I am excited to once again invite you to read our Fall Newsletter. Our team is very proud of the work our districts are doing to leverage digital as they transform the learning environments for their students and staff.

In this edition, you will read how districts across Canada are ensuring their infrastructures are robust enough to support a variety of devices, both district and student owned, embracing the cloud, and focusing on cybersecurity.

With stable and robust infrastructures, our districts are then able to focus on leveraging digital across their division to support inquiry-based, deep learning. Our highly experienced K-12 Education Consultants are working with districts to determine when, where and how digital can be leveraged in essential instruction and assessment practices. With a focus on system-wide adoption of these practices and creating an environment that supports staff in their adoption of these practices with digital “tucked” into them, our districts are moving beyond pockets of innovation to a division-wide culture that embraces digital and supports all learners.

An example of what can happen when learning is transformed is provided in the article on IBM’s P-TECH School (Pathways in Technology Early College High School) that opened in Brooklyn in 2011. It is a powerful STEM example where the student's passion is at the centre of truly authentic learning. Closer to home, IBM Canada’s very strong commitment to STEM is illustrated in our STEM 4 Girls initiative in the last article.

We encourage you to sit back, relax and dive into this edition. If you have any questions or comments, please feel free to email me at asaftich@ca.ibm.com.

Sincerely, Anne Saftich, Chief Education Officer

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Atlantic Canada

The Province of Prince Edward Island is nearing completion of their 62 school upgrade of technology. Portable devices (laptops and Chromebooks) are replacing desktops and each school is also getting a newly designed wireless infrastructure along with IBM’s SchoolConnect and teacher P.D. The complete package!

South Western Ontario

Both the Greater Essex County District School Board and the Lambton Kent District School Board have recently chosen Scholantis as the partner for their new district and school websites. The design process is nearing completion and planning is being done to launch their newly branded sites. For a successful portal, mobile access is key, and these new sites will be optimized for readers using mobile devices.

For more information, contact Julie Parkyn, IBM K-12 Education Client Manager at jparkyn@ca.ibm.com

Northern Ontario

Algoma District School Board completed their SCCM update and task sequence automation. They are moving away from in-house scripts, and instead utilizing SCCM tools for imaging, inventory, and software updates.

York Catholic District School Board is looking forward to big time savings having completed their ID Automation of all students. Now, data from SAP is being filtered though FIM to automate the staff and teacher accounts. Just as exciting is the implementation of an automated password reset function. YCDSB is automating these high volume, repetitive tasks so IT can spend their time on more complex and important projects.

Many of the Northern Boards are focusing on cloud Disaster Recovery and Backup services.

For more information, contact George Antoun, IBM K-12 Education Services and Solutions Manager at antoung@ca.ibm.com

Eastern / Central / Southern Ontario

Ottawa Catholic SB has been very busy with systematically upgrading their infrastructure with assistance from IBM K-12. They have completed a VMware refresh and upgrade on Lenovo servers while installing a new V7000 Storage solution. The district has experienced Denial Of Service attacks and because of that the IBM K-12 Security Practice along with IBM Security Experts have completed a Security Practices Engagement Review which was followed by Penetration Testing exercises. And, the IBM K-12 team and the Cisco Meraki team are working on a Proof of Concept Cloud Meraki Wireless installation at an elementary school.

Upon completion of their current 5 year Strategic Plan, the Renfrew County District School Board (RCDSB) issued an RFP for external assistance to conduct an independent review of current accomplishments and challenges to help them with their next 5 year plan. IBM Canada K-12 was very pleased to be awarded the RFP. Building on all the great work the district has done, IBM completed three major assessments with RCDSB: a new Digital Learning Plan, an IT Optimization Strategy and Planning Review and an IT Organization Effectiveness Assessment.

Limestone District School Board’s long-tenured and experienced IT manager announced his retirement for August 2016. Subsequently, the district asked IBM to conduct a thorough, independent review of their IT organization (structures and roles), along with an end-to-end infrastructure analysis. This review is providing recommendations just in time for their new IT Manager.

Last year, Peterborough, Victoria, Northumberland and Clarington Catholic DSB (PVNC), along with Algonquin Lakeshore Catholic DSB, solicited proposals for a Teaching and Learning and IT Services Partner for a six-year period. IBM Canada K-12 was delighted to become this partner. The scope includes Teaching and Learning and IT Consulting Services, Lenovo laptops, desktops and servers, and an IBM Storage solution. Since then, PVNC and IBM have been very busy with a new SCCM installation, a Windows 10 image development, and a

Highlights
complete SchoolConnect district-wide deployment. In preparation for the future, PVNC is also implementing an IBM Softlayer Cloud Application pilot.

After choosing IBM to be their 6-year IT and Teaching and Learning Partner, the Algonquin Lakeshore Catholic DSB (ALCDSB) is moving full steam ahead. IBM K-12 has assisted ALCDSB’s technical team with an SCCM version upgrade and a major SchoolConnect software upgrade including Cloud Printing, Office 365 Cloud Drive and ID Automation – 3 services that automate repetitive tasks so IT can work on more strategic challenges.

The Renfrew County Catholic DSB wanted an external audit to focus on key areas such as a Disaster Recovery and Business Continuity Plan for IT. The district chose IBM K-12 to review and make recommendations to address their audit requirements. IBM is engaged in an IT Organization Review, an IT Infrastructure Review (including DR and Backup), and a Business Continuity IT Plan to be completed in 2016.

Hamilton-Wentworth DSB has upgraded SchoolConnect to the latest version, enhanced their SchoolConnect ID Automation process, upgraded their V7000 Storage Solution, and added Lenovo servers into their data centre.

IBM and Waterloo Region DSB worked on many projects: Storage and Service upgrades, VMware, Switch upgrades and redesign, a SchoolConnect upgrade, SchoolConnect Cloud Drive implementation, and SchoolConnect Password Self-Managed Portal solution.

For more information, contact Frank Grano, IBM K-12 Education Client Manager at fgrano@ca.ibm.com

Manitoba / Saskatchewan / Alberta

In collaboration with the IBM Teaching & Learning Team, in Manitoba, the Hanover School Division’s Deeper Learning Team has been actively working to develop strategies and implement their plans developed in 2015. These plans were rooted in their ‘Our Kids’ project and have been tightly connected with the pedagogical practice of student inquiry learning. The expectation is that there will be a student-centred learning experience for all, supported by the division’s profile of the 21st century learner.

Once the Holy Family RCCSD in Saskatchewan completed a review of all infrastructure, the IT team made the strategic move to strengthen their ADS backbone and bring in ID Automation. Their cybersecurity was enhanced with cloud-based wireless

continued on page 4
For more information, contact Joanne Jackson, IBM K-12 Education Client Manager at jjackson@ca.ibm.com

**British Columbia**

**Success and Progress Continues with B.C.’s Next Generation Network (NGN)**

By December 2016, 100% of the more than 1600 educational sites will be on the NGN. IBM Canada’s K-12 Division and its K-12 Solution Partners are now working with the B.C. Ministry of Education and the 60 School Districts to begin increasing the use of many of the management and security tools that have become available on the Palo Alto Firewalls.

James Shypitka, Executive Director, Strategic Technology Initiatives for the B.C. Ministry of Education, said, “We are now completing the NGN implementation that began three years ago. It is key to ensure we continue to enhance sustainability processes with our provincial schools and districts. It is also very critical we begin the next level of evolution/maturity and put plans in place that support districts in further leveraging the security, and management capabilities of their networks.”

The Enterprise Licensing Agreement that is now in place across the Province will give school districts subscription access to all of the key Palo Alto security and management tools. Regional workshops will be scheduled throughout the 2016/17 school year so that the districts expand their knowledge of and learn how to leverage these tools.

For more information, contact Steve Cuccione, IBM K-12 Education Client Manager at scuccione@ca.ibm.com.

**Looking at Technology Through An Educator’s Eyes**

In 2011, Abbotsford School District #34 reached out to IBM Canada K-12 to look at their aging and inconsistent technology infrastructure and assist them with a five-year roadmap that would:

1. Assess all district technologies and infrastructure
2. Determine stakeholders’ issues
3. Implement a strategy to provide reliable network access from school or home
4. Develop a base infrastructure that could be built upon by all stakeholders over the next 5 years.

This past spring, SD34 wanted to build on their last 5 years’ successes to create a vision and a “2.0 roadmap” that would take them to 2020. On this occasion however, with infrastructure well in hand from previous initiatives, the focus was all about:

1. Working with teachers, students, administrators, and parents to determine the role of technology in meeting the demands of new curriculum
2. Evaluating the latest technology trends (e.g. Cloud Services) for benefits to SD34
3. Refreshing any technology that required refreshing.

Over the course of 12 weeks, IBM Canada’s K-12 Teaching and Learning Team facilitated dialogue and discussion with teams from the schools, as well as other district education groups, including Senior Management. The many conversations dealt with SD34’s short and long-term priorities, opportunities, challenges and measures of success leading to 2020.

This past summer, the easy but time consuming work was completed to refresh the technology infrastructure in 51 schools and other district buildings.

Throughout 2016/17, the more difficult work on their “2.0 roadmap” is happening across all levels of learning on the new curriculum, with a focused effort in K-3 early reading. IBM will continue to assist SD34 with input on best and new emerging practices and provide feedback on their strategies, successes, and challenges as SD34 plans for 2020.

For more information, contact Anne Saftich, IBM K-12 Teaching and Learning Practice Lead at asaftich@ca.ibm.com
Most educators believe in the potential power of leveraging digital but in many schools, technology continues to be one of the most under-utilized and ineffectively used resources. The question is: how can districts ensure this potential is harnessed effectively to impact the learning experience for their students? In IBM, we believe that there are three keys to successfully leveraging digital.

The first key is to start with the pedagogy. Many school districts have been trying to shift to student-centred learning environments for many years. This shift is characterized by approaches such as student inquiry learning, project-based learning and problem-based learning. Although these are different approaches, they all share the idea that the student, and student thinking, needs to be at the centre of learning. IBM’s approach is that we need to consider the student challenges and support teachers in implementing the most effective pedagogical approach; then we look at how to leverage digital to support this approach.

River East Transcona School Division in Winnipeg is an example of a district which has made this connection. They are now in their third year of a staged rollout that primarily focuses on student learning in mathematics through problem solving, and then uses technology as one critical resource.

The second key, also on the pedagogical front, is that school districts are focusing their efforts on connecting teaching and learning with global competencies to provide a richer, life skill-based, learning experience for students. Educators often refer to these competencies (collaboration, citizenship, character, creativity, critical thinking, and communication) as the 4C’s or the 6C’s, for example, depending on which framework they adopt.

Hanover School Division in Manitoba, with the support of our Education Consultants, is moving into their second year of implementing their plan which has the 6C’s as a core component.

IBM K-12 Education has been working with and supporting Michael Fullan, one of Canada’s leading educational thinkers, in his New Pedagogies for Deep Learning (NPDL), which promotes a focus on deep learning competencies or 6C’s. NPDL has four design elements in its approach to teaching and learning. These are pedagogical practices, learning partnerships, learning environments and leveraging digital. The importance of leveraging digital was noted by Fullan when he stated that “digital tools and resources have the potential to enable, expand and accelerate learning in ways previously unimaginable” (Fullan M. & Langworthy, M. (2014) A Rich Seam: How New Pedagogies Find Deep Learning, London: Pearson).

The final key, which is mostly related to effective change management, is focus. The majority of school districts simply have too many initiatives on the go. Teachers are bombarded with new initiatives, which often lose their impact as they are filtered down from the province or the district office.

Renfrew County District School Board in Ontario, recently worked with IBM Canada K-12 Education Consultants to develop a comprehensive Learning Plan Leveraging Digital – a plan to connect their strategic priorities, the objectives in their district improvement plan, and the concept of leveraging digital to support teaching and learning. One of the benefits of this plan is that it focused and connected the work of the district, and then leveraged digital within that smaller number of key district initiatives.

“Our collaboration with IBM Canada K-12 provided a focused pathway for us to better apply our technology and training so our staff feel empowered to incorporate devices and platforms into their instruction,” said Roger Clarke, Director of Education with the Renfrew County District School Board. “I am confident this will ultimately lead to greater student success in our mathematics strategy as we build a stronger, more responsive student-centred learning environment.”

By leveraging digital in areas of the district’s and teachers’ greatest needs, teachers will see how it can excite and engage students and lead to improved student learning. Their interest and enthusiasm for teaching with technology will be captured.

To effectively leverage digital you need to first start with the pedagogy and the learning. Digital should then be considered as a tucked-in resource that is accessible when and where students and teachers need it.

If your school district is looking to take greater advantage of the investments you have made in digital resources to support your learning priorities and enhance the learning experience for your students and staff, we would be honoured to help you build a vision and plan to do just that!

For more information, contact Jonathan Bibby, Senior Education Consultant at jbibby@ca.ibm.com

Leveraging Digital – Time to Focus on Learning
Connecting staff, teachers and students using a multitude of
technologies on sprawling and overlapping networks poses daunting
security challenges, and creates a myriad of vulnerabilities in school
districts. Securing a district’s network grows infinitely more complex
as information pours in from thousands of devices and through
scores of public Internet-based services. The complexity is dizzying.
The possible points of attack are limitless.

There have been many attacks on school districts, such as
automated attacks, zero-day worms, distributed denial of service
(DDoS), organized cybercrime and more, all of which have
significantly impacted systems and compromised sensitive
student and staff data.

We know that school district CIOs are grappling with growing
frustrations and questions such as:

• What are our current exposures, and what risks should
  be addressed?

• How do we automate and integrate to provide
  actionable intelligence?

• How do we effectively communicate security policies
  and procedures?

• What security capabilities do we need to better manage risk
  and compliance?

• Are we allocating resources and governing to the
  right issues?

We also know that cybersecurity mandates fundamental changes
in processes and attitudes. Effective security requires engagement
from across the district; yet, many executives are unclear as to the
risks and are not sufficiently engaged in threat management.

Based on extensive experience, IBM has developed the Ten
Essential Practices required to achieve a strong, holistic
security posture in the 21st Century. A district’s current security posture
is assessed based on a capability
maturity model that includes
five components: Technology,
Process, Organization, Metrics and
Governance. Desired states and
critical gaps are determined and
actions prioritized, to address and
close these gaps. High level findings,
recommendations and a strategic
roadmap are defined to help the
district develop a comprehensive
security program.

IBM Vulnerability Assessment
services provide a deeper security
assessment of external network infrastructure and applications,
internal network infrastructure, servers and client devices. We
identify and document security exposures that may be used to
infiltrate your network, assess systems for known vulnerabilities,
and evaluate the identified vulnerabilities. Recommendations
will be provided for addressing identified security weaknesses or
implementing viable mitigation strategies.

IBM Penetration Testing services demonstrate the impact
of those identified vulnerabilities in terms of successful attack
scenarios. IBM’s penetration methodology is focused on real world
attack scenarios using the same techniques used by a motivated
attacker. Internal penetration testing simulates an attacker or
malicious insider with established access to a compromised system,
who attempts to elevate network privileges to access applications
and servers containing sensitive data or financial information.
Socially engineering phishing activities may be included based on
pre-approved scenarios, to validate a district’s security awareness
program.

Ottawa Catholic School Board (OCSB) worked with IBM on the
Ten Essential Practices workshop over a 3 week period and was
provided with a detailed, actionable report that included a roadmap
to address critical gaps. Then OCSB followed up with Network
Vulnerability Assessment and Penetration Testing services,
over a 2 week period, and received a detailed technical report
of all identified security exposures, severity level, impact and
recommendations for action.

We are in an era of continuous security breaches where reported
attacks increase every year. Understanding your cybersecurity
risks and developing an effective enterprise security capability is
critical for your school district.

For more information, contact George Antoun, Solutions and
Services Manager at antoung@ca.ibm.com
VMware and IBM Softlayer – An Unbeatable Team

IBM and VMware, Inc announced a strategic partnership designed to help you take better advantage of the cloud’s speed and economics. The new agreement will enable school districts to easily extend their existing workloads, as they are, from their on-premises software-defined data centre to the cloud.

For districts utilizing VMware technologies, this partnership will help preserve your IT investments by avoiding retooling expenses, development risks and reducing security concerns. IBM Cloud delivers fast, easy and automated access to public, private and/or hybrid cloud services that enable districts to lower their overall IT costs while increasing agility and productivity.

IBM and VMware have jointly designed an architecture and cloud offering that will enable districts to automatically provision pre-configured VMware Software Defined Data Centre (SDDC) environments, consisting of VMware vSphere, NSX and Virtual SAN on the IBM Cloud.

With this SDDC environment in place, you will be able to deploy workloads in this hybrid cloud environment without modification, due to common security and networking models based on VMware. The main advantage is that all the tools, software and skill sets remain the same. There is no migration because the workloads don’t get converted, they simply get copied. So extending your data centre into the IBM Cloud is as easy as “copy and paste.” Only IBM Cloud provides the ability to move VMware workloads to the Cloud exactly as you would on premises, and manage as a single environment.

IBM will utilize its extensive CloudBuilder tools and workload automation capabilities to automatically provision pre-configured or custom workloads to the cloud, validated by VMware’s design patterns for SDDC architectures. In addition, VMware has extended vRealize Automation and vCenter management tools to deploy and manage environments on the IBM Cloud, as if they are part of a district’s local data centre.

The two companies also will jointly market and sell new offerings for hybrid cloud deployments, including seamless workload migrations, disaster recovery, capacity expansion and data centre consolidation.

Additional key benefits for districts include:

- VMware customers will be able to use a flexible, monthly-based consumption pricing model that makes it more cost effective for users by enabling a simple pay-as-you-go option
- IBM and VMware will provide the expertise, solutions, and cloud infrastructure to help districts manage and scale their IT resources running in private and public clouds, utilizing the tools, processes and APIs with which districts are already familiar
- Through sophisticated workload automation, clients will have the ability to quickly provision new or scale existing workloads to the IBM Cloud
- Districts will be able to comply with data residency and other regulatory mandates.

For more information, contact George Antoun, Solutions and Services Manager at antoung@ca.ibm.com

Extending your data centre into the IBM Cloud is as easy as “copy & paste”
Cloud computing, often referred to as simply the cloud, is the delivery of on-demand computing resources — everything from applications to data centres — over the Internet on a pay-for-use basis.

School district CIOs recognize that cloud computing can deliver significant value, speed and agility.

However, they often struggle with questions that hinder them from taking the next step, including:

• How can cloud support our organization’s objectives?
• What types of services would be most appropriate?
• What would be the likely benefits?
• Would our current IT infrastructure support cloud delivery?
• What specific IT improvements would we need to make?

Because of the benefits of cloud computing, IBM K-12 has invested significantly in cloud skills for both MS Azure and IBM Softlayer and created cloud services tailored for Canadian school districts.

Cloud Infrastructure Strategy and Planning

Most districts want to start with our Cloud Infrastructure Strategy and Planning service. This consulting engagement is delivered through a number of facilitated workshops and interviews with district staff. It helps the district evaluate their readiness for cloud computing, and understand what types of applications/workloads might be suitable for migration to a cloud environment. The goal is to develop a high level vision, strategy, value case, and roadmap for cloud computing.

We begin with an overview of cloud concepts and develop a shared understanding of your business and IT goals. We then help you to:

• establish the strategic alignment between IT and the business
• use a number of techniques to determine what types of services and which delivery model is right for you
• assess the current environment to determine strengths, gaps, and readiness
• develop your value proposition for cloud computing
• discuss cloud adoption implications on roles, organization and governance.

Finally, we work with you to prioritize actions for a robust implementation roadmap that becomes part of the final deliverable.

**Cloud Backup**

Backup is a critical IT process that can be time-consuming to set up, test, maintain, and support. It requires significant hardware and software components, which can be costly to refresh when they need to be upgraded.

Cloud backup solutions, such as Microsoft Azure Backup and IBM SoftLayer, offer several benefits. They are powerful, simple to use cloud-enabled solutions that can decrease your costs and provide a reliable, secure and efficient alternative to tape backup. Furthermore, they provide reduced capital and operational costs, faster recovery times, and achieve Ministry mandates for long term retention of data.

**Cloud Disaster Recovery**

Disaster Recovery (DR) is the process of rebuilding systems/environments after a critical infrastructure failure or event has occurred. Most school districts today do not have a DR strategy and plan because implementing a DR solution at a secondary data centre is complex and costly.

Putting your DR site in the cloud is more cost effective than an on-premises DR solution. It allows for greater flexibility by easily increasing or decreasing your storage capacity as your business demands. Rather than having to commit to a specific amount of computer resources and storage for a certain time and worry whether you are meeting or exceeding those requirements, you can scale as you need and pay as you go.

Another important difference between cloud-based DR and traditional recovery practices is the benefit in improved RPO (Recovery Point Objective) and RTO (Recovery Time Objective). With cloud-based DR, your site has the capability to recover from a warm site right away (or DR ready state), drastically reducing fail-over errors and RPO and RTO times from days, or even weeks, to hours. It also allows districts to run DR drills with no business or application impact.

Currently, we are working with the Ottawa Catholic School Board on implementing DR and Backup onto IBM Softlayer Cloud. They are taking advantage of the newly announced IBM-VMware worldwide partnership, which will allow OCSB to extend their on prem VMware environment to run native VMware in the Softlayer Cloud.

IBM K-12 Education is also implementing many Microsoft Azure Site Recovery Services in school districts enabling Microsoft’s cloud DR solution.

**Hybrid Cloud**

Infrastructure as a Service (IaaS) has evolved from a stand-alone offering – where customers could provision services in the cloud, to a hybrid environment – where the cloud becomes a logical extension of your on-premises data centre allowing for greater scalability, flexibility and optimization. Hybrid cloud is about matching the right solution to the right job.

Hybrid cloud is the most likely scenario for most school districts, allowing them to maintain a data centre and add cloud services to supplement and scale-out, as required. It allows districts to provision servers in the cloud on-demand to ramp up capacity for key times of the year, such as IEPs and report cards. This eliminates the cost of purchasing technology that is underutilized most of the year, thus reducing your overall total cost of ownership.

By combining dedicated and cloud resources, districts can also address many security and compliance concerns and radically transform security practices. Whereas traditional security is typically manual, static and reactive – dynamic cloud security is standardized, automated, agile and elastic.

Based on our extensive experience with school districts and understanding of cloud solutions, we identify the workloads that are a good fit for cloud and move those workloads into Azure or SoftLayer to transition to a hybrid cloud model. Other types of applications or workloads are not a good fit for cloud delivery and will continue to be delivered in a traditional, but more optimized, IT environment.

The IBM Canada K-12 team is on standby, ready to work with you. Whether it is analyzing your cloud readiness, developing a plan and roadmap, implementing a cloud backup or DR solution, or evolving to a hybrid cloud model, we can help! In each case, we will work with you to develop a strategy and determine the best solution to meet your needs.

*For more information, contact George Antoun, Solutions and Services Manager at antoung@ca.ibm.com*
Cisco Meraki Wireless Soothes Pain Points for IT

As if IT doesn’t have enough challenges! The phenomenal growth of inexpensive Chromebooks and BYOD devices in our schools means that school districts now have to build and manage wireless networks that are larger and more complex than found in many large corporations.

The good news is that Cisco has developed the Meraki line of wireless technology that is a leading edge cloud-based wireless solution which appears to be made for K-12. It eliminates many of the challenges that have hindered IT from providing fast, reliable and secure networking to all the devices in their schools.

**Why is Meraki so popular in K-12?**
Primarily, it’s the Cost Savings that come in many forms

**Cost of equipment** – Wild Rose School Division in Alberta had targeted 50% coverage of the district using a traditional controller-based wireless product. Using the same project budget and Meraki, Wild Rose was able to install higher performance access points across 100% of the district by eliminating controller costs and complexities related to enterprise distributed WiFi systems. Meraki made it easy, it simply works.

**Cost of installation** – IT managers are most impressed with the speed and ease of implementation. High schools can be completed in an afternoon and entire districts in a couple of weeks.

It’s running the cables that takes the time. Where cables can’t be run, the mesh functionality using Access Points as repeaters is a great feature to provide coverage for inaccessible areas of buildings.

**Cost of power** – Time-based port scheduling makes it simple to disable ports at night, which translates to energy and cost savings.

**Cost of upgrades** – Firmware upgrades and feature enhancements are zero touch. They arrive via the cloud and districts benefit from the seamless release of new features and updates that are automatically incorporated into the school devices. New features continue to be introduced and switch capabilities are upgraded on a continuous basis.

**But a close 2nd is Ease of Management**

Top-of-mind within school districts are the limited IT resources. Meraki’s intuitive management interface eliminates the need for specialized training and enables networking tasks to be shared among the IT staff. This is particularly important for remote school districts where hiring a network specialist is difficult. Network administrators can shift their focus from maintaining to improving the network.

Using the Cisco Meraki cloud-based dashboard provides visibility and control over all the networking hardware in every location through one intuitive interface. IT can easily configure and monitor network devices, whether locally or remotely.

Also, due to the drivers, network usage and the mobility of students and staff, IT can create separate wireless SSIDs with independent configurations including bandwidth limits for students, BYOD usage, computer labs and teachers/staff – quickly, easily and effectively.

Your IT team can make changes as needed and implement them across the entire district or at specific sites, no matter how remote.

Jaymon Lefebvre from **Wild Rose School Division** in Alberta explains how he discovered Meraki and how it fits his needs.

https://meraki.cisco.com/customers/k-12-education/wild-rose

*For more information, contact Peter McKay, IBM K-12 Services Manager at pmckay@ca.ibm.com*
Good News! You can now purchase your Chrome Device Management licenses from IBM K-12.

Chrome Device Management Software makes your Chromebook solution easy to manage and configures all your Chrome devices from one pane of glass. Through one panel, you can control who can use each device, what users can do on them, and what the user experience will be.

The Chrome Device Management Console makes deployment, set-up and updates straightforward — administrators can manage a handful or several thousand Chrome devices centrally from a single place. Chrome Device Management Console is the critical tool that is essential to the success of any Chrome implementation.

For information on pricing and how to order Chrome Device Management Licenses, contact your Inside Sales Support Representative on the back page of this newsletter.

Along with Chrome Device Management licenses, IBM Canada K-12 is here to help support you through our multiple Google Services such as:

**Google Chromebook Enablement**
This service enrolls and configures Chromebooks in the Google Management Console and enables Cloud Printing. An IBM K-12 GAFE specialist will help you define managed networks, security policies for users and devices, account control and URLs, applications and extensions and configure pre-installed applications. The Chromebooks will be enabled for auto-enrollment and skills transfer and documentation will be provided.

**Google Apps for Education (GAFE): Planning and Deployment**
We work with you to define an appropriate strategy based on best practices for GAFE implementation followed by a technology review of Active Directory, authentication, security, firewall configuration and bandwidth planning. An IBM GAFE Specialist will install Google Active Directory Sync (GADS), enable desired Google services and migrate user email accounts and data to Gmail, if desired. Training and technical support will be tailored to your needs.

**Federated Authentication Enablement**
School districts may choose to authenticate users based on your on premise Active Directory (AD), which enables single sign-on and keeps all passwords on premise rather than in the cloud.

**Google Apps School Directory Sync**
This service automates the synchronization of users and groups in the Student Information System (SIS) with the GAFE domain. It automatically adds, modifies, and deletes information in the GAFE domain to match data in the SIS. This service is similar to the ID automation service provided by IBM Canada K-12 but rather than extract data from the SIS, populate Active Directory and then sync AD with the GAFE domain, this service eliminates AD from the workflow. One of the benefits of this service is synchronizing class/section (group) information that is typically not maintained in AD.

**GAFE Optimization**
For those districts that have been using GAFE for some time, this exercise will review a district’s GAFE domain and services against best practice, analyze GAFE management procedures, settings, security policies, and documentation and provide recommendations for improvement.

For more information, contact George Antoun, IBM K-12 Solutions and Services Manager at antoung@ca.ibm.com
Are P-TECH Schools the Answer to our Skills Shortage?

Canadian educators know that the global economy is increasingly knowledge-based, with an associated heightened need for workers with post-secondary education. IBM and many other employers report that they cannot find qualified workers.

The Pathways in Technology Early College High School (P-TECH), is one of the innovative partnerships IBM has launched to address this critical skills gap. The first P-TECH school opened in Brooklyn in September 2011, and the concept has now spread to 60 schools in 6 states in the US and is now starting in Australia. Students who complete P-TECH’s six-year program will receive both a high school diploma and an Associates Degree in technology. IBM and other partner organizations will provide mentors for students to help not only with academics, but with planning for employment or further education. Students are also given exceptional exposure to the world of work through internships and extensive real world experience.

Students will focus on STEM (Science, Technology, Engineering & Math) subject areas, preparing them for a variety of exciting career options. A P-TECH school will further focus on Information Technology, equipping students to excel in an increasingly digital world. Technology is at the forefront of the students’ experiences at P-TECH, and the school offers academics structured for students to master competencies related to IT.
Read what one student thinks about his P-TECH experience:

Naseer Campbell was 14-years-old when he decided to pursue a degree in computer science and technology. He’s now 18, in his fifth year of P-TECH, and wrapping up his second summer internship at IBM’s Thomas J Watson Research Center in Yorktown Heights, NY.

Campbell just completed the high school portion of his degree in June and has his sights set on finishing his Associates Degree in Applied Sciences in December of next year.

After taking technology classes through elementary and middle school at Brooklyn’s Elijah G. Stroud, his interest never faded. He jumped on the chance to go to P-TECH when it became available during his transition from middle school to high school.

“It’s an opportunity that nobody would pass up,” Campbell said. “P-TECH is challenging. It’s extremely different from other high schools … they treat you like you’re an adult and allow you to be on your own, while getting help from classmates and dedicated faculty.”

“Sometimes I wish I had a regular high school experience, but I love being a college student at an age most can’t.”

Campbell spent last summer learning about coding, working on IBM’s Bluemix and Internet of Things platforms. Now, he’ll put a heavier focus on coding under the leadership of last summer’s intern coordinator and mentor, Michel Sava, a senior engineer with IBM Research. He is expanding his coding knowledge past Javascript by immersing himself in Python. With this new understanding, he hopes to be able to develop his own websites and apps in today’s API economy.

“I want to create my own APIs, at home using Python.” said Campbell. “Becoming a software engineer is the dream.”

This summer, Sava and Campbell tackled an internal IBM problem: injecting some innovation into the IBM Research IT support ticketing system. The IT support team handle many user submitted tickets for IT assistance, but often find themselves repeating procedure when IBMers share similar computer problems.

“The ticket system is very cumbersome,” Sava said. “We looked at the database and found that there are patterns. People have the same problems over and over again and I thought it might be a worthwhile exercise to look at it programmatically…to use APIs to get an idea of the most common issues.”

Sava, along with Campbell and another P-Tech intern, David Denis, had an idea: work with Mac@IBM and IBM IT Help Central to find solutions to publish the top 10 IT questions of the month as a way of relieving the IT desk from repetitive requests. According to Sava, they would use Python to talk to the API, sorting through the statistics of the reported issues.

“Currently it’s a manual effort where we would need to go through and find solutions to the problems, but we think we can automate it,” Sava said. The team is close to a working demo of the automated solution.

From cloud to cognitive

Last year, Sava assigned his interns to split into groups and learn about Cloud, Analytics, Mobile, Social, and Security technologies in hopes of understanding some of the focal topics that IBM was investing in. This year, Campbell is diving headfirst into the world of cognitive computing, but with a twist. Sava wants his P-TECH interns to apply their newfound knowledge about AI to something they are passionate about. For Campbell, it is discovering what he calls cognitive music.

“When I knew what this summer’s assignment was going to be, Campbell was high on my list as a returning intern from P-Tech.” Sava said. “He always liked IoT (Internet of Things) and hardware, and he was always the one who would tinker with the code and play around with it. My experience with him last year was that he wants to learn and is curious.”

Campbell hopes to learn how cognitive technology can be applied to music, how music changes every day, and how it can be created using IBM artificial intelligence technology.

“It’s fun to create and edit sounds, tinkering with samples and learning about the music production process,” he said.

Campbell is beginning his research into how different artists use different instrumentals, sounds, samples and styles to develop their individual music, and he wants to see if that can be automated.

“I like to keep an open mind. Right now, technology and coding is the thing, but something different may come down the line,” he said. “I love the idea of cognitive.”
Thanks to the SchoolConnect team’s hard work, SchoolConnect 6.3.1 was released in late 2015, featuring Windows 10 compatibility and the SchoolConnect AirPrint service, which allows for the management of Apple device printing through SchoolConnect. More and more districts with Apple technology are using SchoolConnect to manage Active Directory and ID Automation.

Based on user feedback and the rapidly evolving education technology space, the team released version 6.4 in September. Keeping in-line with the marketplace trends, this release is all about cloud. Key improvements include:

**Google Classroom Sync**

SchoolConnect can now sync users and classes to Google Classroom. SchoolConnect ID Automation enables the automated provisioning of classes and users from existing SIS data.

**Cloud Distribution Groups**

SchoolConnect’s robust and effective security groups are now automatically provisioned as distribution lists in Azure. No more manual provisioning or updates to these groups are required, and each security group receives an email address. If desired, the behaviour of this feature can be customized.

**BYOD Landing Page v2**

Customer engagements have led to an improved and redesigned BYOD Landing Page, which your students will love, such as:

- **Mobile responsive design.** As the target audience would normally access this page from a mobile device, we have implemented a new mobile responsive framework and design. The page will automatically stretch and scale to the correct screen size and orientation of your mobile device, allowing for an optimal viewing experience.

- **New visual design.** Iconography, the colour scheme and overall layout have been radically improved.

- **On-premise or cloud hosting.** You have the choice of hosting your BYOD landing page in the cloud or on-premises. We’ve made it easy to host, and compatible with either approach.

- **Data feeds.** By integrating RSS, iCAL and webparts, maintenance and manual updates required for this portal are close to zero.

- **Single Sign On (SSO) to web apps:** If you are an Azure Active Directory (AAD) subscriber, SSO to all Azure-supported applications is supported and easily enabled. An AAD Premium subscription is not required.

**Bug Fixes and Enhancements**

As always, many bug fixes and smaller enhancements have made their way into this release, improving end user experience. Staying up to date with SchoolConnect upgrades minimizes Help Desk support calls. To schedule an upgrade to 6.4, please call 1-800-66-LEARN, or open a ticket via our web helpdesk at www.k-12support.ca.

As always, I look forward to hearing from you with comments or suggestions.

For more information, contact Greg Schneider, SchoolConnect Product Manager at gshneider@ca.ibm.com
IBM Canada is — with its STEM 4 Girls Initiative

Today, more girls and women are active users of technology than ever before. But there are still too few who create this technology, or pursue education in science, technology, engineering, and mathematics (STEM). Females currently make up only 22 percent of current STEM fields.*

Young girls need exposure to information to help them connect how STEM is integral to solving real world issues, and help them understand and explore what skills will give them the best opportunity of success in the future. Over the course of 2016, IBM Canada has dedicated a strategic focus to providing girls with opportunities to experience what STEM means in today’s world. Since March of this year, over 700 girls have participated in IBM’s STEM 4 Girls program.

From Coast to Coast!

By the end of 2016, IBM Canada will have hosted girls in grades 6, 7 and 8 at STEM-related events in Niagara, Ottawa, Calgary, Edmonton, Halifax, Victoria, Montreal and multiple locations in Toronto and New Brunswick. The IBM STEM 4 Girls program is designed, funded and presented by IBMers to help create awareness and connection to real life applications of science, technology, engineering and mathematics for young girls.

The program is designed to include content covering all parts of STEM + Art. Workshops include Design Thinking sessions, DNA experiments and opportunities to learn and ask questions about IBM’s Watson, The Internet of Things and cognitive computing. Girls gain experience with circuits and robotics as well as coding. Participants learn about engineering through hands on challenges such as tower building and shoe design. And let’s not forget the focus on self-esteem and communication which are integral to ensuring girls have the confidence and belief in themselves to pursue what typically is considered “for boys”.

The IBM STEM 4 Girls initiatives have been so popular that they fill up quickly and organizers have had to offer a second event the following day. Comments from the girls are eye-opening.

“I would speak up so men and women are equal.” — Participant in Edmonton

“I learned that girls can make a difference.” — Participant at Toronto event

“I signed up for robotics club at school – and I only did because I went to IBM Camp and knew that I could do robotics.” — Participant from Calgary

Follow #IBMSTEM4GIRLS and #IBMSTEM to see what great things are being accomplished through this initiative.

* Statistics from the last 25 years

• Decline in females working in computer science and math occupations (35% to 26%)
• Insignificant change in # of females in engineering occupations (9% to 12%)
• Women still earn 75-80% of what men earn
• Gender biases exist and begin at grade 6 and drive girls away from STEM and the social perception of STEM has not changed – “it’s for boys”
• Digital literacy is missing from existing curricula across Canada
• Females make up only 22% of current STEM fields

Results:

• Significant shortage of skilled people to fill rapidly growing, well paid STEM job opportunities
• Less diverse workforce = less innovative solutions, less profitability
• Future generation of women missing out on the future’s best job opportunities

For more information, contact
Krista Shibata, Leader of the Women in Technology Initiative at IBM Canada
at krista.shibata@ca.ibm.com
# IBM Canada K-12 Education

## Your team for educational solutions

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## NATIONAL HOTLINE

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