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Background

The strategic use of technology is vital to every institution, especially one educating a diverse student body on multiple campus locations as well as online. Northern Essex Community College's updated *Information Technology Master Plan* (ITMP) will guide the institution, and more specifically Information Technology Services (ITS), in executing the College's strategic priorities and addressing the future technology needs of students, faculty, staff and the community. The goals of the ITMP are aligned to the institutional goals outlined in the College's *NECC 2020 Strategic Plan* and the Academic Master Plan (AMP).

The ITMP is intended to be a living document that is reviewed at least annually with the collaboration and oversight of the college's All College Assembly through the Information Technology Committee.

Information Technology Services (ITS)

ITS consists of the Office of the Chief Information Officer (CIO), Management Information Systems (MIS), Network Operations Center (ITNOC), Client Services and Media. The primary role of the CIO is to serve as a catalyst working with the college community to leverage technology that advances and supports the mission and goals of the College. MIS is responsible for the support and integration of administrative and academic applications. ITNOC is responsible for the planning and maintenance of the network infrastructure including wired and wireless network, data centers and horizontal cabling throughout the College's buildings. Client Services is responsible for day-to-day support through the Service Desk email and telephone requests and also through providing direct technical support, repairs and basic training. Media is a relatively new department to ITS and is responsible for the maintenance and support of our specialized setups in conference rooms, smart classrooms and computer labs. In addition Media provides technical support for audio/video needs at the College.

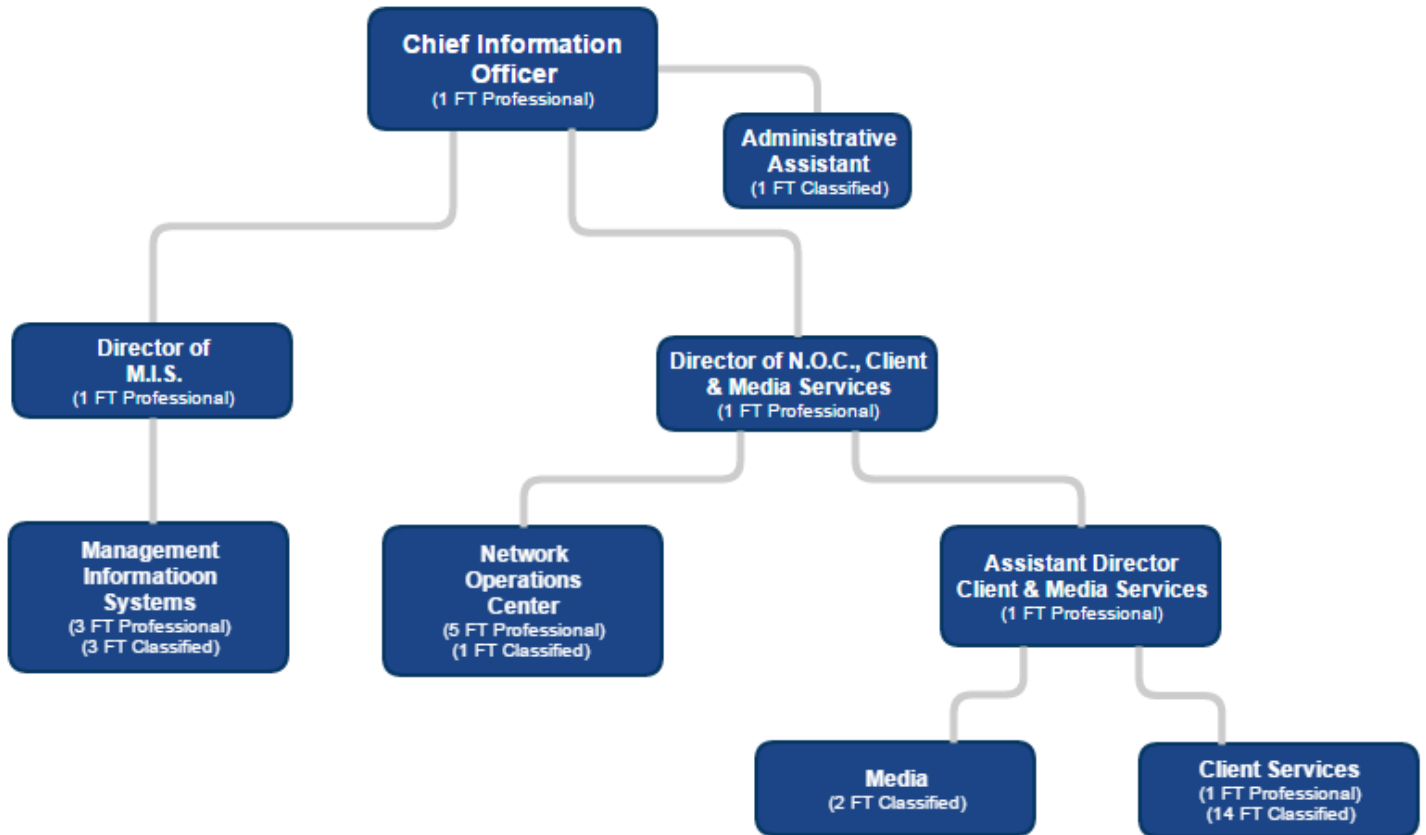
The Service Desk which is part of the Client Services department provides a wealth of information through the analysis of the requests and questions that are received. The Service Desk staff provide this information to multiple groups at the College in order to make better informed decisions about technology priorities and needed changes.

Information Technology Support External to ITS

The mission of the Center for Instructional Technology and Online Learning is to provide instructional design and instructional technology support. CIT is committed to supporting pedagogy and enhancing learning by assisting faculty in the integration of academic technology into the curriculum in order to deliver quality education and challenge students to reach their highest potential.

The Library staff provide assistance with information resources to our students and faculty through direct support in their computer labs. The Library provides specialized training sessions as well as day-to-day help with the use of software in the open lab.

I.T.S. Organizational Chart



Total Staff
13 FT Professional
21 FT Classified

Principles for Developing

1. Create a single shared vision for the exploration, acquisition and implementation of technology that aligns with the College's strategic plan and academic master plan.
2. Ensure the plan meets the goals prescribed in our NEASC self-study.
3. Best practices should be utilized to maximize the College's return on investment (ROI) and support growth in enrollment and retention.

Core Team

A core team was assembled in September 2016 as a subcommittee of the Information Technology Committee to develop this master plan. The team consists of students, faculty, administrators and support staff. The team includes Melba Acevedo, Jeff Bickford, Liliana Brand, Mike Conte, Greg Dalton, Nathan Gilbert, Thomas Greene, Alison Gouveia, Michael Hearn, Lori Heymans, Michelle Jackson, Bernard Kelly, Michael Kolotila, Minh Le, Susan Martin, Ashley Moore, James Murray, Michael Penta, Clayton Ross, and Joan Scianti.

Key Institutional Priorities, Initiatives and Governance

NEASC

The College has the technological resources necessary to support the mission.

The College provides standard, "smart" technology in all appropriate classrooms.

The College provides adequate technology support personnel.

The College provides adequate training for all supported technologies on campus.

Strategic Plan

Integrated Student Experience

Student Career Opportunities

Professional Growth

External Partnerships

IT Committee

The Information Technology Committee shall make recommendations concerning, but not limited to, the following:

1. Communicating major changes in the uses of information technology, as well as a rationale for those changes to the College Community.
2. As appropriate, policies related to the use of Information Technologies by faculty, staff, and students.
3. Procedures to ensure all major technology purchases and moves are properly reviewed by IT and Facilities as appropriate.
4. The redeployment of existing computer equipment.

Accessible Media Team

NECC seeks to embody the fundamental academic principles of equity and accessibility by striving to provide to the broadest possible audience, regardless of impairment or disability, equal access to the college's programs, services, events, and activities. To this aim, we seek to promote an inclusive academic environment by incorporating design concepts that remove or reduce barriers to both current and emerging technologies. This ongoing institutional effort deepens our appreciation for diversity and cultural inclusion. ([Visit the Accessible Media Team on the web](#))

Distance Education Committee

There shall be established at each College a committee comprised of no more than three (3) representatives of management, and three (3) members of the MCCC Units (Day and DCE) at that College. This committee shall meet as necessary to discuss in advance distance education initiatives/opportunities to be offered by the College subsequent to this Agreement. This committee shall have no authority to modify or to add to the terms of this Agreement, but rather, shall serve as a vehicle to share information about campus distance education opportunities, system-wide distance education initiatives, and to provide the MCCC with an opportunity for effective input into those local opportunities and initiatives, including the process for selection of unit members for training opportunities. In no event shall the process for and/or the selection of unit members for training opportunities be arbitrary, capricious or unreasonable. The committee shall be provided at the end of each semester a list of all unit and non-unit employees who have participated in distance education training or course delivery at the College together with the amount of compensation of any form received for each course.

Source: [Full memorandum of agreement online](#)

Banner Users Group (BUG)

The Banner Users Group (BUG) at NECC meets regularly to share functional and technical expertise and develop support groups with fellow Banner users at the college. The BUG seeks solutions to common business issues, participates in positive discussions to enhance Banner use and collaborates on common software testing and enhancements.

CIO Council

The Council meets monthly and is comprised of the CIO from each of the 24 State colleges and universities in Massachusetts. Every opportunity is sought and pursued to take advantage of group purchasing, standardizing systems and sharing best practices.

Technology Principles, Mission, and Vision

Principles

1. Develop a systemic approach to information technology enhancement.
2. Promote technology improvements that focus on the student as a learner.
3. Focus on solutions which are integrated, student-centered, and supportive of the College's diversity goals as well as strategic initiatives.
4. Promote greater understanding and implementation of Universal Design to enhance digital accessibility and ADA compliance for people with disabilities and diverse learning styles, including multi-modal access to information.
5. Propose information technology industry-standard solutions wherever and whenever possible.
6. Contribute to enhancing the College's collaborative culture with every effort to eliminate technical, cultural, hierarchical, and procedural boundaries that divide or isolate people and/or processes.
7. Ensure that administrative systems provide analytical capabilities permitting the institution to conduct long-term analyses at a variety of organizational levels.

Mission

Information Technology Services mission is to support Northern Essex Community College students, faculty, and staff in the use of technologies to enhance and strengthen the teaching and learning experience.

Vision

Information Technology Services will support the College in achieving the goals of the Strategic Plan as well as the Academic Master Plan.

Goals

1. Provide Consistent Communication & Raise Awareness of Available IT Resources

- a. Establish Two-way Texting for Student Outreach
- b. Implement a CRM (Customer Resource Management) System for Students
- c. Strengthen Online Resources in the College's Mobile Application
- d. Streamline Email Broadcasts with Subscription Capabilities
- e. Increase Awareness Through Videos on Website for Common Tasks & Questions
- f. Provide an Online Mechanism for Feedback from All Students, Faculty and Staff

2. Provide a Unified Digital Campus (MyNECC Portal)

- a. Integrate All Services for All Profiles (Students, Faculty & Staff)
- b. Provide Single Sign on Capability
- c. Provide Targeted Messaging to Students, Faculty & Staff
- d. Expand the capabilities available in the MyNECC portal and mobile application

3. Ensure Professional Development Opportunities for Administrative Applications

- a. Initial Training Provided and Required Prior to Accessing Systems
- b. Regular Training Provided for All Administrative Applications
- c. Video trainings out of PD for use by students, faculty & staff

4. Cultivate a Culture of Information Security

- a. Require Annual Written Information Security Program (WISP) be Reviewed Annually in MOAT
- b. Communicate to the Community Through the Monthly CIO Note
- c. Alert the Community in a Timely Fashion as New Threats Emerge
- d. Leverage technology to provide maximum feasible information security for the college

5. Provide Appropriate Technology Resources & Technical Support for All Supported Services

- a. Continually evaluate the most cost-effective means of purchasing equipment
(See analysis in Appendix D)
- b. Maintain a Gap Analysis of IT Hardware Refresh and Reduce Annually
(See analysis in Appendix C)
- c. Develop a Gap Analysis of Technical Support Through a Third-Party Consultancy

Utilize existing Berry Dunn research of state colleges and contract with a consultant to analyze IT staffing levels at NECC and provide the college with a gap analysis.

6. Support Data-Driven Decision Making at All Levels of the College

- a. Provide a Data Analytics Platform for End-User Reporting
- b. Expand Data Reporting Into Predictive Analytics
- c. Provide KPI Dashboards in the College's Portal

APPENDIX A : Administrative Applications Maintenance

These are critical administrative applications that must be funded every year in order for the college to operate.

Company/Product	Cost
Academic Works	\$ 7,718.00
Airwave Aruba Wireless	\$ 11,000.00
AllroundAuto PL/SQL/DEV	\$ 1,450.00
AVAYA Phone System	\$ 26,000.00
Awareity MOAT	\$ 16,800.00
Barracuda Load Balancer	\$ 1,600.00
Blackbaud RE NXT	\$ 21,002.00
Blackboard – Learn	\$ 8,000.00
BlackBoard Inc.	\$ 171,224.00
Call Center	\$ 4,000.00
CollegeNET	\$ 31,090.00
CommVAULT Backups	\$ 10,000.00
Dell - Red Hat	\$ 14,665.00
Dell Oracle	\$ 54,666.00
Dual Enroll	\$ 3,500.00
Ellucain College Board FM Need Analysis	\$ 1,190.00
Ellucian – ILP	\$ 6,656.00
Ellucian - Main. Banner Finance SS	\$ 3,040.00
Ellucian - Maint. Banner Flex Reg	\$ 10,405.00
Ellucian - Maint. DegreeWorks	\$ 9,346.00
Ellucian - Maint. Luminis Basic	\$ 18,120.00
Ellucian - Oracle Component	\$ 34,810.00
Ellucian Annual Arears	\$ 99,933.00
eVisions	\$ 25,848.00
Experian – QAS	\$ 5,598.00
Extreme Networks	\$ 16,000.00
Faronics DeepFreeze	\$ 4,000.00
Fortinet Firewall	\$ 15,000.00
Genetec Security Cameras	\$ 11,000.00
GT Software NetCOBOL	\$ 1,386.00
Harland Scantron	\$ 100.00
Harland Scantron	\$ 785.00
Hobson's Starfish	\$ 10,380.00
KACE Service Desk / Sys Mngmt	\$ 10,000.00
Kaltura / CaptureSpace	\$ 21,833.00
Microsoft Campus Agreement	\$ 3,800.00

Modo Labs, Inc.	\$ 12,500.00
Netwrix Password Manager	\$ 4,700.00
PACE - Securing the Human	\$ 190.00
QualysGuard	\$ 1,020.00
RedRock Tutor Trac	\$ 799.00
Regroup	\$ 4,200.00
Runner Tech	\$ 5,800.00
SHI - TOAD	\$ 1,300.00
Smart Catalog	\$ 13,850.00
Sophos Anti-Virus	\$ 9,100.00
Symplicity Advocate	\$ 9,113.00
Team Dynamix	\$ 7,200.00
TK20 Assessments	\$ 22,500.00
Touchnet	\$ 51,879.00
TRENO	\$ 6,000.00
Vanderbilt Security Proximity Access	\$ 3,700.00
VMWare vSphere	\$ 18,000.00
Zipbridge	\$ 500.00
Zogotech	\$ 81,133.00
Total	\$ 945,429.00

APPENDIX B : Smart Classroom Model

Standard Smart Classroom Equipment at Northern Essex Community College:

1. Computer with DVD
2. Mounted Projector
3. Sound System
4. Document Camera
5. DVD/Blue-ray Player
6. Standardized Smart Controls



APPENDIX C : IT Academic Hardware Inventory Refresh Gap Analysis

Item	Unit Cost	Quantity	Life Cycle	Investment	Annual Cost
Classroom/Lab - Computers	\$1,200	1600	6 years	\$1.92M	\$320k
Laptops	1,450	150	6 years	217,500	36,250
Projectors	790	150	6 years	118,500	19,750
A/V Controller	1,000	150	10 years	150,000	25,000
Doc. Camera	600	150	10 years	90,000	9,000
TOTAL				2,496,000	410,000

This analysis does not include major, administrative systems that reach end-of-life at varying points and are typically capitalized due to their cost. These include and are not limited to video conference rooms, environmental units, power backups and generators, and the numerous components in the college's data closets.

This analysis does not include administrative computers which are handled whenever possible with redeployed computers. When redeploys are not adequate each Vice President plans and budgets for these upgrade through the annual budget process.

Gap Analysis

Total Equipment Refresh Annual Goal	\$410k
Annual Refresh Budget (FY17)	\$194k
GAP	\$216k

Target Improvement (10% increase per year):

FY18	\$21,600
FY19	\$43,200
FY20	\$64,800

APPENDIX D : Best Financing Options for Purchasing IT Hardware at the College

Leasing Equipment

NECC does not purchase all equipment refresh at one time. We purchase a small percentage on an annual basis. Because of this leasing would cost more due to financing costs and would lock the college into regular payments even in years we don't add/replace equipment.

Additional Resource: [Should You Leaser or Buy article from Entrepreneur.com](#)

VDI (Virtual Desktop Infrastructure)

It was thought that replacing \$1,200 computers with \$500 thin clients would save the college substantial money. Presidio has installed VDI environments in our sister colleges and came in to provide an estimate for NECC. The infrastructure to support 100 VDI clients would cost \$550,000 on top of the \$500 per physical thin client. This translates to \$600,000 total or \$6,000 per thin client. Comparing \$6,000 to \$1,200 per computer station it is apparent VDI is not a cost saving measure and is only preferred for functional benefits.

Each additional 100 VDI client added would cost nearly the same \$550,000 in infrastructure to support thus negating any real economy of scale and keeping the average thin client cost at \$6,000 each.

Purchasing Equipment

This is how NECC currently purchases and with our educational discounts and no financing charges proves to be the most cost effective method.