Information Technology Review

IT Strategic Plan 2017 to 2020

March 2017

Prepared for: Mission Public School District #75
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Scan Date: 2017-02-24

Project Objective

1.   To perform a review of the SD75 Board's Network and Educational Information Technology Infrastructure as it pertains to:
       a.   computer hardware
       b.   system hardware
       c.   system applications
       d.   security protection
       e.   business services
       f.   software applications

2.   Identify gaps and opportunities for the use of technology in a sustainable and long term manner to better support:
       a.   the delivery of educational programs
       b.   business processes

3.   Identify improvements that should be made to optimize the use of technology to support educational and business processes, so that Mission Public School District becomes a leader in the use of technology that supports K-12 education in a fiscally responsible.

4.   Be at the forefront of educational innovation.

Project Deliverables

Documents delivered by this project will include:

   1. IT Configuration and Inventory Report
   2. 3 to 5 year IT Strategic Plan
   3. IT Gap Analysis
   4. Tactical Implementation Plan

This document is the IT Strategic Plan 2017 to 2020.

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Background

The viability of the IT Strategic Plan for 2017 to 2020 rests on using industry-standard methodologies and structures in the evaluation, planning, and implementation stages. This process ensures that all aspects of future IT Services are examined, balanced and prioritized to fit the organization. Researched based IT management models have been used to prepare this plan to ensure a solid administrative base for this changing world.

As recorded in the IT Review Configuration and Inventory Report dated 31 January 2017, most of the technology base and the software programs currently delivered by the School District internal infrastructure are several years old and at high risk of failure. Management, staff and teachers believe the delivery of services and functionality to be slow and unreliable.

Over the last 5 years, SD75 departments have taken advantage of new 'cloud applications' to upgrade functions such as HR/ Payroll and Accounting. Taking advantage of the recent BC Ministry of Education NGN upgrade, Mission Public Schools District has been able to deliver most of the basic administrative functions in this fashion by relegating the internal computers, systems and network to a gateway function to the Internet. The BC Government delivers the MyEdBC student information system to school districts in the same way.

In large part, capital investment has been avoided and operating costs have risen slowly from the subscriptions to those application services. This approach is not necessarily incorrect; indeed 'Cloud' applications represent very good value and also avoid the expense of a large internal staff creating and running programs as well as infrastructure.

The new IT Strategic Plan will be implemented in stages over the four year period to manage the project activities and investment required. This stepped-approach was chosen because the replacement of the central infrastructure, upgrades to software programs, and the replacement of computers in all schools is disruptive if attempted too quickly and is more expensive than can be supported in a single year. Further, the project requires extensive training and support through Professional Learning opportunities for all educational stakeholders of the Mission Public School District to facilitate the effective use of new technology and the functional changes that come with it.

Executive Summary

The primary objective, over the next 4 years, is to continue to expand the role that 'subscribed-cloud- based' application services play in the deliver up-to-date IT services. An emphasis will be on improving services that directly improve student learning. The District understands that not all services can be migrated to the Cloud.

In order to take advantage of new applications that will achieve the vision and goals of the organization, the current infrastructure on the school and administrative sites must first be replaced with modern systems and network technologies.

Goals for onsite improvements in schools include upgraded and universal WIFI networks serving a new population of modern workstations for use by staff and students. This creates a responsive, collaborative, multimedia environment for staff, teachers and students. This new infrastructure will deliver access to modern global education resources that support the new K-12 curriculum.

IT Strategy

The delivery of educational and administrative services rely heavily on Information Technology in the 21st Century. The IT solutions that will be recommended as a result of this process are always changing rapidly.

A Strategic Plan is a process that:

- Assesses the needs and resources of the organization
- Defines the environment to be addressed
- Creates a prioritized list of goals and objectives
- Designs coordinated strategies to achieve those goals
- Measures and evaluates the outcome of the activities taken to achieve the goals

The IT Strategic Plan contains the following eight elements.

1) Vision

The Mission Public School District vision for IT Services can be stated as:

1) Technology is a positive component in creating a successful learning environment.
2) We actively promote and support the use of technology in the district at all levels.
3) We will provide in-service to employees in the effective use of the technological tools and software.
4) We will create an environment that is device friendly and allows for universal access.

2) SWOT Analysis

The environmental scan for February 2017 for the IT Services is shown below.

Strengths	*Weaknesses*
2006 Design is Good	Obsolete Equipment
4 Member Technical Team	Old entries in AD
NGN Network Base	Lack of IT Training
Student Growth	No IT management
New Senior Staff	No central IT budget
	Little Policy
Opportunities	*Threats*
New Policy and Procedure	Operational failures
New Financial Planning	Lack of Belief
New Admin Support	Network Bottlenecks
New Curriculum	Electrical power
New Technology Apps	

3) IT Mission Statement

In a fiscally responsible manner, use technology to provide more effective support for student learning and more efficient business services.

There are four primary initiatives that ensure the Vision and Mission are achieved:

1. Modernizing classroom and school site technology that enrich the learning environment. A universal network of workstations delivering highly interactive collaborative programs connected to reliable, high speed services and applications, including the Internet will be established.
2. Standardizing the delivery of IT equipment and services across all sites reducing the complexity and cost of IT. The platform will deliver the full range of educational and administrative functions regardless of location.
3. WIFI will become the primary network connection for workstations in all district sites. All sites will have increased WIFI speed, coverage, and reliability.
4. The organization will facilitate improved IT management and services including the hiring of additional IT staff, training and in-service, resource acquisition and replacement, as well as security and the appropriate use of IT.

4) Priorities

The following priorities have been identified in creating the strategies and action plans.

1. Modernize and improve the internal IT infrastructure.
2. All staff are offered the opportunity to access IT In-Service on a continual basis.
3. Improve the responsiveness of all operations that deliver IT Services. This will include the automation of information updates and records management for staff and students, improved response times for physical infrastructure and staff services, and the introduction of a new Service Desk toolset and management system.
4. Development of policy and operational management of IT to ensure the long-term fiscally-responsible viability of district technology.
5. Standardize technology throughout the district.

5) Strategies

1) The new IT Service design will build on the strengths of the current design. Windows Servers and the Active Directory will control the access to, maintenance and security of the data and applications in the SD75 network.

2) Automated integration of the Active Directory with the applications that are the sources of staff and student identities will greatly reduce the manual effort to populate and direct the IT Services.

3) Use new technologies such as hyper-converged server and storage appliances to reduce operational and financial overhead and free staff resources to support the primary goal of improving student learning.

4) Use the power of the new NGN data network connections to reduce the complexity of IT at school sites and remove staff-movement IT usage issues.

5) The cost, size and timeframe to upgrade the IT Services are reduced and made manageable by centralizing, automating and standardizing application services, school IT environment and the devices used to access the IT services at all sites across the School district.

6) Use new WIFI technologies to replace the cabled data networks and deliver comprehensive IT Service capability at all sites.

7) Introduce a technology refresh cycle to ensure all components of the IT Service delivery platform are kept up to a coordinated level of compatible service function.

8) Design and implement a new IT in-service model within the School District. This will be available for Staff, teachers, students and IT Staff according to their requirements.

6) Rationale for the Strategies Chosen

1) The basic foundation for delivery of the modernized learning environment is the integrity and integration of the central Active Directory. The new central IT Service Windows platform will be upgraded and entries that prevent efficient Active Directory integration will be removed with all the applications including but not limited to MyEdBC, SRB AtrieveERP and security and file management functions.

2) All departments with an identity role must work to automate administrative processes into the integrated directory. Additional professional services and software contracts may be needed to complete this.

3) A new learning environment that enables personalization, flexibility, collaboration and communication through appropriate software must be identified, procured and implemented to deliver function to the new school site technology.

4) Improved wireless classroom networks need to be deployed along with modern computers for students, staff and teachers. The goal is to deliver a learning environment that is 'Always On – Always Available – Always Responsive'.

5) A new IT in-service model will improve the effective use of new Technologies. Success will not be achieved if no-one uses the new IT.

7. Goals and Objectives

The following goals have been set for achievement by 2020.

1) The Technology Refresh Cycle[1] for the IT infrastructure and peripheral devices is:

Assets	Refresh Cycle
Workstations	4 years
Servers	5 years
Wireless	6 years
Switches	10 years
Software	Updated within 1 year maintenance cycles

This cycle will be reviewed annually to ensure the refresh continues to support the goals of the IT Strategic Plan.

[1]Multifunctional Devices and some printers are not part of this refresh cycle as Multifunction printing is under contract to Ricoh Canada.

2) All school classrooms have standard workstations for students and teachers, supported by modern Wi-Fi technology that is designed for the School District's learning and administrative environment.

3) The IT in-service model delivers basic knowledge to all teachers and staff.

4) IT department provides managed services and support at all sites.

5) Financial resource plans that achieve the long term IT capability to support the improvement of student learning are created by the School District.

6) The goals of the Strategic Plan for IT will be reviewed and adjusted annually.

8) Evaluation Criteria

All successful IT Strategic Plans contain an evaluation process that reviews the effectiveness of both the planning process itself and the activities undertaken therein to achieve the Mission, Vision as well as Goals and Objectives of the plan in the time frame chosen.

The following guiding questions will be asked:

1) Are there observable differences in Student Learning?[2]

2) Has the reliability and uniformity of IT service improved?

3) Are IT services being optimized for automated integration?

4) Are there more modern workstations in classrooms for teachers and for student use as set out by the targets and refresh cycles?

5) Is there an improved response time for IT installations that require integration of service departments?

6) Do the SD75 staff and teachers know how to use IT resources?

7) Is their targeted ongoing IT in-service to improve participation of staff in learning IT and services?

8) Are there policies and procedures in place to govern IT services, purchases, security and usage?

9) Are the policies and procedures being regularly reviewed for effectiveness?

10) Is the IT service being reviewed regularly to ensure that it continues to meet the needs of the changing education system?

11) Are the budgetary needs the District IT being met?

12) Is there a consistent District IT budget to meet the refresh criteria?

[2]Criteria will be developed

Phase 3 IT Review - Immediate Action Plan (Gap Analysis)

The immediate actions will define the items and methodology to upgrade IT Services.
This is the Phase 3 Gap Analysis of the IT Review process being conducted by Opus Consulting.

Detailed design and procurement choices are scheduled in the Opus Consulting IT Review project in Phase 4, producing the Tactical Implementation Plan.

The main elements in the immediate actions plans are infrastructure items, administrative changes, software standardization, and the integration of choice for school environments.

1. IT Infrastructure
   a) Upgrade Data Centre servers and power
      i) Identify options and procurement vehicle
      ii) Prepare functional specifications
      iii) Shortlist candidate programs and vendors
   b) Central Windows Server Platform installed at Ferndale IT Facilities site
   c) Data Protection (Backups) installed - professional services
   d) Active Directory Cleanup achieved – professional services
   e) Centralize, expand and modernize File services for all staff and teachers
      i) professional services to integrate
   f) Disaster Recovery Site installed at School Board Office
      i) professional services
   g) eMail and Office platform
      i) Send eMail to Cloud - Office365
      ii) Upgrade MS Office to 2016 version
2) Active Directory Integration with AtrieveERP, MyEdBC, School Environment software
3) WIFI Network Upgrade pilot sites chosen
4) Policy and Procedures introduced as a management framework
5) Legislation and regulation compliance achieved by adding security rules
6) Workstation standards - Admin , School, Classroom configurations active for delivery to pilot sites
   a) Identify options and procurement vehicle
   b) Prepare functional specification
   c) Shortlist candidate product and vendors
7) Planning completed for telephone system upgrade to Unified Communication system
   a) Identify options and procurement vehicle
   b) Prepare functional specification
   c) Shortlist candidate product and vendors

IT Review Project Phase 3 gap analysis functions that will be led by Opus Consulting include:
Software Standardization and Integration

1) List applications that work – e.g. AtrieveERP, Exchange, MS Office
2) List Applications that will be replaced e.g. Alexandria LMS, Adobe Contribute
3) For Applications that stay:
    a) List features that need be added, can be added or improved
    b) AD Integration and automation identified
    c) Policy and Procedures that will help standardize processes, systems, services and use
    d) Identify costs to upgrade
4) For Applications that will go:
    i) Identify replacement options and procurement vehicle
    ii) Prepare functional specification
    iii) Shortlist candidate programs and vendors
5) Plan a new IT Training methodology and structure
6) Plan a new IT support structure for schools and teachers
7) Draft a new Service Catalogue for goal clarity

To provide an understanding of the context of the IT Strategy Plan and the Phase 3 Gap Analysis, the items and steps that will follow on from the Phase 3 work are

Phase 4 IT Review – Tactical Implementation Planning

Planning functions that will be led by Opus Consulting include:

1) Design a new IT architecture to deliver IT Services to all sites
2) Design the new Active Directory structure
3) Build Project Plan to upgrade infrastructure
4) Build Project Plan to upgrade current applications
5) Build Project Plan to pilot the new school environment solutions
6) Build Project Plan to design the new IT Training service methodology and service