



2017-2018

Annual Report



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Letter From the Minister

Her Honour the Honourable Janice C. Filmon, C.M., O.M.
Lieutenant Governor of Manitoba
Room 235, Legislative Building
Winnipeg, MB R3C 0V8

Your Honour:

It is my privilege to present the Annual Report of the Manitoba Education, Research and Learning Information Networks (MERLIN) for the operational year ended March 31, 2018.

Respectfully submitted,

Original Signed by
Honourable Scott Fielding

Letter From the Deputy Minister

The Honourable Scott Fielding
Minister of Finance
Room 103, Legislative Building
Winnipeg, Manitoba R3C 0V8

Dear Minister Fielding:

I am pleased to submit for your consideration the Annual Report of the Manitoba Education, Research and Learning Information Networks (MERLIN) for the year ended March 31, 2018.

For over 20 years, MERLIN's knowledge and application of technology has benefited school divisions and post-secondary institutions in Manitoba. Education clients report that they are very satisfied, appreciate the Agency's responsiveness and acknowledge the importance of MERLIN's services in supporting IT needs in the classroom. The Agency continues to work collaboratively with schools, colleges, universities and key stakeholders to support technology in learning.

The education community continues to realize savings on purchasing software licensing, consulting, Internet, technical training and a variety of hosting and security services. Schools and post-secondary institutions also benefit through licensing compliance, best practices, consistency of application and long term technical and financial planning.

I would like to thank MERLIN's Advisory Board for their continued support and commitment and staff for their dedication and effort that keeps contributing to MERLIN's success.

Respectfully submitted,

Original Signed by
Jim Hrichishen,

Message From the Chief Operating Officer

On behalf of staff, I am pleased to report the achievements of Manitoba Education, Research and Learning Information Networks (MERLIN) for the year ended March 31, 2018.

Technology has always been an important tool to advance education, and in our rapidly changing world, it is now an essential part of a modern classroom. Never before has information been so accessible to anyone, anywhere. Classrooms are no longer restricted to just physical buildings, but extend to every part of our world and are creating a new virtual world for students to explore. MERLIN plays a key role in growing, simplifying technology choices and getting the best value for money for educational organizations with limited budgets.

MERLIN staff continue to work collaboratively with the education community to deliver a broad range of technology services which support their IT needs today and into the future. As an example, the K-12 Partner Program which is now in its twelfth year of operation with 100% participation from school divisions, continues to bring major benefits to them. The Agency will extend this agreement for a fourth year in a row at the same rate.

Every new year comes with its challenges and this year was no exception. We have seen significant growth in the use of cloud based resources and Internet bandwidth. As a result, MERLIN has upgraded its Internet feed from 10 Gb/s to 20 Gb/s. We also upgraded our connection to MRnet to CANARIE from 10 Gb/s to 20 Gb/s. MERLIN is one of the largest users of CANARIE's Content Delivery Service in Canada!

Finally, I want to thank our professional and dedicated staff as well as our Advisory Board for keeping MERLIN focused on important objectives and meeting the needs of the education community.

Original Signed by

Kiley Bender
A/Chief Operating Officer

AGENCY PROFILE

Background

Manitoba Education, Research and Learning Information Networks (MERLIN) was established in 1995 as a special operating agency with the Department of Education and Training. It was formed as a facilitating body to coordinate the delivery of distance education and technology services to the education community across Manitoba.

Mission

- To support the use of technology in improving educational services to learners.

Mandate

- Provide services that support educational institutions in the application of technology tools to enhance and expand program delivery; and
- Provide direction and management in the educational use of networks, acting as a broker of services to meet client needs.

Services

The services provided are allocated into the following sections:

Services	Schools	Dept. of Education, and Training	Post-Secondary Institutions	Other Depts./ Agencies
Partner Programs	X		X	
Consulting	X	X	X	
Provincial Licensing and Purchasing	X	X (MSD)*	X	
Shared Services - all hosting and ISP costs for the provision of services outside the Partner Programs. ex: <ul style="list-style-type: none"> • Content filtering • Hosting of websites and web based applications • Email anti-spam / anti-virus solutions • Email list server • Hosting virtual servers and storage • Hosting managed firewall 	X	X	X	X
Technical Training Services	X		X	
General Support for the education community	X	X (MSD)	X	

* Manitoba School for the Deaf



Partner Programs:

The Partner Programs includes a collection of commonly used services such as software licensing, Internet bandwidth, monitoring and reporting of Internet traffic, access to high-speed direct connect services, spyware filtering for web traffic, web content filtering, anti-spam/anti-virus scanning, hosting and consulting. This program translates into major cost savings and other benefits for schools in Manitoba. A customized Partner Program is also available to post-secondary institutions.

Provincial Licensing and Purchasing:

Licensing and purchasing on a province-wide basis helps ensure consistency in hardware and software products and provides economies of scale for school divisions and post-secondary institutions.

- Purchase advice and assistance for hardware including routers, switches and firewalls
- Negotiation of software licensing agreements and hardware discounts
- Advice on licensing and purchasing of software

Consulting:

This service includes per diem consulting, project consulting and support contracts.

- Design and implementation of LAN and WAN, directory services and server infrastructures
- Advice on the selection of technical equipment and services

- Support for the installation and maintenance of workstations
- Advice on technologies that support distance education delivery
- Network systems management
- Security services (VPN, WAN, etc.)
- Review of school divisions' existing technology plans

Internet Access:

Schools connecting to MERLIN have access to very high-speed commercial Internet and a direct path to MRnet and CANARIE, connecting to global Research and Education networks, content delivery providers and the Manitoba Internet Exchange. Full IPv6 support is available.

Hosting:

MERLIN collaborates with groups of educational organizations to offer hosting of shared applications or other services. MERLIN offers an array of IT hosting services saving school divisions and post-secondary institutions costs in server hardware, software, upgrades and staff resources.

- Web and Internet domain name hosting
- Exchange email for school staff
- SharePoint for school staff
- Hosted Skype for Business for school staff
- Managed firewall
- Infrastructure as a Service

- Various applications including SRB and PowerSchool
- Data Back-up - remotely backs up server data to MERLIN's data centre
- Web server and maintenance of the Department of Education and Training's web page
- Hosted MEL (English) and DREF (French) from the Manitoba Education Library systems
- Email list server

Security:

Analyze risks and deploy countermeasures to reduce exposure to network based threats.

- Anti-virus/anti-spam email filtering service
- Web content filtering
- Intrusion Prevention System (IPS)
- Distributed Denial of Service (DDoS) Mitigation
- Network Security Reviews

Technical Training Services:

Customized training for school divisions helps sustain operations and enhance technology infrastructures. Training services are intended to provide education-specific training in areas where it might not normally be available.

- Support for applications of distance education
- Delivery of workshops and seminars

General Support to the Education Community:

This includes activities such as general help desk support and participation in various educational organizations including Manitoba Association of Educational Technology Leaders (MAETL), Manitoba Association for Distributed Learning and Training (MADLaT), Manitoba Regional Advanced Network (MRnet), Build Your Teaching Experience (BYTE) Technology Conference, Riding the Wave (RTW) Annual Technology Conference, etc.

Markets

PRIMARY	SECONDARY
Schools and school divisions (K-12) comprised of 37 school divisions, over 700 public schools, 94 independent schools and over 50 band-operated schools within about 62 First Nations and post-secondary institutions.	Adult learning centres, educational organizations, Department of Education and Training

While MERLIN does not have a monopoly for its services within the province, it does have a unique position in the education community, allowing for the provision of an education-specific component to decision-making, provincial coordination, and advisory services. The Agency attempts to foster cooperative relationships with private industry to benefit the education community.

“Seven Oaks School Division values all that MERLIN provides. With the expertise they provide to the affordable software licensing agreements they have put in place, to hosting some of our servers, we have a strong partnership now and well into the future. Their staff is always available to us and they do provide alternative solutions for many of our projects we undertake.”

– Ray Sharp, System Admin, Seven Oaks School Division

PERFORMANCE REVIEW

Performance Targets and Accomplishments

Performance Areas:

- Focus on the K-12 system and post-secondary institutions
- Focus on provincial services
- Improve access to MERLIN's services for rural and northern school divisions
- Proactive planning

MERLIN made a significant impact in many areas during the Fiscal Year 2017/18. Some examples are highlighted below.

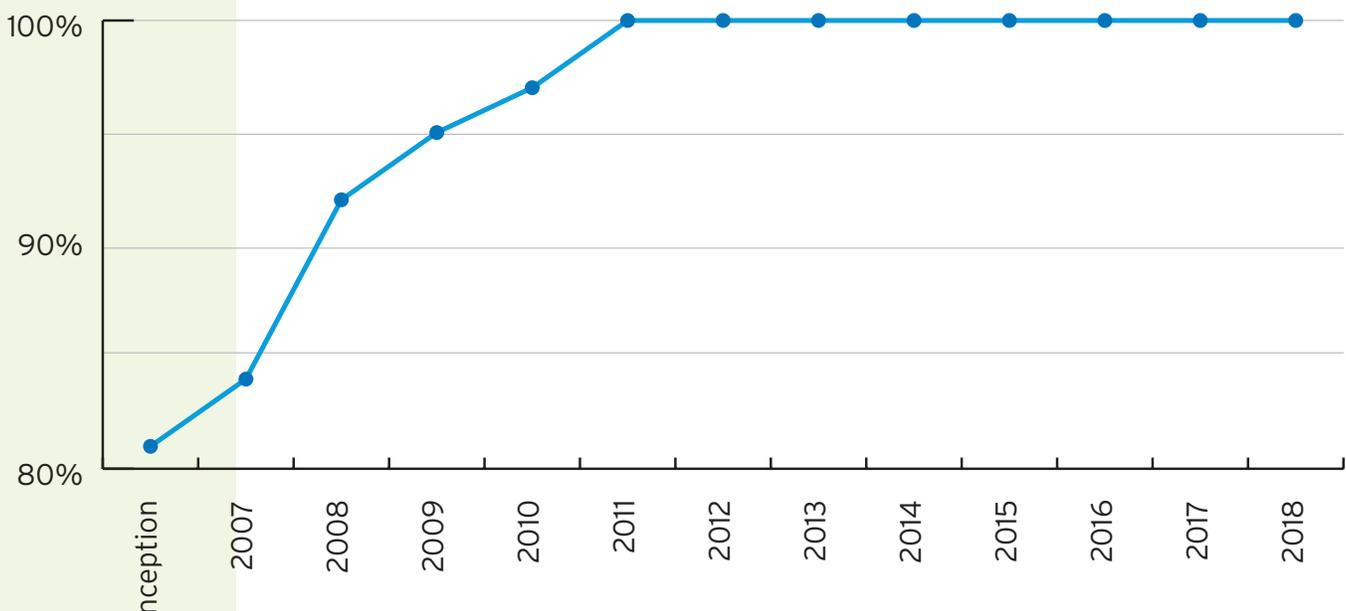
MERLIN Partner Programs

The Partner Programs includes a collection of commonly used technology services bringing major cost savings and benefits to all schools and post-secondary institutions in Manitoba.

MERLIN's K-12 Partner Program is currently in its last year of its three-year agreement. MERLIN will extend the existing K-12 Partner Program Agreement for an additional year at the same rate. This will be the fourth year in a row without an increase in fees.

For the past 12 years, there has only been a 1% increase in fees for the K-12 Partner Program. Network usage continues to increase at 50% a year and has for the last 12 years. All of Manitoba's school divisions and 70% of funded independent schools participate in the Partner Program. The Agency also has negotiated a customized Partner Program for post-secondary institutions.

% of School Divisions Participating in the Partner Program



Provincial Licensing and Purchasing

Microsoft:

- The Microsoft Enrollment for Education (EES) Agreement for post-secondary institutions is currently in its second year of the three-year agreement.
- The Microsoft Enrollment for Education Services (EES) Agreement for Manitoba K-12 education and First Nations schools is currently in its last year of the three-year agreement. MERLIN and Microsoft will extend this existing agreement for an additional year at the same rate. This will be the fourth year in a row without an increase in fees.

Adobe:

- MERLIN continues to work with Adobe on educational pricing on Adobe products for K-12 schools and post-secondary institutions.

Trimble SketchUp Pro:

- MERLIN continues to be a facilitator of the Trimble SketchUp Pro K-12 State-Wide License Grant Program providing all public K-12 schools with access to the latest versions at no cost.



“MERLIN is a critical component to Brandon University’s innovation, efficiency and transformation strategy of our IT services. For many years, we have partnered on many of MERLIN’s excellent IT service offerings. These have always allowed us to transform in ways that would not be possible without MERLIN. This year, in particular, as our IT Department was struggling to maintain our core infrastructure, MERLIN was able to offer new services that drastically reduced the overall cost of maintaining our server infrastructure while greatly improving the performance and reliability. MERLIN continues to be a valuable resource to the education community in Manitoba for teaching, learning, research and innovation.”

– Al Dunthorne, Director IT Services, Brandon University

Consulting

MERLIN provides consulting support for two provincial departments

Department of Finance - MERLIN facilitates Manitoba Network services for education.

Department of Education and Training - MERLIN has a Memorandum of Understanding with the Department of Education and Training which provides a number of consulting and IT-related services.

The Agency has also worked with all post-secondary institutions

Design and implementation of:

- Design and implementation of network security services
- Pilot projects with Infrastructure as a Service
- Directory services
- Email services
- Network segmentation solutions which include security and virtual private networks (VPN), network management, disaster recovery/backup solutions, desktop deployments, application deployments, virtual infrastructure deployments, network connectivity failover strategies and strategic planning

MERLIN provides fee-for-service consulting for the education community

Some examples:

- Installed and managed firewalls
- Rebuilt entire school network including servers, switches, firewalls, desktop deployment, and wireless access
- Comprehensive review of entire division technology infrastructure
- Office 365 tenant setup services
- Migration of mail from on premises Exchange to Office 365
- Federated Authentication with Google's G-Suite, Office 365 and Discovery Education
- Worked to complete a technology review resulting in a technology plan including recommendations for software updates, desktops and servers, and wireless
- Reviewed network segmentation, design and implementation of directory services for single user directory
- Provided consulting on network security
- Provide Incident response to IT security emergency
- Wide Area Network performance testing and problem resolution
- Design and setup Network monitoring solution
- MERLIN is frequently called upon to assist school divisions with problem-solving and provides an objective evaluation as well as recommendations. The Agency's goal is to assist school divisions to become self-sufficient in managing their own infrastructures.

Internet Access

MERLIN continues to offer Internet gateway services to schools via fibre, wireless and high-speed circuits. Interconnects include the following:

- MTS - 2 x 20 Gb Internet, 1 Gbps
- MRnet - 2 x 20 Gb
- Shaw - 1 x 10 Gb and 4 x 1 Gb
- MB Hydro - 10 Gb (through MRnet)
- Netset - 10 Gb (through MRnet)
- Manitoba Network - 10 Gb
- Westman Communication - 10 Gb (through MRnet)
- Pembina Trails - 10 Gb
- VISP - 10 Gb (through MRnet)

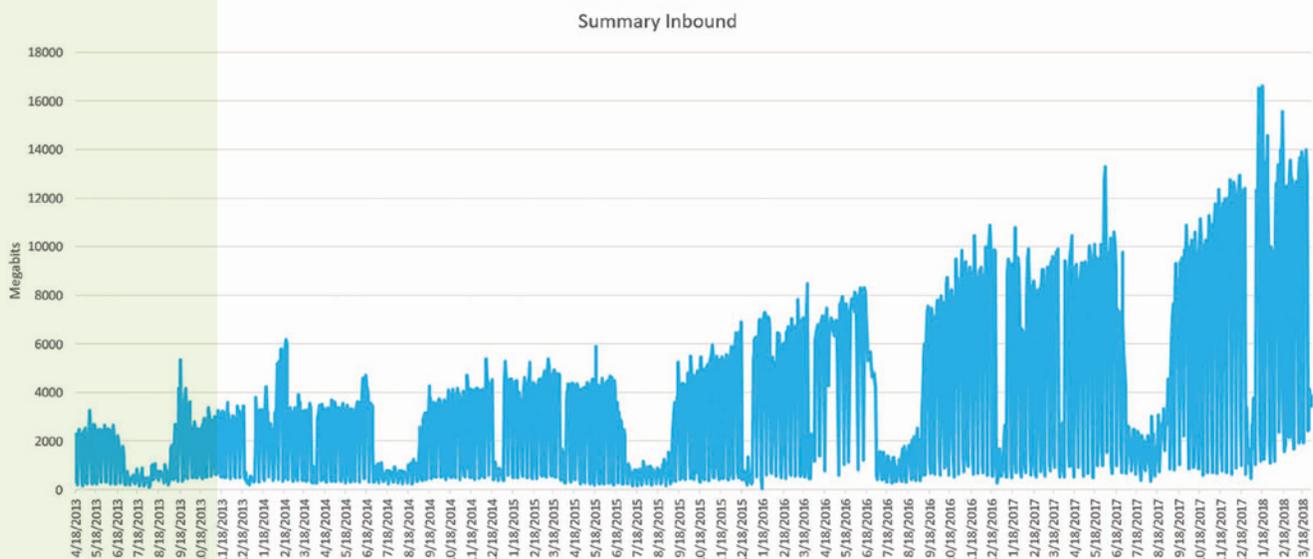
MRnet is Manitoba's connection to the global high-speed education and research network through the CANARIE Network. In Manitoba, MERLIN is the gateway organization for K-12 school connectivity to the CANARIE Network. This includes approximately 700 schools. MERLIN continues to work with other

service providers to facilitate additional connections through Brandon University. It is the responsibility of the education institution to connect to MERLIN in order to take advantage of Internet gateway services. MERLIN allows any education institution or service provider to connect an education institution to MERLIN at no charge.

All Internet usage includes Spyware/Malware filtering; Intrusion Prevention; bandwidth monitoring, and gateway access to MRnet and CANARIE.

MERLIN is seeing about three or four Distributed Denial of Service (DDoS) attacks per month. MERLIN is leveraging a new DDoS Mitigation Service from our Internet Service Provider which continues to be very effective.

MERLIN's commercial Internet capacity is currently 2 x 20 Gb links. The second link is used for automatic failover. MERLIN also offers native IPv6 connectivity (the next generation Internet Protocol) as part of its Internet gateway services. MERLIN can allocate IPv6 address blocks to school divisions upon request.



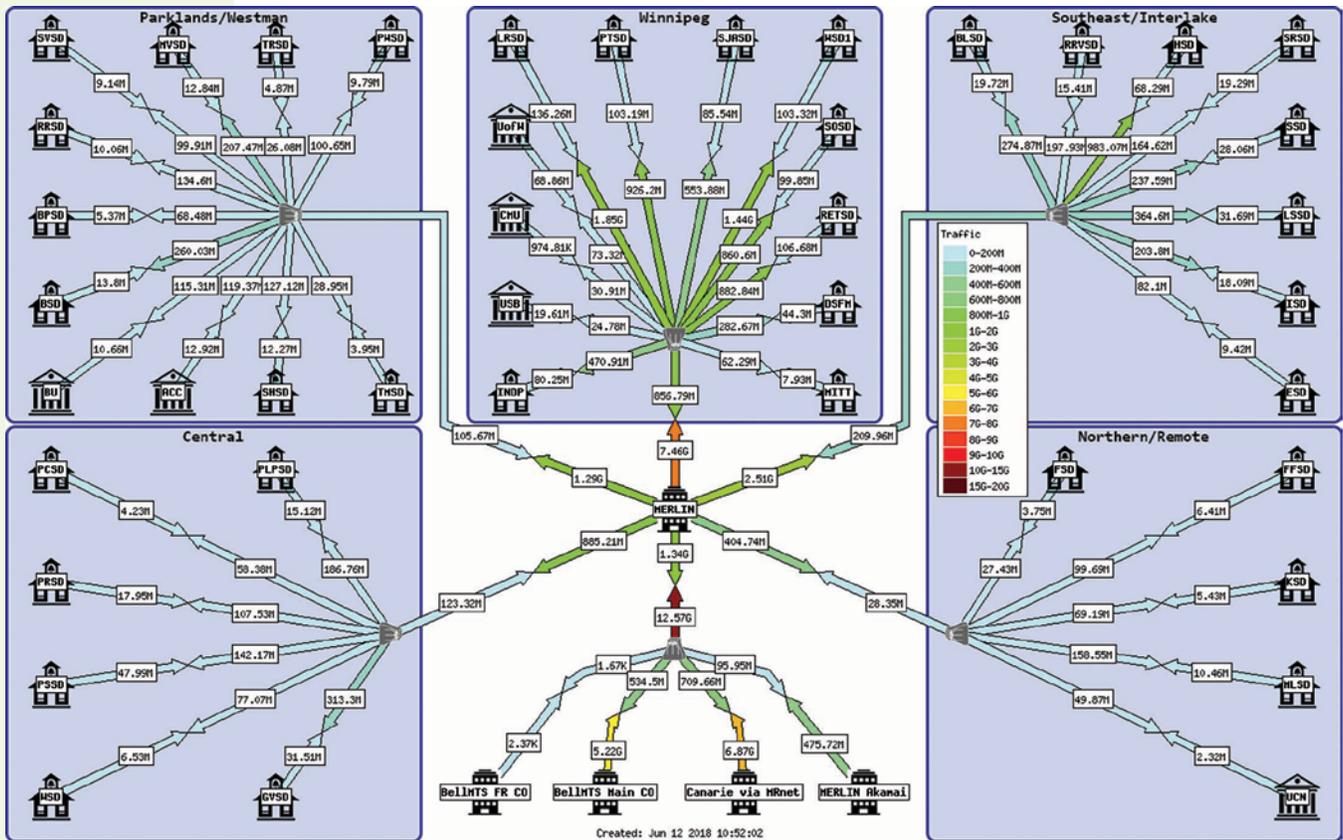
“As a small school division, we do not have the technical expertise nor budgets to hire in-house technology experts. MERLIN has been instrumental in us being on the cutting edge of educational technology. They provide us with guidance on a wide range of educational technology issues.”

– Constance McLeese, PhD, Superintendent, Flin Flon School Division

Internet Weather Map

In the past year, MERLIN staff created this new feature called the Internet Weather Map. This new tool is a point in time view of school division, post-

secondary and Independent school Internet usage across the Province of Manitoba. Usage statistics are updated every five minutes. This can be viewed at <https://observium.merlin.mb.ca/weathermap>



“MERLIN continues to provide exceptional needs based technology supports and services that allows the education sector in this province to overcome barriers and to meet the rapidly changing needs of Manitoba’s learners. This highly effective client centered model provides unrivaled cost for value for educational institutions and Manitoba ratepayers.”

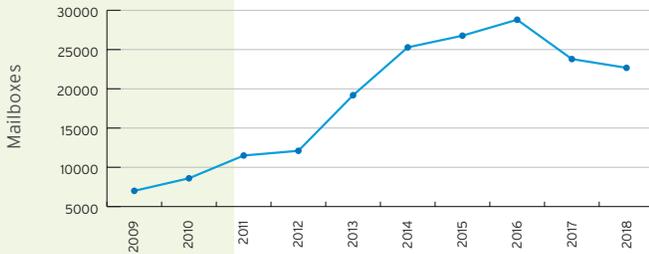
– Stephen Ross, Superintendent, Western School Division

Hosting

1) For School Division Staff:

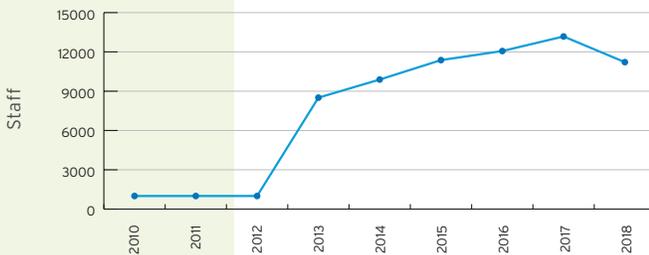
- **Email** - 22,829 email accounts (down from 23,791 last fiscal year) for school staff have been created. This includes more than 50 email domains for educational organizations in Manitoba.

Hosted Email for School Staff



- **Hosted Skype for Business for school staff** provides a single interface that unites voice communications, Instant Messaging and audio, video, and Web conferencing. 11,217 (down from 13,178 last fiscal year) school staff are currently using this communication tool.

Hosted Skype for Business for School Staff



- **Microsoft SharePoint** allows staff to set up websites to share information with others, manage documents from start to finish and publish reports. Ten school divisions (up from seven last fiscal year), one post-secondary institution and one independent school are using hosted Microsoft SharePoint.

2) OTHER HOSTING BENEFITS FOR SCHOOL DIVISIONS:

- **Data Back-up Service** - This service remotely backs-up server data to MERLIN's data centre. Currently, ten educational organizations access this service utilizing a total of 37 servers.
- **Hosting websites and domain names** - MERLIN hosts 124 websites and 150 primary and 26 secondary domain names.
- **Email list server** - This electronic mail discussion list gives each mailing list a unique web page and allows users to subscribe, unsubscribe and change their account options over the web. Currently, MERLIN has 58 lists.
- **Hosted virtual servers and storage** - MERLIN has successfully worked on several pilot projects with one post-secondary institution and seven school divisions.
- Through hosting services for the Department of Education and Training, school divisions also benefit from the following initiatives:
 - **Blackboard Learning Environment** - Students and school divisions across the province have opportunities to access provincially created distance education courses through MERLIN's hosting of Blackboard. To ensure up-to-date support, new versions of Blackboard are provided when available.
 - **Websites** - Department of Education and Training - MERLIN has been hosting their website since 1996. This currently includes 6,720 web pages and 14,470 PDFs.
 - **Hosted MEL/DREF from the Manitoba Education Library system and associated databases.** Teachers across the province can access these online resources. MERLIN provides ongoing support for the library servers. There are three MEL and four DREF servers in the MERLIN infrastructure accessed from the Internet as well as from the Managed Environment by staff and Manitoba teachers.

Security

- **Anti-spam/Anti-virus Email Filtering Service** - All email accounts hosted by MERLIN are scanned for spam and viruses. This service is available for an annual fee to any school division that runs its own email server.
 - Spam continues to be alive and well, albeit in lower volumes than the Agency has seen in past years. Highly targeted phishing campaigns are the top concern as spammers are getting better at evading IP reputation-based tools as well as traditional anti-virus tools. Staff continue to use new and novel techniques to attempt to keep users from receiving unwanted or malicious email.
- **Web Content Filtering** is the blocking or filtering of undesirable Internet web content
 - Currently 32 school divisions and 13 independent schools, seven post-secondary institutions and three educational organizations are using this service.
- **Vulnerability, Anti-virus, and Spyware protection.** MERLIN provides protection from known vulnerabilities, spyware and viruses through Palo Alto Networks' firewall. Non-hosted firewall client traffic passes through this firewall and is:
 - Scanned for client and server based vulnerabilities. Vulnerabilities classified as critical and high are blocked.
 - Scanned for viruses. Web, ftp, imap, pop, smtp, and smb traffic is analyzed and connections containing viruses are reset.
 - Examined for spyware. Spyware categorized as critical and high is blocked and connections are reset.

MERLIN also makes use of Palo Alto's Wildfire service for all client traffic. Wildfire uploads unknown executables and portable apps to its cloud sandbox. Files are executed and all activity is

monitored to determine if the file contains malware or behaves in a malicious way. Future downloads of any files identified as malicious are blocked.

- **MERLIN's Hosted Firewall Service** is a Palo Alto Networks based firewall that currently serves 24 (up from 21 last year) MERLIN clients. It provides all the protection of MERLIN's vulnerability protection service and provides the following additional benefits:
 - Layer 7 next-generation firewall technology which provides application visibility. Clients can identify and classify application traffic from applications such as Facebook, YouTube, Dropbox, iTunes, Twitter, FaceTime, Pinterest, Instagram, BitTorrent, and Netflix.



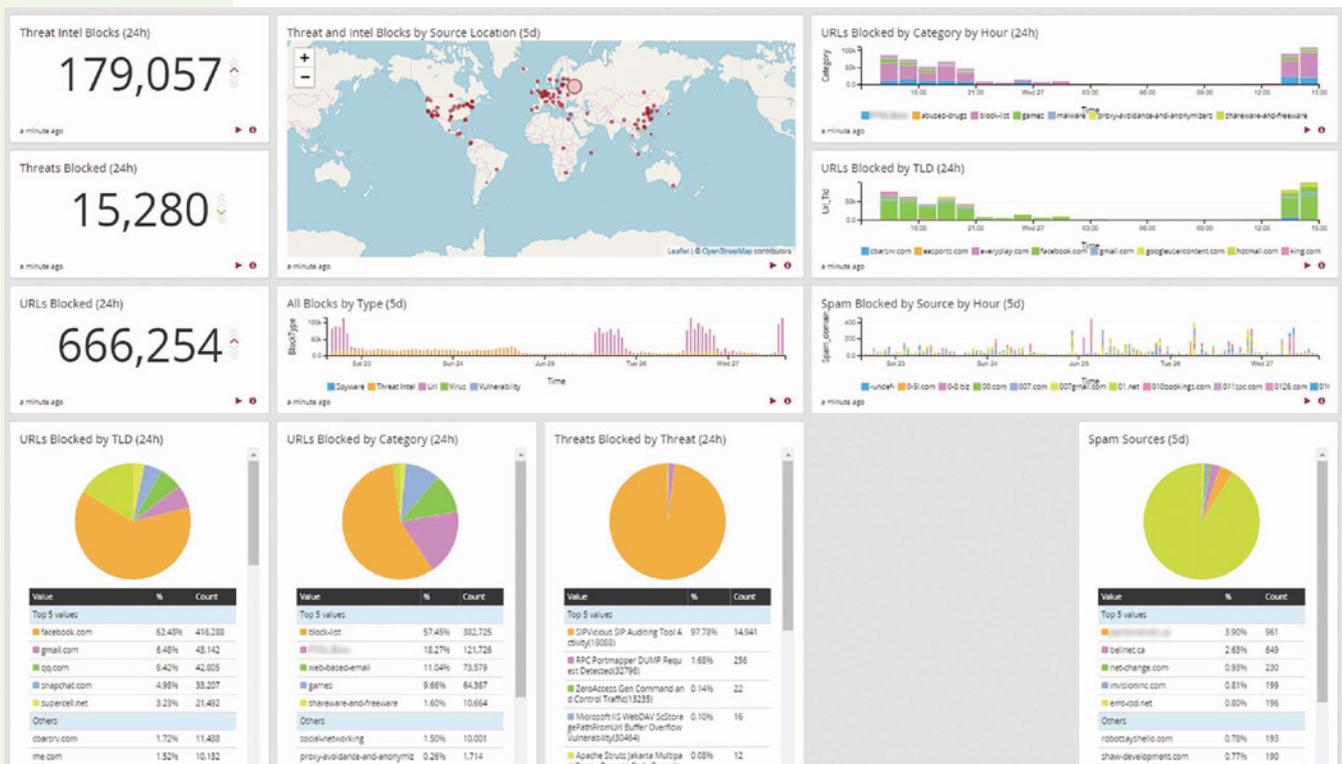
“MERLIN is like an extension of our IT Department. The wealth of knowledge MERLIN brings means we can run our department as lean as possible without compromising service. We always know MERLIN is a phone call away. Add to that MERLIN's expertise in navigating Microsoft and Adobe's licensing and the cost savings from the Partner Program and MERLIN becomes the most valuable entity we work with. We've lost track of the number of times MERLIN has come to our rescue.”

– **Brett Chance Sander, Manager of Information Technology, Lord Selkirk School Division**

- Application control by user or group which provides flexibility on how, when, and what destinations they are allowed. Applications can be blocked, allowed, or limited based on the application's category and the educational need.
- User identification through the firewall's User ID functionality. This connects to a division's user directory and provides the ability to apply application control rules to the appropriate users and groups.
- Visibility of internal device addresses which increases the client's ability to track down and identify the source of malicious traffic and unwanted applications.
- Content filtering by user or group allowing for multiple unique content filtering profiles within a single school or site.
- Secure VPN access to internal systems for staff.

- **In a typical week, MERLIN's vulnerability, anti-virus, and spyware protection and hosted firewall services blocks**
 - Traffic to and from 1,092,587,694 known malicious IPs. These are identified via MERLIN's Palo Alto firewall and shared threat Intel
 - 220,832 Critical and high threats
 - 42,354,650 blocked URLs from customer identified URL categories. 504,909 of these are malicious

GRAYLOG DASHBOARD - MERLIN staff are currently developing this new Dashboard. This new tool is a point in time overview of all the threats, spam and malicious traffic blocked by MERLIN's security devices and software for school divisions, post-secondary institutions and Independent schools. This will be available to the education community in the fall 2018.



Technical Training

Customized training to school divisions helps them sustain operations and enhance their own technology infrastructures. The following list describes training that MERLIN staff have delivered and/or played a coordinating role in providing technical training to the education community.

Seminars and/or workshops delivered	
Palo Alto Firewall Training	May 1, 2017 Winnipeg
Lessons Learned from MERLIN's Back-up Adventure	May 4, 2017 Brandon
20696 - Administering System Center Configuration Manager and Intune	May 8 - 12, 2017 Winnipeg
Hacking a School Network	May 11, 2017 Gimli
Effective Security on an Academic Budget	June 7, 2017 Winnipeg
Server Virtualization	December 6, 2018 Winnipeg
Google Topics	February 21, 2018
Palo Alto Networks - Administration Fundamentals	March 6 - 8, 2018 Winnipeg
Office 365 - How to get it going and not the sales pitch	May 1, 2018
Infrastructure as a Service	May 10, 2018 Gimli
Microsoft Licensing Refresher / Update	May 10, 2018

Technicians Events

MERLIN continues to facilitate a provincial technicians group to foster collaboration, information sharing and informal technical training. For the past two consecutive years, MERLIN coordinated quarterly events for all technicians in the education community.

Positive feedback has been received from attendees as these workshops provide a great networking opportunity to hear and learn what other technicians are doing in other school divisions when it comes to technology projects and/or issues. It is a forum to share experiences and technical knowledge.

“DSFM has been working with MERLIN for over a decade now. We value their excellent level of service, technical expertise and training. Having several key infrastructure servers hosted at MERLIN, our partnership is invaluable. The introduction of their “Infrastructure as a Service” (IAAS) has opened the possibilities for many exciting changes to come. The DSFM team is very pleased and plans to continue working with MERLIN.”

– Sylvain Foidart, IT Administrator, Division scolaire franco-manitobaine

General Support to the Education Community

As part of its service portfolio, MERLIN provides general support to the education community, facilitating communication and collaboration and ensuring that the Agency is on track in its service provision. Some of the areas in which MERLIN provides support include:

Partnerships	
Educational Organizations	MASS, MASBO, MAETL, MFNERC, ManACE, Manitoba Learning Resource Center
Software	Microsoft, Adobe, Corel, Trimble, Synrevoice
Infrastructure	MRnet, MTS, Inetlink, Westman Communications, Manitoba Hydro, Manitoba Netset, Shaw
Research	Defence Research and Development Canada

Help line

The Agency's help line continues to be widely used for free technical support on concerns ranging from Internet access to network and computer hardware issues responding to thousands of inquiries.

MERLIN has created a mailing list that schools can subscribe to view any planned and unplanned network outages and events along with a Twitter account to communicate these updates.

Presentations, meetings and committee support

Educational Activities

In addition to MERLIN's important role in supporting and providing technology services, MERLIN is also asked to participate on Advisory committees and support educational technology activities. Some of these include:

- **MAETL** - Manitoba Association of Educational Technology Leaders - MERLIN staff regularly attend monthly meetings
- **MRnet** - Manitoba Regional Advanced Network - MERLIN staff participate on the Executive Committee

MERLIN also plays a role in helping plan conferences, presentations and workshops. Some of the events that MERLIN participated in include:

- **MADLaT** (Manitoba Association for Distributed Learning and Training) - The Agency continues to support the MADLaT Annual Conference by providing listservs to the organization. MADLaT brings together K-12, post-secondary, business, government and healthcare in the province to work collaboratively on distance education initiatives and professional development.
- **BYTE** - Build Your Teaching Experience Annual Conference for K-12 teachers showcases the many excellent activities that are happening within Manitoba classrooms and schools to support Literacy with ICT. MERLIN provided support to this event.
- **Riding the Wave of Change Annual Technology Conference** - MERLIN staff participate on the Planning Committee and present technical sessions at this event.
- **IT Happens EdTech** - MERLIN provided support to the Louis Riel School Division's annual conference.
- **Canadian Cyber Defense Challenge (CCDC)** - This is a non-profit organization designed to promote and educate awareness of Cyber security. This year, MERLIN helped to write and deliver a full-day Capture The Flag (CTF) style competition for students not only in Manitoba, but across Canada.

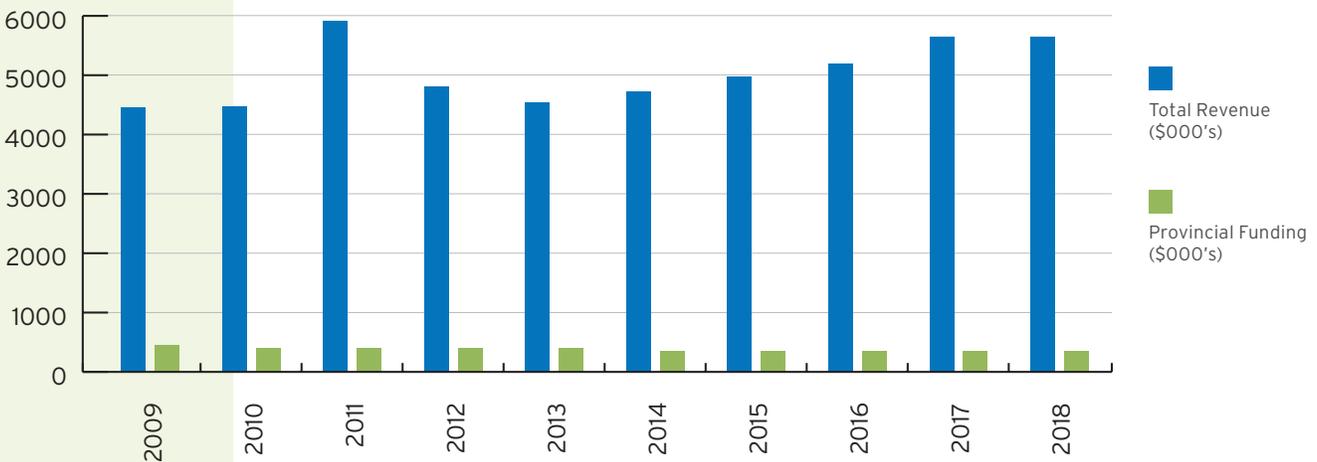
Future Outlook

The major changes planned for FY 2018/19 include:

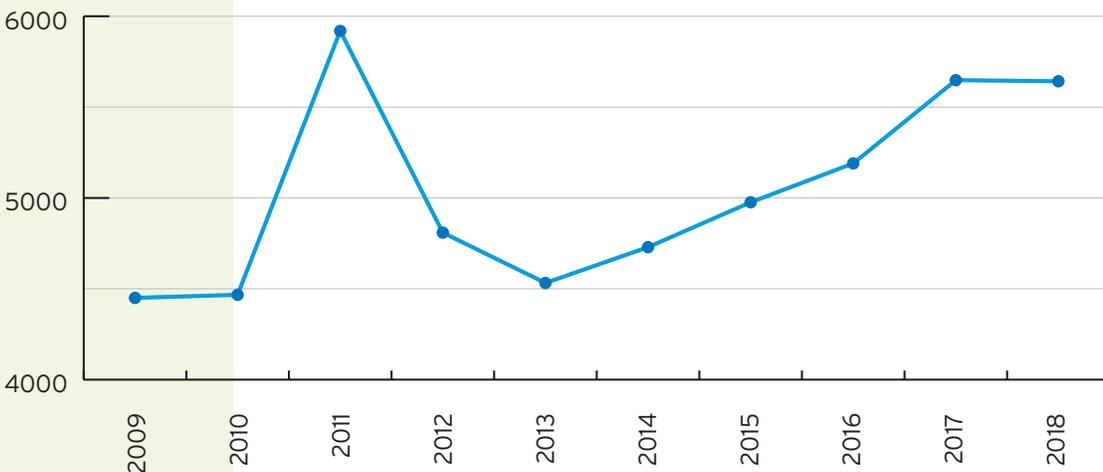
- Expansion of the managed firewall service - This service makes a modern, managed firewall platform available to participating clients allowing them to more effectively manage IT security within their organizations at a reduced cost. MERLIN provides central management of the platform to ensure that it evolves to meet ongoing requirements.
- Expansion of MERLIN's network and Internet service to accommodate the 50% annual growth in demand from our clients. This provides additional resiliency of the network, Internet and hosted services including the expansion of additional data centre location and new commercial Internet partnerships.
- Expansion of shared services with post-secondary clients with the launch of a Partner Program for post-secondary institutions.
- Expansion of MERLIN's security services for both post-secondary and K-12 organizations.

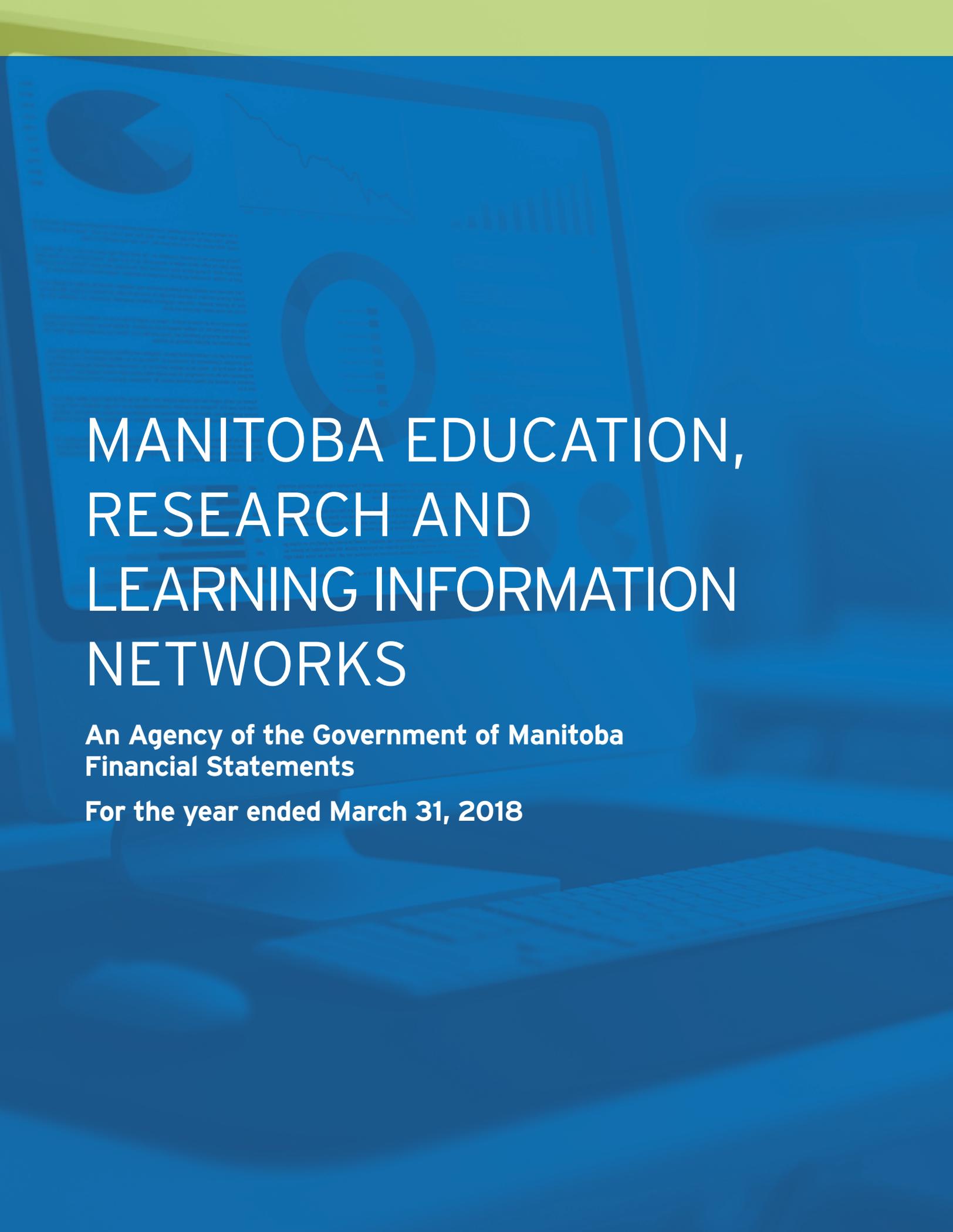
Financial Analysis

MERLIN continues to show significant leverage of provincial funding into service in support of its clients as demonstrated by the following chart. Base funding is used to provide technical support, help desk service, travel equalization, research, cyber security development and awareness. Effective April 1, 2018, MERLIN will no longer be receiving provincial funding.



Total Revenue (\$000's)





MANITOBA EDUCATION, RESEARCH AND LEARNING INFORMATION NETWORKS

**An Agency of the Government of Manitoba
Financial Statements**

For the year ended March 31, 2018

Management's Responsibility for Financial Reporting

The accompanying financial statements are the responsibility of the management of the Manitoba Education, Research and Learning Information Networks (the "Agency") and have been prepared in accordance with Canadian public sector accounting standards. In management's opinion, the financial statements have been properly prepared within reasonable limits of materiality, incorporating management's best judgment regarding all necessary estimates and all other data available to the date of the audit report.

Management maintains internal controls to properly safeguard the assets and to provide reasonable assurance that the books and records from which the financial statements are derived accurately reflect all transactions and that established policies and procedures are followed.

The responsibility of the external audit is to express an independent opinion on whether the financial statements of the Agency are fairly represented in accordance with Canadian public sector accounting standards. The Independent Auditor's Report outlines the scope of the audit examination and provides the audit opinion.

On behalf of Management of Agency:

Original Signed by

Kiley Bender, Acting Chief Operating Officer

Original Signed by

David Olafson, Controller

May 11, 2018



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Independent Auditor's Report

To the Special Operating Agencies Financing Authority

We have audited the accompanying financial statements of **Manitoba Education, Research and Learning Information Networks, An Agency of the Government of Manitoba** which comprise the statement of financial position as at March 31, 2018, and the statements of operations, change in net debt, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of **Manitoba Education, Research and Learning Information Networks, An Agency of the Government of Manitoba** as at March 31, 2018, and the results of its operations and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Original Signed by

Chartered Professional Accountants

Winnipeg, Manitoba
May 11, 2018

MANITOBA EDUCATION, RESEARCH AND LEARNING INFORMATION NETWORKS

AN AGENCY OF THE GOVERNMENT OF MANITOBA STATEMENT OF FINANCIAL POSITION

(In Thousands)

MARCH 31	2018	2017
Financial Assets		
Cash and cash equivalents (Note 6)	\$ 1,443	\$ 384
Accounts receivable	526	452
Portfolio investments	47	47
	2,016	883
Liabilities		
Accounts payable and accruals	470	511
Unearned revenue	1,485	856
Employee future benefits (Note 7)	171	155
	2,126	1,522
Net debt	(110)	(639)
Non-financial Assets		
Prepaid expenses	437	590
Tangible capital assets (Note 8)	638	655
	1,075	1,245
Accumulated surplus	\$ 965	\$ 606

Designated assets (Note 9)

The accompanying notes are an integral part of these financial statements.

MANITOBA EDUCATION, RESEARCH AND LEARNING INFORMATION NETWORKS

AN AGENCY OF THE GOVERNMENT OF MANITOBA

STATEMENT OF OPERATIONS

(In Thousands)

FOR THE YEAR ENDED MARCH 31	2018 BUDGET	2018 ACTUAL	2017 ACTUAL
Revenue			
Province of Manitoba	\$ 346	\$ 346	\$ 346
Fee for goods and services	5,111	5,284	5,300
Other	-	12	2
	5,457	5,642	5,648
Expense			
Advertising and promotion	16	10	20
Amortization of tangible capital assets	313	323	272
Audit and legal fees	14	11	12
Communication and bandwidth	259	194	194
Cost of purchases for resale	2,109	2,211	2,421
Course delivery	90	34	54
Equipment repair and maintenance	340	371	318
Manitoba Network connections	660	829	715
Occupancy	77	76	75
Office and miscellaneous	49	35	43
Professional development	20	1	2
Purchased services	81	-	30
Salaries and benefits	1,409	1,177	1,235
Travel	20	11	13
	5,457	5,283	5,404
Annual surplus	-	359	244
Accumulated surplus, beginning of year	482	606	362
Accumulated surplus, end of year	\$ 482	\$ 965	\$ 606

The accompanying notes are an integral part of these financial statements.

MANITOBA EDUCATION, RESEARCH AND LEARNING INFORMATION NETWORKS

AN AGENCY OF THE GOVERNMENT OF MANITOBA

STATEMENT OF CHANGE IN NET DEBT

(In Thousands)

FOR THE YEAR ENDED MARCH 31	2018 BUDGET	2018 ACTUAL	2017 ACTUAL
Annual surplus	\$ -	\$ 359	\$ 244
Tangible Capital Assets			
Acquisition of tangible capital assets	(300)	(306)	(280)
Amortization of tangible capital assets	313	323	272
Net acquisition of tangible capital assets	13	17	(8)
Other Non-financial Assets			
Decrease in prepaid expenses	135	153	152
Decrease in net debt	148	529	388
Net debt, beginning of year	(725)	(639)	(1,027)
Net debt, end of year	\$ (577)	\$ (110)	\$ (639)

The accompanying notes are an integral part of these financial statements.

MANITOBA EDUCATION, RESEARCH AND LEARNING INFORMATION NETWORKS

AN AGENCY OF THE GOVERNMENT OF MANITOBA STATEMENT OF CASH FLOWS

(In Thousands)

FOR THE YEAR ENDED MARCH 31	2018	2017
Cash provided by (applied to):		
Operating Activities		
Annual surplus	\$ 359	\$ 244
Amortization of tangible capital assets	323	272
	682	516
Changes in:		
Accounts receivable	(74)	(796)
Accounts payable and accruals	(41)	180
Unearned revenue	629	513
Employee future benefits	16	13
Prepaid expenses	153	152
Cash provided by operating activities	1,365	578
Capital Activities		
Acquisition of tangible capital assets	(306)	(280)
Increase in cash and cash equivalents	1,059	298
Cash and cash equivalents, beginning of year	384	86
Cash and cash equivalents, end of year	\$ 1,443	\$ 384

The accompanying notes are an integral part of these financial statements.

MANITOBA EDUCATION, RESEARCH AND LEARNING INFORMATION NETWORKS

AN AGENCY OF THE GOVERNMENT OF MANITOBA

NOTES TO FINANCIAL STATEMENTS (IN THOUSANDS) FOR THE YEAR ENDED MARCH 31, 2018

1. NATURE OF ORGANIZATION

Effective April 1, 1995, Manitoba Education, Research and Learning Information Networks (the "Agency") was designated as a Special Operating Agency pursuant to The Special Operating Agencies Financing Authority Act, Cap S185, C.C.S.M. and operates under a charter approved by the Lieutenant Governor in Council. Effective April 1, 2015, Agency operates as part of Finance under the general direction of the Assistant Deputy Minister.

The Agency is financed through the Special Operating Agencies Financing Authority (SOAFA). SOAFA has the mandate to hold and acquire assets required for and resulting from the Agency's operations. It finances the Agency through repayable loans and working capital advances. This financial framework enables the Agency to operate in a business-like manner according to public policy expectations.

A Management Agreement between SOAFA and the Minister of Finance assigns responsibility to the Agency to manage and account for Agency related assets and operations on behalf of SOAFA.

The Agency remains bound by relevant legislation and regulations. It is also bound by administrative policy except where specific exemptions have been provided in its charter in order to meet business objectives.

The Agency is economically dependent on the Province of Manitoba as it derives much of its revenue and all of its financing requirements from the Province.

2. BASIS OF ACCOUNTING

The financial statements are prepared in accordance with Canadian generally accepted accounting principles for the public sector as recommended by the Public Sector Accounting Board.

3. SIGNIFICANT ACCOUNTING POLICIES

a. Revenue

(i) Government Transfers

Government transfers without eligibility criteria or stipulations are recognized as revenue when the transfer is authorized.

Government transfers with eligibility criteria but without stipulations are recognized as revenue when the transfer is authorized and all eligibility criteria have been met.

Government transfers with or without eligibility criteria but with stipulations are recognized as revenue in the period the transfer is authorized and all eligibility criteria have been met, except when and to the extent that the transfer gives rise to a liability.

(ii) Exchange Transactions

Product revenue is recognized when the goods are shipped or delivered and title and risk of loss pass to the customer. Service revenue is recognized when the rendering of services is completed or substantially completed.

(iii) Other Revenue

All other revenues are recorded on an accrual basis.

b. Expenses

(i) Accrual Accounting

All expenses incurred for goods and services are recorded on an accrual basis.

(ii) Government Transfers

Government transfers are recognized as expenses in the period in which the transfers are authorized and all eligibility criteria have been met.

c. Financial Assets

(i) Portfolio Investments

Portfolio investments are short-term deposits with original maturities of more than three months. These investments are recognized at cost.

d. Liabilities

Liabilities are present obligations as a result of transactions and events occurring prior to the end of the fiscal year. The settlement of the liabilities will result in the future transfer or use of assets or other form of settlement. Liabilities are recorded at the estimated amount ultimately payable.

e. Non-financial Assets

Non-financial assets do not normally provide resources to discharge liabilities of the Agency. These assets are normally employed to provide future services.

(i) Prepaid Expenses

Prepaid expenses are payments of goods or services which will provide economic benefit in future periods. The prepaid amount is recognized as an expense in the year the goods or services are consumed.

(ii) Tangible Capital Assets

Tangible capital assets are recognized at cost. Cost includes the purchase price as well as other acquisition costs. The cost of tangible capital assets, less any residual are amortized over their estimated useful lives as follows:

Computer hardware	25%, straight-line
Computer software	25%, straight-line
Equipment and furniture	20%, straight-line
Leaseholds	20%, straight-line

f. Measurement Uncertainty

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingencies at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

4. FINANCIAL INSTRUMENTS AND FINANCIAL RISK MANAGEMENT

Measurement

Financial instruments are classified into one of the two measurement categories: (a) fair value; or (b) cost or amortized cost.

The Agency records its financial assets at cost, which include cash and cash equivalents, accounts receivable and portfolio investments. The Agency also records its financial liabilities at cost, which include accounts payable.

Gains and losses on financial instruments measured at fair value are recorded in accumulated surplus as remeasurement gains and losses until realized. Upon disposition of the financial instruments, the cumulative remeasurement gains and losses are reclassified to the consolidated statement of operations. Gains and losses on financial instruments measured at cost or amortized cost are recognized in the consolidated statement of operations in the year the gain or loss occurs.

The Agency did not incur any remeasurement gains and losses during the years ended March 31, 2018 and 2017.

Financial Risk Management - Overview

The Agency has exposure to the following risks from its use of financial instruments: credit risk; liquidity risk; market risk; interest risk; and foreign currency risk.

Credit Risk

Credit risk is the risk that one party to a financial instrument fails to discharge an obligation and causes financial loss to another party. Financial instruments which potentially subject the Agency to credit risk consist principally of cash and cash equivalents, accounts receivable, and portfolio investments.

The maximum exposure of the Agency to credit risk at March 31 is:

	2018	2017
Cash and cash equivalents	\$ 1,443	\$ 384
Accounts receivable	526	452
Portfolio investments	47	47
Maximum exposure to credit risk	\$ 2,016	\$ 883

Cash and cash equivalents, and portfolio investments: The Agency is not exposed to significant credit risk as these amounts are held by the Minister of Finance.

Accounts receivable: The Agency is not exposed to significant credit risk as the balance is due from a large client base, and payment in full is typically collected when it is due. The Agency manages this credit risk through close monitoring of overdue accounts.

The Agency establishes an allowance for doubtful accounts that represents its estimate of potential credit losses. The allowance for doubtful accounts is based on management's estimates and assumptions regarding current market conditions, customer analysis and historical payment trends. These factors are considered when determining whether past due accounts are allowed for or written off.

The allowance for doubtful accounts balance at March 31, 2018 was \$5.

Liquidity Risk

Liquidity risk is the risk that the Agency will not be able to meet its financial obligations as they come due.

The Agency manages liquidity risk by maintaining adequate cash balances and by review from the Province of Manitoba to ensure adequate funding will be received to meet the obligations.

Market Risk

Market risk is the risk that changes in market prices, such as interest rates and foreign exchange rates, will affect the Agency's income or the fair values of its financial instruments.

Interest Rate Risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The interest rate exposure relates to funds on deposit, and portfolio investments.

The interest rate risk on funds on deposit is considered to be low because of their short-term nature. The interest rate risk on portfolio investments is considered low as the original deposits are reinvested at rates for investments with similar terms and conditions.

Foreign Currency Risk

Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. The Agency is not exposed to significant foreign currency risk as it does not have any financial instruments denominated in foreign currency.

5. WORKING CAPITAL ADVANCES

The Agency has an authorized line of working capital advances up to \$2.0 million. As at March 31, 2018 working capital advances were \$NIL (\$NIL in 2017). The line bears interest at prime less 1% and is not secured by specific assets.

6. CASH AND CASH EQUIVALENTS

The Agency invests all surplus cash in short-term deposits with the Province of Manitoba, which are made up of term deposits with maturities of up to three months.

7. EMPLOYEE FUTURE BENEFITS

	2018	2017
Severance benefits	\$ 154	\$ 141
Sick pay benefits	17	14
	\$ 171	\$ 155

Pension Benefits

Employees of the Agency are eligible for pension benefits in accordance with the provisions of the Civil Service Superannuation Act (CSSA), administered by the Civil Service Superannuation Board (CSSB). The CSSA established a defined benefit plan to provide benefits to employees of the Manitoba Civil Service and to participating agencies of the Government, including the Manitoba Education, Research & Learning Information Network, through the Civil Service Superannuation Fund (CSSF).

Pursuant to an agreement with the Province of Manitoba, the Agency is required to pay to the Province an amount equal to the current pension contributions of their employees. The amount paid for 2018 was \$82 (\$93 in 2017). Under this agreement, the pension liability is the responsibility of the Province, and the Agency has no further pension liability.

Severance Benefits

Effective April 1, 1998, the Agency began recording accumulated severance pay benefits for its employees. The amount of severance pay obligations is based on actuarial calculations. The periodic actuarial valuations of these liabilities may determine that adjustments are needed to the actuarial calculations when actual experience is different from that expected and/or because of changes in actuarial assumptions used. The resulting actuarial gains or losses are amortized over the expected average remaining service life of the related employee group.

An actuarial report was completed for the severance pay liability as of March 31, 2017. The report provides a formula to update the liability on an annual basis. The Agency's actuarially determined net liability for accounting purposes as at March 31, 2018 was \$154 (\$141 in 2017), with an actuarial adjustment being amortized over the 15 year expected average remaining service life (EARSL) of the employee group.

Significant long-term actuarial assumptions used in the March 31, 2017 valuation, and in the determination of the March 31, 2018 present value of the accrued severance benefit obligation were:

Annual rate of return:	
Discount rate	3.80%
<hr/>	
Annual salary increase rates:	
Annual productivity increase	1.00%
Annual general salary increase	2.75%
	<hr/>
	3.75%
	<hr/>

The severance benefit liability at March 31 includes to following components:

	2018	2017
Accrued benefit liability		
Balance, beginning of year	\$ 146	\$ 135
Actuarial loss	36	-
Benefits accrued	5	4
Interest on accrued benefits	7	8
Severance paid	-	(1)
Balance, end of year	194	146
Less unamortized actuarial losses	(40)	(5)
Severance benefit liability	\$ 154	\$ 141

The total expenses related to severance benefits at March 31 includes the following components:

	2018	2017
Interest on obligation	\$ 7	\$ 8
Current period benefit cost	5	4
Amortization of actuarial losses over EARSL	2	2
Total expense related to severance benefit	\$ 14	\$ 14

Sick Pay Benefits

The Agency provides sick leave benefits for employees that accumulate but do not vest. The accrued benefit obligation related to sick leave entitlement earned by employees is determined using a valuation model developed by an actuary. The valuation is based on employee demographics, sick leave usage and actuarial assumptions. These assumptions include a 3.80% discount rate and a 3.75% annual salary increase.

8. TANGIBLE CAPITAL ASSETS

	2018			
	OPENING BALANCE	ADDITIONS	DISPOSALS	CLOSING BALANCE
Cost				
Computer hardware	\$ 2,052	\$ 284	\$ -	\$ 2,336
Computer software	110	22	-	132
Equipment and furniture	48	-	-	48
Leaseholds	20	-	-	20
	2,230	306	-	2,536
Accumulated Amortization				
Computer hardware	1,408	317	-	1,725
Computer software	102	5	-	107
Equipment and furniture	45	1	-	46
Leaseholds	20	-	-	20
	1,575	323	-	1,898
Net book value	\$ 655	\$ (17)	\$ -	\$ 638

	2017			
	OPENING BALANCE	ADDITIONS	DISPOSALS	CLOSING BALANCE
Cost				
Computer hardware	\$ 1,772	\$ 280	\$ -	\$ 2,052
Computer software	110	-	-	110
Equipment and furniture	48	-	-	48
Leaseholds	20	-	-	20
	1,950	280	-	2,230
Accumulated Amortization				
Computer hardware	1,141	267	-	1,408
Computer software	99	3	-	102
Equipment and furniture	43	2	-	45
Leaseholds	20	-	-	20
	1,303	272	-	1,575
Net book value	\$ 647	\$ 8	\$ -	\$ 655

9. DESIGNATED ASSETS

The Agency has allocated \$47 (\$47 in 2017) of its portfolio investments as designated assets for cash received from the Province of Manitoba for the vacation entitlements earned by employees of the Agency prior to its designation as an SOA and the severance pay benefits accumulated to March 31, 1998 for certain of their employees. This amount is held in an interest bearing account until the cash is required to discharge the related liabilities. Any unused balance is reinvested annually.

Appendix 1

Staff as at March 31, 2018

Kiley Bender	A/Chief Operating Officer
Darrell Finnimore	Media Technician
Travis Friesen	Consultant, IT Security
Warren Grieder	Consultant, Internet Technologies
Michael Hart	Consultant, Microsoft Technologies
Ryan Hébert	Consultant, Microsoft Technologies
John Hiebert	Consultant, Networking Technologies
Diane Karalash	Provincial Licensing and Software Sales Specialist
Colette Lafond	Communications Coordinator
Brent McCrea	Consultant, Microsoft Technologies
David Olafson	Controller
Alicia Phillips	Office Manager
Grant Wallin	Manager, Information & Communication Technologies
Vacant	Manager, Infrastructure Services
Vacant	Manager, Partner Programs
Vacant	Office Administrative Support

Appendix 2

ADVISORY BOARD as at March 31, 2018

		Representing
Kiley Bender A/Chief Operating Officer	MERLIN	MERLIN
Stephen Ross , Chair Superintendent	Western School Division	MASS
Elise Downey Secretary-Treasurer	Sunrise School Division	MASBO
Al Dunthorne Director IT Services	Brandon University	Post-secondary
Bradley Hampson Assistant Superintendent Technology & Library Services	Frontier School Division	MAETL

- MASS** Manitoba Association of School Superintendents
- MAETL** Manitoba Association of Educational Technology Leaders
- MASBO** Manitoba Association of School Business Officials







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