digital learning and teaching resources will continue to evolve throughout and beyond the life of the 2014-16 CMS Technology Plan.

Alignment to Other Plans and Initiatives:

Strategic Priority 3: Statewide Access to Digital Learning and Teaching Resources, Including Digital Textbooks
Charlotte-Mecklenburg will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of our plan:

CMS Strategic Plan 2018
- Goal1: Maximize academic achievement in a personalized 21"-century learning environment for every child to graduate college- and career-ready
- Goal 6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign

ACRE (Accountability and Curriculum Reform Effort)
As the Common Core State Standards (CCSS) and North Carolina Essential Standards (NCES) are adopted and assessed, the increased use of technology is expected to support the implementation of both the curriculum and instruction through the expansion ofleaming time and accessibility of resources. Collaboration is a vital component of the new standards allowing both students and teachers the opportunity to achieve instructional flexibility to best meet student needs. The ability to collaborate outside the classroom introduces a global platform to both students and teachers.

Career and College Ready, Set, Go!

- Goal I: Maximize academic achievement in a personalized 21"-century learning environment for every child to graduate college- and career-ready
- Goal2: Recruit, develop, retain and reward a premier workforce
- Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems
- Goal 6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign

Race to the Top Local and State Scopes of Work
Implementation of the NC Education Cloud involves the development of a Tier 4 style data center that ensures hosted infrastructure is safe and secure. The Cloud will be used as a content distribution network (CDN) to provide both cached and dynamic content to end users and provide scalable storage capacity that is adaptable to peak demands. The initiative will support PK-12 education statewide by delivering information that is needed, when it is needed, to individual devices. This initiative will involve the transition from LEA-hosted server infrastructures to a centralized, cloud-hosted infrastructure as service. The state used $3.1 million ofCMS' Race to the Top allocation to support this initiative. The three NC RttT objectives being met include: Incorporating the state infrastructure blueprint into technology

plans; implementation of an infrastructure blueprint; and providing and supporting teacher, administrator access to Learner Management System, Learning Object Repository and web collaboration tools. CMS will provide any necessary infrastructure to connect to the NC Cloud and ensure end-users have access to the data and resources available in the Cloud. We are currently providing wireless Internet access and increased bandwidth in schools and offices in support of the district's Bring Your Own Technology (BYOT) initiative.

The Use of Title I / ESEA Federal Funds to Support Instruction

Title I /ESEA funds shall be used to supplement district-wide initiatives and will not serve to supplant. Providing devices in schools where few children will be able to participate in the district BYOT initiative, as well as mobile device technology above the standard, are under consideration.

Innovation in Online / Digital Instruction
Career and Technical Education (CTE)

The focus of the use technology in CTE classrooms is to transform instruction, enhance learning and increase student engagement, creativity, collaboration and success. When teachers integrate technology as part of their classroom instruction, students are empowered and become actively engaged in their learning. The integration of technology in CTE focuses on three areas; classroom integrative technology, online access, and professional development.

Integration systems chosen facilitate student engagement, enhance learning and assist instruction. These are:

- The Student Response System, an interactive technology, helps to engage the student, provides real time data for the teacher and is an additional instructional and/or learning tool available to teachers.
- The Interwrite Mobi is a wireless pad that provides the freedom to interact with a projected presentation from anywhere in the room. The teacher can write annotations and run applications remotely and encourage student participation.
- Digital, still and video cameras (Flip Video) promote planning and producing, collaboration, communication, creative thinking and problem solving. Presentation skills are sharpened as students present their material to classmates.
- The Document Camera allows the presenter to project three-dimensional objects or standard documents via LCD for the audience to view. It will also save a digital image which can be used or reviewed at a later time.

Online resources for CTE Teachers and Students are made available via two CTE Moodie sites:

- The CTE Teacher Site provides resources, documents and support for all middle and high school teachers via curriculum-specific categories. This site employs a 24/7 anytime-anywhere model for teacher access to instructional resources, assignments and training. Secure access is provided for all users.

- eCTE Student Site provides online student access to course materials, resources, activities and assignments. Online class assignments, documents, class reviews and resources are available to CTE students and can be accessed 24/7. Self-paced review, make-ups for extended absences and timely results of student progress are available for teachers.

- CTE continues to move forward in development of online, blended and fully instructional courses for the 2014-15 school year.

Professional development for teachers is not just necessary but imperative. Integration occurs when teachers understand when and how to use technology as a teaching tool to maximize student learning. Teachers are given the opportunity to learn how to implement new technology, collaborate and share activities and strategies.

Common Core / Essential Standards

As the Common Core State Standards and North Carolina Essential Standards are adopted and assessed, the increased use of technology is expected to support the implementation of curriculum and instruction allowing the expansion of learning time and accessibility of resources. Collaboration is a vital component of the new standards, allowing both students and teachers the opportunity to achieve instructional flexibility to best meet student needs. The ability to collaborate outside the classroom introduces a global platform to both students and teachers.

Response to Instruction

Responsiveness to Instruction (Rtl) is a research-based process of instruction, assessment and intervention. The process allows schools to identifY struggling students early, and provide appropriate instructional interventions in academics and behavior to increase the likelihood for student success. The reauthorization of the Individuals with Disabilities Education Improvement Act (IDEA, 2004) and the passage of the No Child Left Behind Act (NCLB, 2001) stresses the use of instruction and interventions that are scientifically research-based, as well as the delivery of effective academic and behavior supports to improve student performance. Additionally, Rtl provides a multi-tiered model of interventions that offers effective educational practices for schools to bring high-quality instruction. Technology that supports the CMS Rtl model includes but is not limited to:

Measures of Academic Progress (MAP) - A MAP assessment is delivered over the web and is aligned to national and state curricula and standards in reading and math. MAP assessments provide actionable data about where each child is on their unique learning path. MAP adapts to a student's responses as they take the test. Every test item on a MAP assessment corresponds to a value on the Rtl Scale (for Rasch Unit), so educators gain a deep understanding of what a student knows.

Reading A- Z- Reading A-Z is a member-based website that provides online curriculum resources. Each month, Reading A-Z adds new books, lesson plans and other resources, thus continually expanding its wealth of materials. The website has more than 2,500 downloadable books (including English, Spanish, and French versions) and thousands of learning and teaching materials.

AMC Anywhere - AMC Anywhere is the technology component of Assessing Math Concepts that simplifies data collection and instantly provides teachers with the instructional level for their students. Teachers enter student data directly onto a web-based platform. After assessment, teachers can access web-based reporting. AMC Anywhere offers administrators and teachers a variety of reports that summarize student results and enable teachers to make instructional decisions.

Priority 3: Statewide Access **to Digital Learning and Teaching Resources, Including Digital Textbooks**

Suggested Goals/Targets	Year1 July 1, 2014-June 30, 2015	Year2 July 1, 2015-June 30, 2016	Yearly Evaluation Evaluation Methods	DPIUse
Shift from traditional print and paper-based resources to affordable, current online resources	Develop online professional development aligned with SP2018. Access DPI shar.ed services for professional development content. *Responsible: Office of Chief of Learning Services Organizational Development Dept*	Utilize wikis, Edmodo, Moodie and DPI Homebase elements to increase professional development offerings *Responsible: Individual CMS Depts Office of Chief of Learning Services*	Professional development reports from the the HomeBase platform for professional development	
Expand the use of digital resources	Benchmark the use of digital resources by students and teachers. *Responsible: Learning and Teaching Services* Continue and expand as appropriate the CMS Instructional web to provide cloud- based software to all instructional staff	Identify areas of potential growth and support as needed. *Responsible: Learning and Teaching Services* Continue and expand as appropriate the CMS Instructional web to provide cloud- based software to all instructional staff	Percent of growth	

Use digital content aligned specifically to Common Core and Essential Standards	Form a team to evaluate and plan a digital pilot implementation of 6-12 social studies instructional materials for 2014-15

Responsible: Office of Chief of Learning Services | Continue online, digital evaluation process through implementation of the pilot. Using this experience as a model, develop a process that allows the adoption of additional digital instructional resources across the curriculum.

Responsible: Office of Chief of Learning Services | Number of devices connected to the network. Connectivity report. Filtering reports. |
| **Ensure equitable access to digital learning and teaching resources from school to school in CMS.** | Provide ClPA compliant, secured Wi-Fi access for students and staff in all CMS schools and work sites.

Responsible: Office of Chief of Learning Services | Increase ClPA compliant, secured Wi-Fi access to support the growing demand of the Bring Your Own Technology (BYOT) initiative.

Responsible: Office of Chief of Learning Services | |

Assess the need to supplement the BYOT initiative.

Responsible:
Office of Chief of Learning Services

Develop a plan to address inequities of access across the district. Work with PTAs, outside organizations, business partners to provide devices for online access on the guest network.

Responsible:
Office ofChiefof Learning Services

Partnerships Office

Number of students and staff participating in BYOT initiative

Completed technology equity plan to address needs

Strategic Priority 4: A Statewide Model of Technology-Enabled Professional Development

Essential Questions

What skiDs are needed to transition to digital learning and teaching resources?

How can these skiDs be delivered and sustained to our LEA teachers and administrators?

How do teachers, administrators and staff work with coDeagues to guide our LEA toward more effective uses of 21st Century tools for learning, teaching, and managing instruction?

How are teachers, administrators and staff prepared to understand, implement and assess the span of skills and processes that students need to succeed in the 21st Century?

How are teachers, administrators and staff prepared to apply 21st Century assessment systems to inform instruction and measure 21st Century knowledge, skiDs, performance and dispositions?

Current Status and Moving Forward

Charlotte-Mecklenburg Schools is in a unique position to provide its employees with technology-enabled professional development. Strategic Plan 2018 has the Virtual Learning Tactic to promote learning and teaching through technology. Staff must be proficient at integrating virtual learning experiences to engage students as well as to prepare them to be college and career ready. By participating in both web-based and blended online professional development opportunities, not only will staff come to understand the power of technology for learning but also the skills necessary to implement it into the classroom as well as their professional work environment. In 2012-13 CMS created technology facilitators at the high school level to assist with technology integration and professional development. In 2013-14 CMS created professional development facilitators at the middle school level to support teachers in technology integration and the common core. The focus here forward will be to retrain, retool facilitators at the elementary school level to support technology integration.

We will align professional development with the ISTE Standards for Teachers as follows:

ISTE Standard: Facilitate and Inspire Student Learning and Creativity
Teachers use their knowledge of subject matter, learning and teaching and technology to facilitate experiences that advance student learning, creativity and innovation in both face-to-face and virtual environments.

Professional Development	Participant Outcomes
Explore digital tools and resources to expand the walls of the classroom for real world application	Create a list of tools and resources currently available at their school and within their classroom Design a real world performance task for their students using available tools and resources such as Discovery Education content and Builder Tools, Edmodo and other Web 2.0 tools Move students along the Depth of Knowledge (DOK) continuum to support Common Core efforts
Learn how to effectively use technology to facilitate collaboration with fleers, students and parents.	Create a collaborative learning group to work with peers during the Professional Learning Community or Common Planning time. Create an online communication tool that can be accessed by parents and students

ISTE Standard: Design and Develop Digital-Age Learning Experiences and Assessments
Teachers design, develop and evaluate authentic learning experiences and assessments, incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills and attitudes identified in the NETS-S.

To Meet the Standard

Professional Development	Participant Outcomes
Design content-rich lessons infused with technology	• Modify a current lesson to integrate appropriate technology tools to enhance the learning experience for students. Tools include iPads, tablets, computers and Smartphones as well as apps, software and assignment tools through learning management systems.

ISTE Standard: Model Digital-Age Work and Learning
Teachers exhibit knowledge, skills and work processes representative of an innovative professional in a global and digital society.

Professional Development	Participant Outcomes
Understand effective use of technology to support instruction	• Complete a pre- and post- assessment regarding effective use of technology tools to support instruction • Participate in professional learning communities at work to learn best practices of technology integration

ISTE Standard: Promote and Model Digital Citizenship and Responsibility

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

To Meet the Standard

Professional Development	Participant Outcomes
Recognize safe and ethical use of information and technology	• Respond to scenario based-activities to demonstrate an understanding of safe and legal technology issues Explore cyber safety courses to be used in presenting safe and ethical use of information technology

ISTE Standard: Engage in Professional Growth and Leadership

Teachers continuously improve their professional practice, model lifelong learning and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

To Meet the Standard

Professional Development	Participant Outcomes
Explore current research on emerging technologies and the potential impact on the classroom environment	• Join additional personal or professional learning network to keep abreast of relevant instructional technology • Establish SMART goals for utilizing technology to enhance instruction • Commit to a plan to identifY what changes need to be made in the classroom to begin integrating technology
Learn how to organize and manage a technology-rich learning environment	Create a classroom management plan • Design routines and procedures that promote technology use within the classroom

Over the next two years we will increase the instructional capacity of delivering online courses as well as the number of online courses offered to CMS staff with the goal to strengthen our understanding of the following domains that will help us transform our practice:

- Understanding of social constructivism and inquiry-based learning (instructional philosophy)
- Best instructional practices in technology-enabled learning and teaching (pedagogy)
- Computer and information literacy, critical thinking, problem solving and innovation (21st Century skills)
- Knowledge and skills needed to select and incorporate technology tools effectively (technical skills)

Alignment to Other Plans and Initiatives:

Strategic Priority 4: A Statewide Model of Technology Enabled Professional Development
Charlotte-Mecklenburg will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of our ulan:

Strategic Plan 2018
Goal!: Maximize academic achievement in a personalized 21"-century learning environment for every child to graduate college- and career-ready
Goal 2: Recruit, develop, retain and reward a premier workforce
Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems
Goal 6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign

Career and College Ready, Set, Go!
Goal 1: Maximize academic achievement in a personalized 21"-century learning environment for every child to graduate college- and career-ready
Goal2: Recruit, develop, retain and reward a premier workforce
Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems
Goal6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign

Accountability and Curriculum Reform Effort (ACRE)
By participating in the state-wide model of technology-enabled professional development, CMS will better prepare for the transition to online assessments, digital textbooks and universal access to personal teaching devices.

Race to the Top Local and State Scopes of Work

Implementation of the NC Education Cloud involves the development of a Tier 4 style data center that ensures hosted infrastructure is safe and secure. The Cloud will be used as a content distribution network (CDN) to provide both cached and dynamic content to end users and provide scalable storage capacity that is adaptable to peak demands. The initiative will support PK-12 education statewide by delivering information that is needed, when it is needed, to individual devices. This initiative will involve the transition from LEA-hosted server infrastructures to a centralized, cloud-hosted infrastructure as service. The state used $3.1 million of CMS' Race to the Top allocation to support this initiative. The three NC RttT objectives being met include: Incorporating the state infrastructure blueprint into technology plans; implementation of an infrastructure blueprint; and providing and supporting teacher, administrator access to Learner Management System, Learning Object Repository and web collaboration tools. CMS will provide any necessary infrastructure to connect to the NC Cloud and ensure end-users have access to the data and resources available in the Cloud. We are currently providing wireless Internet access and increased bandwidth in schools and offices in support of the district's Bring Your Own Technology (BYOT) initiative.

Priority 4: A Statewide Model of Technology-Enabled Professional Development

Suggested Goals/Targets	Year1 July 1, 2014-June 30,2015	Year2 July 1, 2015-June 30,2016	Yeairly Evaluation Evaluation Me hod(s) DPIUse
Implement a plan for technology-enabled professional development (PD) for teachers and administrators with a support model that promotes the ideals of technology integration	Continue creating the Professional Development Facilitator position in all schools. Retrain school facilitators to assume this role. *Responsible: Dept of Organizational Development assisted by the Instructional Technology Dept*	Continue to develop technology-based PDs at the district & school level.	% of dedicated staff to focus on professional development and technology integration Professional Development participation reports
	Survey school staff and use the STNA, School Technology Needs Assessment, (provided by Cobalt at NCSU) in determining targeted professional development *Responsible: Chief of Learning Services, Instructional Technology*	Ensure school improvement plans include PD focused on the school/individual technology **assessments**	School Improvement Plans Professional Development participation reports Individual growth plans

Promote inquiry-based learning, higher order thinking, constructivism *&for* application through PDs that includes technology integration.

Responsible:
Office of Learning and Teaching
Learning Community staff

Ensure the school improvement plans include goals around professional learning community development of the technology-based **PD.**

Responsible:
School Leadership Team
Learning Community stqff

Promote inquiry-based learning, higher order thinking, constructivism *&for* application through PDs where the integration of technology is required.

Responsible:
Office of Learning and Teaching
School Leadership Team
Learning Community staff

School and district professional development plans aligned with survey results and Strategic Plan 2018

CMSSummer Institute course offerings focused on district technology needs

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Leverage media specialists and instructional technology facilitators to support digital reform. (media specialists are aligned with the Virtual Learning and Media department as of2013-14)

Require school administrators to include the media specialist, technology facilitator and the professional development facilitator on the School Leadership Team to initiate the reform

Responsible: Learning Community staff

Require school administrators to include the media specialist, technology facilitator and the professional development facilitator on the School Leadership Team to continue the reform.

Responsible: Learning Community staff

SchfJOl Leadership Tea)n roster

Sch ol Improvement Plan

Deliver Common Core and Essential Standards (CCSS/ES) training to teachers using integrated technology as a model for further classroom integration.	Create online modules and courses incorporating Web 2.0 tools to support the implementation and instruction of CCSSIES. *Responsible:* *qjfice of Learning and Teaching Services* *Organizational Dev Services*	Increase tbe number of online course offerings incorporating Web 2.0 tools on the instruction ofCCSSIES. *Responsible:* *Office of Learning and Teaching Services* *Organizational Dev Services*	PD course reports on courses offered by Learning Services and schools
	Create a web form for teachers to share required CCSSIES tasks, rubrics and student work samples for Wl-Argumentation. *Responsible:* *Learning and Teaching Services* *All teachers*	Continue tbe use of tbe task web form to facilitate additional CCSS/ES collaboration witbin professional learning communities. *Responsible:* *Learning and Teaching Services* *All teachers*	Task reports and examples from the website
	Create and post curriculum guides on tbe CMS Intranet to support CCSSIES. *Responsible:* *Learning and Teaching Services*	Strengthen tbe CCSSIES instruction by including common required tasks focusing on essential skills. *Responsible:* *Learning and Teaching Services*	Task reports and examples from tbe website

Prepare staff for online assessment delivery.	Continue training for Testing Coordinators regarding the protocols and administration of the state- required assessments as capabilities permit. *Responsible:* *Office of* *Accountability*	Strengthen training for Testing Coordinators regarding the protocols and administration of the state- required assessments as capabilities permit. *Responsible:* *Office of Accountability*	Agepdas, sign-in she<jts, screenshots Online assessment tutorlals provided by the state
	Use the train-the-trainer model, Testing Coordinators will train teachers at the school level in the administering of online state assessment as capabilities permit. *Responsible:* *School Leadership* *Qffice of Accountability*	Use the train-the-trainer model, Testing Coordinators will train teachers at the school level in the administering of online state assessment as capabilities permit. *Responsible:* *School Leadership* *Office of Accountability*	Agendas, sign-in sheets, Screenshots Online assessment tutorials provided by the State
Prepare stndents for online assessment delivery.	Utilize online tutorials provided by state to assist and prepare students to complete assessments online. Include student exposure to online assessments as part of School Improvement Plan. Student experience with testing devices is necessary. *Responsible:* *Office of Accountability* *Learning Community Staff* *Testing Coordinators*	Continue to utilize online tutorials provided by state to assist and prepare students to complete assessments online. Provide additional training as capabilities permit. Continue student exposure to online assessments as part of School Improvement Plan. *Responsible:* *School Leadership Team* *Testing Coordinators*	Agendas, screen shots, rosters School Improvement Plan usage reports or examples of tools used

Provide ongoing support and professional development necessary for use of data to inform instruction.	Train school leadership on how to interpret data from various testing sources. Provide support for leadership in training instructional staff on interpretation of data and measures to be taken as a result. *Responsible:* *Office of Accountability*	Continue to train school leadership on how to interpret data from various testing sources. Provide support for leadership in training instructional staff on interpretation of data and measures to be taken as a result. *Responsible:* *Office of Accountability*	PDcourse **offe ings, rosters,** webinar archives
	Train instructional staff on interpretation of data and measures to be taken as a result. *Responsible:* *School Leadership Team*	Continue to train instructional staff on interpretation of data and measures to be taken as a result. *Responsible:* *School Leadership Team*	PD course offerings, rosters, webinar archives
	Establish targeted professional development opportunities to provide training for the web-based assessment and data platform. *Responsible:* *Office of Accountability*	Increase targeted professional development opportunities to provide for the web-based **assessment.** *Responsible:* *Office of Accountability* *School Leadership Team*	PD request forms and survey results

	Develop virtual learning networks to provide on-going discussions regarding the use of data in instructional decision making.	Continue to use virtual learning networks to provide targeted discussions to assist with instructional decision making.	Evidence of onlihe chats and posJ!s between participants
	Responsible: *Office of Accountability* *Technology Services*	*Responsible:* *Office of Accountability* *Technology Services*	Fee back at focus groups
Provide professional development and support for teachers and administrators in 21'' centnry learning and teaching.	Develop training courses focusing on 21'[1] Century systems and learning tools.	Continue to develop courses on 21st Century systems and learning tools.	PD course listing
	Build a resource list of current and relevant instructional technology, apps and websites	Continue to build and update the resource list	Resource list
	Responsible: *Learning and Teaching Services* *Organizational Dev Services* *Learning Community staff* *School Leadership Team*	*Responsible:* *Learning and Teaching Services* *Organizational Dev Services* *Learning Community staff* *School Leadership Team*	

Strategic Priority 5: 21st Century Leadership for All Schools and Districts

Essential Questions

Are your LEA leaders prepared to lead and create a vision for 21st century education?

Are mechanisms in place for school leaders to create 21st century learning cultures?

Are professional growth programs/opportunities available to prepare teachers and administrators to lead 21st century learning environments?

Current Status/Moving Forward

The performance of school leadership is essential for student success. There is no truly great school without a great principal leading it. School leadership has a direct effect on teachers. One key impact great leaders have on school outcomes is their effect on recruiting and retaining great teachers. Like most other people, teachers want to work with leaders they trust and respect, and who can help them to achieve their mission of helping students succeed. Teachers have repeatedly ranked school leadership as a top reason they choose to stay or leave a school or the profession altogether. Top teachers want top leaders.

Charlotte-Mecklenburg Schools believes that it is important to not only invest in technology but also in people. ill order for CMS to provide an effective 21" learning experience for all students, teachers and administrators must be prepared. The district recognizes that the key to the development of successful 21" century learning environments rests in effective professional development. Educators in CMS have a variety of professional development opportunities focused upon the development of 21" century skills. Educators also have opportunities to collaborate via a robust system of professional learning communities as well as online via social media. These opportunities will be expanded to include a stronger focus upon the ISTE/NETS standards for teachers and administrators. CMS will also focus upon the development of a global digital leader that understands and models how to effectively live in a digital society. Ultimately, all school leaders must be able to create and lead a shared vision for effective technology integration.

Through the collaboration of the Office of Learning Services and the Office of School Performance our leaders are being encouraged and developed to model technology and encourage the use of technology in instruction. Monthly principal meetings are technology infused: flipped meetings, document sharing, presentations, genius bar, introduction to new tools, software and applications for personal productivity, as well as instructional tools and software that can be used in instructional programs. The technology focus at the CMS Summer Institute for Leadership affords our leaders growth opportunities and encourages innovation in our schools.

Alignment to Other Plans and Initiatives:

Strategic Priority 5: 21st Century Leadership for All Schools and Districts
Charlotte-Mecklenburg will utilize and align with the following key initiatives/plans to reach for the vision and complete the strateeic nriorities of O UJ' nlan:

Strategic Plan 2018

    Goal 1: Maximize academic achievement in a personalized 21"-century learning environment for every child to graduate college- and career-ready

    Goal 2: Recruit, develop, retain and reward a premier workforce

    Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems

    Goal6: Inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign

Accountability and Curriculum Reform Effort (ACRE)

    By creating 21" century leaders for all schools and the district, CMS will better prepare for the transition to'online assessments, digital textbooks and universal access to personal teaching devices. \

Career and College Ready, Set, Go!

    Goal 2: Recruit, develop, retain and reward a premier workforce

    Goal 5: Optimize district performance and accountability by strengthening data use, processes and systems

Race to the Top Local and State Scopes of Work

    Implementation of the NC Education Cloud involves the development of a Tier 4 style data center that ensures hosted infrastructure is safe and secure. The Cloud will be used as a content distribution network (CDN) to provide both cached and dynamic content to end users and provide scalable storage capacity that is adaptable to peak demands. The initiative will support PK-12 education statewide by delivering information that is needed, when it is needed, to individual devices. This initiative will involve the transitiori from LEA-hosted server infrastructures to a centralized, cloud-hosted infrastructure as service. The state used $3.1 million ofCMS' Race to the Top allocation to support this initiative. The three NC RttT objectives being met include: Incorporating the state infrastructure blueprint into technology plans; implementation of an infrastructure blueprint; and providing and supporting teacher, administrator access to Learner Management System, Learning Object Repository and web collaboration tools. CMS will provide any necessary infrastructure to connect to the NC Cloud and ensure end-users have access to the data and resources available in the Cloud. We are currently providing reless Internet access and increased bandwidth in schools and offices in support ofthe district's Bring Your Own Technology (BYOT) initiative.

Priority 5: 21st Century Leadership for All Schools and Districts

Suggested Goals/Targets	Year 1 July 1, 2014- June 30, 2015	Year2 July 1, 2015- June 30, 2016	Yearly Evaluation	
			Evaluation Methods	DPI Use
Educational administrators will promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.	Continue to align the district technology plan with the goals and strategies outlined lined in the CMS Strategic **Plan** 2018 *Responsible:* *Office of Chief of Learning Services*	Utilize technology to maximize efficiency (allocating time & resources) *Responsible:* *Office of Chief of Learning Services*	Management oversight committee Revi'ew of annual budgets and budget requests	
	Align district and school house budgets to support leaders as they address gaps in digital equity *Responsible:* *All Leaders*	Align district and school house budgets to support leaders as they address gaps in digital equity *Responsible:* *All Leaders*	Innovative budget comparisons	
	Design professional development to support district, school and classroom leaders as they use technology effectively *Responsible:* *Office of Chief of Learning Services*	Design professional development to support district, school and classroom leaders as they use technology effectively *Responsible:* *Office of Chief of Learning Services*	Professional development evalilations	

Charlotte-Mecklenburg Schools will build leaders who recognize the value of strategic planning in order to maximize student performance.	Develop leadership skills in areas of:
	  -Change management
	  -Project management
	  -Collaborative decision making
	
	Responsible:
	Offices of Organizational Development and Strategic Plan Management
		Continue to develop skills in the areas of:
		  -Change management
		  -Project management
		  -Collaborative decision making
		
		Responsible:
		Office of Organizational Development and Strategic Plan Management
			Profr:ssional development evaluatwns
			
			Strategic Plans

	Support the infrastructure of the leaders in CMS in the areas of:
	  -Policies
	  -Technology
	  -Resource management
	  -Research based practices
	  -Accessing community resources
	  -21st century skills
	
	Responsible:
	Office of Chief of Learning Services
	Office of School Performance Legal Dept. Communications Dept.
		Continue to support the infrastructure of the leaders in CMS in the areas of:
		  -Policies
		  -Technology
		  -Resource management
		  -Research based practices
		  -Accessing community resources
		  -21st century skills
		
		Responsible: Office of Chief of Learning Services Chief Academic Office Legal Dept. Communications Dept
			Sch6oi Improvement Plank
			
			Distli.ct Scorecards

The global digital leader will promote, model and facilitate responsible use of technology in learning,_ professional, and social environments	Create a professional community that is focused upon the development of global digital leadership *Responsible:* *Offices of Chief of Learning Services and School Performance*	Incorporate global digital topics in all ranges of collaboration with all levels of leadership *Responsible:* *Offices of Chief of Learning Services and School Performance* *Executive leadership*	Plans, agendas for professional communities Assessments, surveys
	Model effective teclmology integration during leadership meetings *Responsible:* *All Leaders*	Continue to model effective teclmology integration during leadership meetings *Responsible:* *All Leaders*	Agendas Formal and informal assessments Surveys
Develop 21'¹century leaders who will create a shared of technology integration to promote excellence in Charlotte-Mecklenburg Schools that aligns with Strategic Plan 2018 and district-wide initiatives.	Promote the ISTEINETS CMS educators and students *Responsible:* *Office of Chief of Learning*	Integrate the ISTE/NETS for CMS educators and students *Responsible:* *Office of Chief of Learning* *Chief Academic Office*	Scho 1 Improvement Plans!
	Create opportunities to develop the skills of administrators to facilitate teaching, learning, and working in a 21st century education environment *Responsible:* *Office of Chief of Learning Services*	Continue to provide opportunities that develop the skills of administrators to facilitate teaching, learning, and working in a 21'¹century education environment *Responsible:* *Office of Chief of Learning Services*	Professional development evaluahons

Develop strategic partnerships with community and businesses to promote 21st Century learning *Responsible:* *Offices of Learning Services and School Performance* *Office of Partnerships*	Enhance strategic partnerships with community and businesses to promote 21st Century learning *Responsible:* *Offices of Learning Services and School Performance* *Office of Partnerships*	Partnlrship survey data % offyusinesses who agree to partic pate #of ejnployees/community memljers who are engaged in this effort
Engage in an ongoing process to develop, implement, monitor, communicate and adjust technology-infused strategic plans *Responsible:* *Office of Chief of Learning Services*	Continue the ongoing process to develop, implement, monitor, communicate and adjust technology-infused strategic plans *Responsible: Office ofChiefof Learning Services*	Sch0ol Improvement Plans/CMS Strategic Plan 2018

Appendix A: Policies
and Procedures
Charlotte-Mecklenburg Technology Plan
Policy, Procedure, & Guidelines Implementation Chart

Policies, Procedures, & Guidelines All Policies, procedures and guidelines should be updated to include the fundamentals of 21st Century Education and Information & Technology Skills. Policies should be translated into predominant languages of students and parents. Policies, procedures and guidelines should be displayed along with the STP and other referenced ··LEA/Charterplans.·Make sure Iiiikshavenavigation Ttharare·user friendly.	LEA Policy Code or Procedure	LEA Adoption, Implementation or Revision - Date
Policies Required		
A. Materials Selection Policy including internet resources (GS §115c-98(b))	IJL-P IJL-R	11/01 3/03
B. Disposal of Equipment / Replacement of Obsolete Equipment (GS §115c-518)	DNB	10/04
C. Hardware and Software Procurement (GS § 115c-522, 115c-522.1)	DJ	2/05
D. Copyright and Plagiarism Policy (PL §94-553, 90 Stat. 2541),	DFE	4/00
E. Acceptable Use Policy (PL §106-554) (including existing 1:I, bring your own device)	IJNDB-R EGA-R	6/8/2005 5/29/200
F. Equipment/Materials Donation Policy (GS §115C-518)	DNB	10/04
G. Data Privacy Policy (20 U.S.C.§ 1232g; 34 CFRPart 99 (FERPA))	EGA EGA-R EGO	12/02 5/09 12/02
H. Inventory Control Policy (GS §115c-539, 115c-102.6A-C(5))	DNB	10/04
I. Access to Services Policy (GS §115c-106.2)	IHBA	9/91
J. Online Assessment and Instruction Policy	IKF IKF-R	1112 5110
K. Advertising and Commercialism Policy (GS §115c-98) (Procurement and gifts ethics)	GBEA KCD-R	12110/20 6/1/2005
L. Internet Safety and Ethical Use including Cyber-bullying and Harassment (Protecting Children in the 21" Century Act, CIPA, FERPA, GS II5C-407)	IJNDB-R JICK-R	6/8/2005 4/1/2010
Procedures		
A. Hardware and Software Deployment	Instructional Computer Procedure	8/1/08
B. Equipment maintenance and repairs	**elecommunications epair Procedure**	8/1/08
C. Outdated Resources and Equipment Replacement	Instructional Computer Charter	8/1/08
D. Disaster Recovery of Data and Hardware	Operations Disaster Procedures	8/1/08
E. Administration of Online Courses	Professional Developm	811/08
F. Administration of Online Assessment		

Guidelines		
A. Policy Traoslation	Public Information	Update as
B. Use of Digital Media aod Resources	Public Information	Update as
C. Instructional Use ofVideos	Forms- Section 10	4/18/05
-- D. Development of Online Resources	Professional Developm entDept.	8/1/05

HomeBase Module	Implementation Details	Professional Development Activities	Funding Source	Method of Evaluating Effectiveness
SchoolNet, Open Class	100% of Teacher Professional Development (TPD) staff will be trained in listed teacher resource components of HomeBase as they are made available by DPI and as long as CMS provides access to these tools	TPD staff receives training from certified district trainers or the Region 6 PD team	RttT funding 2014-15 Funding source tbd 2015-16	Staff completion rate
	TPD staff will train teachers in the use of the listed tools as part of their school support plans	TPD staff provides training to schools upon request and based on school needs	None	-Monthly school support reports of number of impacted teachers -Teacher usage reports
SchoolNet	Attend NCDPI provided training to support the development of CMS training	Attend 5 days of SchoolNet certification training	Chief of Learnin'g Services	N/A
SchoolNet	Develop web-based training	Introduction to SchoolNet	N/A	Survey
SchoolNet	Assessment building PD	How to build an assessment	N/A	Survey
SchoolNet	Data analysis PD − Part I	How to analyze assessment data	N/A	Survey
SchoolNet	Data analysis PD − Part II	How to use data to inform instructional practices	N/A	Survey
Performance Management -teacher & principal/AP process	Support of teacher and principal/assistant principal process	Webinar and hands-on classes as needed for end of year process	N/A	Service desk tickets and phone calls for support
MyTalent-CMS modules				
Performance Management − Employee Activities	Supervisors can document employee performance issues	Webinar, online tutorial and hands-on classes	N/A	Service desk tickets and phone calls for support

HomeBase Module	Implementation Details	Professional Development Activities	Funding Source	Method of Evaluating Effectiveness
Performance Management - Non-exempt evaluations; licensed support (not dictated by DPI); exempt; senior manae;ers	PDP for all employees with beginning of year review, optional mid-year review and end-of-year evaluation and PDP review	Webinar, online tutorial and hands-on classes	*NIA*	Service desk tickets and phone calls for support
Certification and Licensure	ESS for licensed employee to view certification/licensure information	Webinar and online tutorial only	*NIA*	Service desk tickets and phone calls for support
Coaching and Mentoring	Provide online log for mentoring and coaching	Webinar, online tutorial and mentor contact meeting to walk through process	*NIA*	Service desk tickets and phone calls for support
Career Development	In design process now	TBD	*NIA*	Service desk tickets and phone calls for support
Induction and Onboarding	TBD	TBD	*NIA*	Service desk tickets and phone calls for support
Scorecards 2014-15	TBD	TBD	N/A	Service desk tickets and phone calls for support
Differentiated Pay 2014-15	TBD	TBD	*NIA*	Service desk tickets and phone calls for support