

Draft I&T Strategy
2019-2022

For Consultation &
Review



Information & Technology Strategic Plan

- Plan focuses on organizational wide use of technology
- This is an improvement plan not an exhaustive list of every IT initiative or project
- Owned by all with CIO responsible for execution
- Focused on next 3 years

Strategic Inputs

- ✓ EY Government Line-by-line spending report
- ✓ Auditor General's Report
- ✓ MYSP
- ✓ BLIP
- ✓ 2010/16 IT Strategy
- ✓ Funding Announcements
- ✓ Top EDU trends
- ✓ SWOT analysis

- ◇ **CYBER SECURITY REVIEW**
- ◇ **IT ASSET AUDIT**

- Education Council
- Deep dives session
- ICT department input

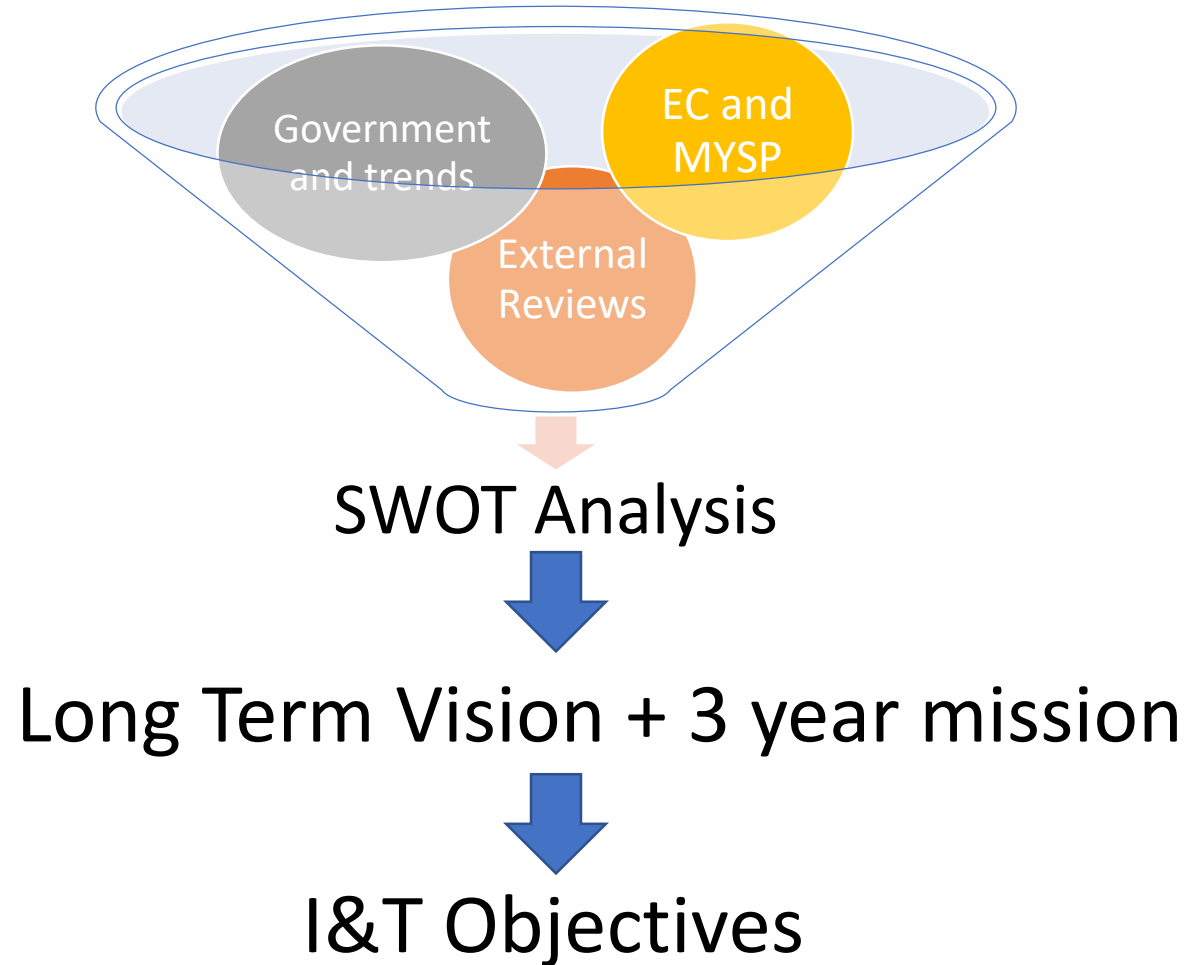
Benchmarking (x12)



○ **GARTNER ANALYST**

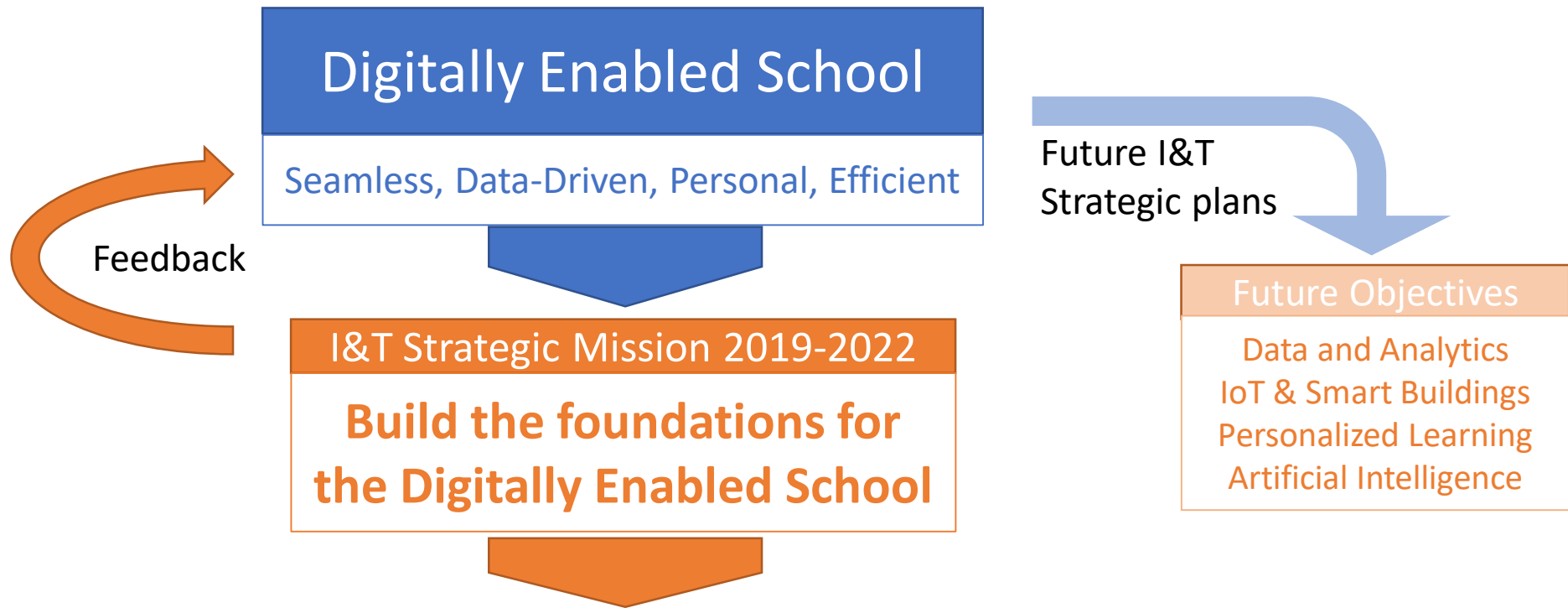


Setting our course



A vision for the
**Digitally
Enabled
School**

The future digital TCDSB school is completely enabled by **seamless technology and data** to deliver **high-quality, personalized, and efficient educational services** to students and parents. It uses modern tools and teaching methods to **adapt to individual students** and ensure their well-being , **allow parents to engage effortlessly** in the education system, and foster a nurturing and **strong Catholic community**.



By 2022, we will build the foundation of the Digitally Enabled School by focusing on the following objectives

I&T Objective 1		I&T Objective 2		I&T Objective 3		I&T Objective 4		I&T Objective 5	
<u>Increase digital communications</u> to improve parent and student engagement		<u>Adopt modern workplace tools</u> to free employee time for high value work		<u>Enhance cyber security</u> to safeguard student and family privacy		<u>Deploy foundational enterprise systems</u> to drive efficiency and prepare for the future		<u>Improve IT efficiency</u> to ensure maximum impact of limited funding	
Goal	Double our use of online communications	Goal	50% of employees will use modern workplace technology weekly	Goal	Improve our cyber security maturity score to 2.7	Goal	Deploy and adopt at least 2 major enterprise systems	Goal	Improve both our IT operations and PPM score to 2.5

Increase digital communications
to improve parent and student engagement

By 2022, we will double our use of online communications to parents and students

Deploy a new modern public website

To encourage digital communications with parents and the community the website needs to be easy to use and find information, have a modern look and feel that is aligned with the TCDSB brand, be easy to update and maintain for departments and schools, and have consistent and up to date content.

Digitize school and Board newsletters and calendar of events

To improve our reach and gain better insights into how people consume information we will aim to deliver all school, Board, and other major communications, such as school calendars, in a digital format rather than by paper.

Deploy a digital portal for parents and students

To improve parent engagement in student learning, we will source and deploy a parent portal that can be used to review achievement, keep up-to-date on classwork or learning materials, and provide a consistent method to communicate with teachers

Offering IT support to parents and students

If parents and students are to use more digital tools and platforms to engage in the school system, they will need a support channel that is available when they are available. To achieve this, we will offer technical support for parent in the day and evenings.

Adopt modern workplace tools
to free employee time for high value work

By 2022, 50% of employees will use modern workplace technology weekly

Replace our office systems with modern cloud-based solutions

To reduce the burdens associated with using outdated workplace systems (email, word-processing, spreadsheets, file sharing, note taking, etc) we will deploy the latest cloud based office systems that will provide a unified and seamless experience for every day computing and office work.

Deploy web meeting technology

To reduce the need for face-to-face meetings and increase the quality for remote meetings we will deploy updated web based meeting software that will allow employees to see, view, and interact with each other in both small group settings and in larger forums.

Develop a consistent staff training strategy

To increase the adoption of modern workplace tools and encourage their regular use, we will develop a robust training strategy that supports employees in the use of these tools in the most efficient ways possible.

Ensure all employee have access to appropriate devices

In order to use modern workplace tools (and future academic tools) employees need consistent access to up to date devices. We will develop a strategy that will allow all employees a way to get regular and consistent access to these devices.

**Enhance cyber security
to safeguard student and family privacy**

By 2022, we will improve our cyber security maturity score to 2.7 on the Gartner IT Score scale

Create a dedicated IT security team and leadership structure

To focus our cyber security efforts we will create roles within the ICT department dedicated to cyber security and risk that will focus on system wide initiatives and improvements.

Develop a formal and on-going security awareness campaign

To help defend our systems and encourage employees to make sound professional choices grounded in cyber security best practices, we will create a robust cyber security campaign that will improve awareness for all staff and teachers.

Develop robust IT security policies

To provide clear direction to all employees about their cyber security responsibilities, in consultation with our union partners, we will develop a set of cyber security policies that will focus on overall security practices, identity and access management, and the selection and management of cloud-based classroom and workplace technologies.

Formalize organization-wide IT security incident response plan

While our effort may reduce the impact and likelihood of cyber security events, we know that some will still happen. To prepare for future events, we will develop a clear organization wide cyber security response plan that will consider technology, privacy, and communication factors.

**Deploy foundational enterprise systems
to drive efficiency and prepare for the future**

By 2022, we will deploy and widely adopt at least 2 major enterprise systems

Create dedicated implementation teams

To focus our efforts and ensure full value for our major investment in enterprise systems we will create temporary, but dedicated and well supported cross-functional implementation teams.

Implement a new cloud-based Student Information System

To lay the foundation for other school based technologies (case management, parent portal, etc) and reduce operational risk, we will replace our aging Student Information System with a modern cloud-based system and adopt the associated best practices.

Implement a new cloud-based HR recruitment system

To improve our recruitment efforts and improve the efficiency of the hiring process, we will deploy a new modern and integrated cloud-based HR recruitment system that will replace dated paper-based processes with modern data-drive digital hiring practices.

Rationalize and reduce the need for the development of custom software

To reduce our technical debt and ensure the future sustainability of our core enterprises systems, we will reduce, as much as possible, our internal development of custom software and instead focus our efforts on well integrated off-the-shelf systems.

**Improve IT efficiency
to ensure maximum impact of limited funding**

By 2022, we will improve both our IT operations and PPM score to 2.5 on the Gartner IT Score scale

Develop a formal IT governance and decision-making structure

To ensure IT investment and resource decisions are made in the most efficient and effective manner possible, we will create a cross-functional management decision-making structure for organization wide technology issues and projects.

Reorganization the IT department for efficiency

To help the ICT department operate as efficient and effectively as possible, we will reorganize the ICT department and operating model to focus on IT planning, delivery, and operations as well as support the implementation of the overall I&T Strategy.

Setup a formal PPM practice and team

To improve the planning and delivery of IT projects, we will develop a robust and light-weight project and portfolio management practice and setup dedicated project roles to oversee IT projects across the organization.

Standardize core IT operations, metrics, and targets

To ensure consistent and clear levels of service, we will standardize and measure our core operational process of incident, problem, request, and change management and deliver measured results against organizationally set targets (SLAs).

Develop a clear asset ordering and refresh strategy




















To support consistent and equitable access to technology in the classroom we will develop a realistic asset refresh strategy and policy as well as a robust ordering and support channel to help our schools make effective choices in a sustainable manner.

Deferred/Long-term Strategic items

These items were discussed but ultimately decided to defer to future iterations of the I&T Strategy

Item	Reason
Data and Analytics	<ul style="list-style-type: none">• Deep dive discussion revealed that people are mostly focused on ease of use and not yet on developing new data insights• We need to complete the core systems updates first and we don't have capacity to develop both simultaneously• Some improved capabilities with new SIS and HR systems
Internet of Things (IoT) and building technology	<ul style="list-style-type: none">• We need to complete the core systems updates first which includes developing a security strategy and data integration (with SIS) before investing heavily in IoT• Government funding for this in new builds is unclear• Stop solution can continue for now but there will not be a major strategic thrust for next 3 years
Advanced Classroom and Teaching technologies (digital assessments, AI, VR/AR, personalize learning, etc)	<ul style="list-style-type: none">• There was not a specific ask for this. Most of feedback we got focused on easy of use of current technologies not new capabilities• Having the a new SIS in place is critical to the success of future classroom tech• Teachers don't have devices to utilize such technologies• Security awareness needs to improve before we develop these capabilities

Linking Objectives to MYSP

	Increase digital communications	Adopt modern workplace tools	Enhance cyber security	Deploy foundational enterprise systems	Improve IT efficiency
Fostering Student Achievement And Well-being					
Inspiring And Motivating Employees					
Providing Stewardship Of Resources					
Enhancing Public Confidence					
Achieving Excellence In Governance					

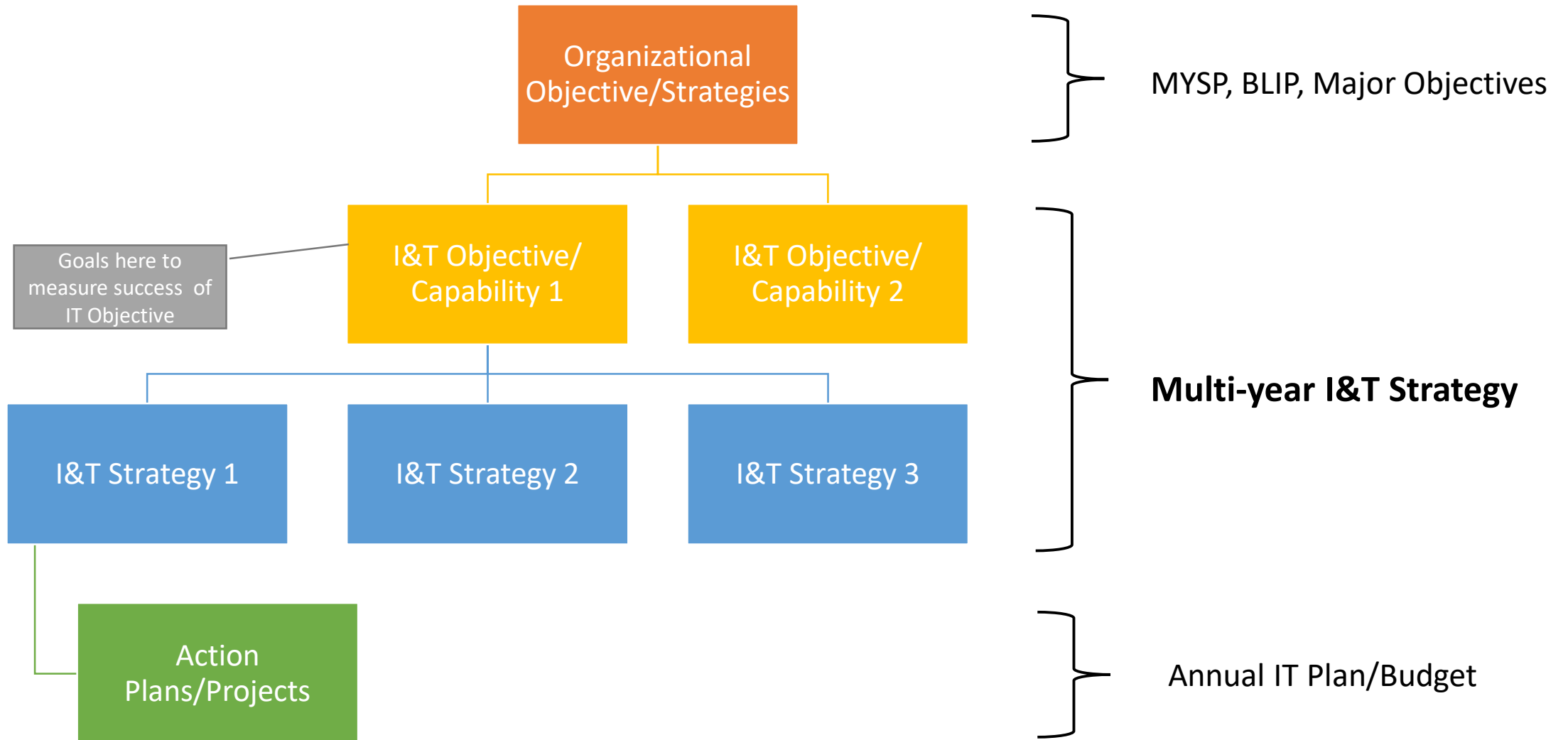
Next Steps

- Incorporate Audit Committee feedback
- Review changes with at executives
- Schedule consultations with Unions and parents groups (CPIC/OAPCE)
- Format final report
- Review and approved by Board in September

Questions and Answers

Additional Background

I&T Strategic Plan – Linking our Plans



Future of work and societies

We Will Increasingly Be Focused on "Human Work"

The future of work: The return of **highly-human-only** skills

- Subjective reasoning
- Imagination
- Negotiation
- Questioning

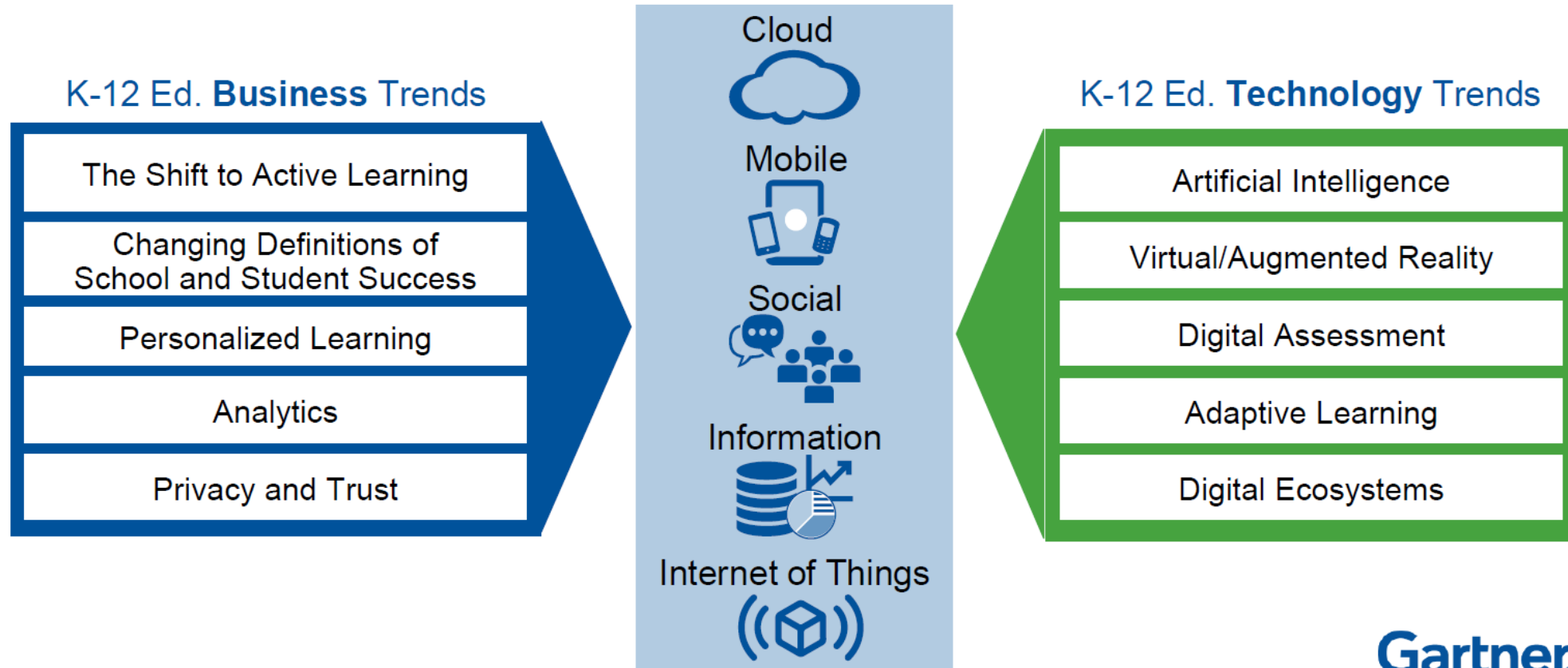


- Design
- Storytelling
- Connecting
- Creativity
- Empathising

Top Trends

The Gartner Top 5 K-12 Business and Tech Trends

More Than Aligned: Technology and Business Are Fused



Benchmarking TCDSB IT

	TCDSB	EDU Avg	Gap
<i>Applications</i>	1.9	2.0	5% ↓
<i>Data and Analytics</i>	2.0	2.2	9% ↓
<i>Enterprise Architecture and Innovation</i>	1.9	2.2	14% ↓
<i>Infrastructure and Operations</i>	1.9	2.3	17% ↓
<i>Program and Portfolio</i>	1.6	2.6	38% ↓
<i>Risk and Security - BC/DR</i>	1.4	2.1	33% ↓
<i>Risk and Security - Identity and Access</i>	1.7	2.2	23% ↓
<i>Risk and Security - Information Security</i>	2.2	2.7	19% ↓
<i>Privacy</i>	2.5	2.5	0% ↔
<i>Procurement/Vendor Management</i>	2.1	3.0	30% ↓
<i>Strategy and Execution</i>	1.6	2.3	30% ↓

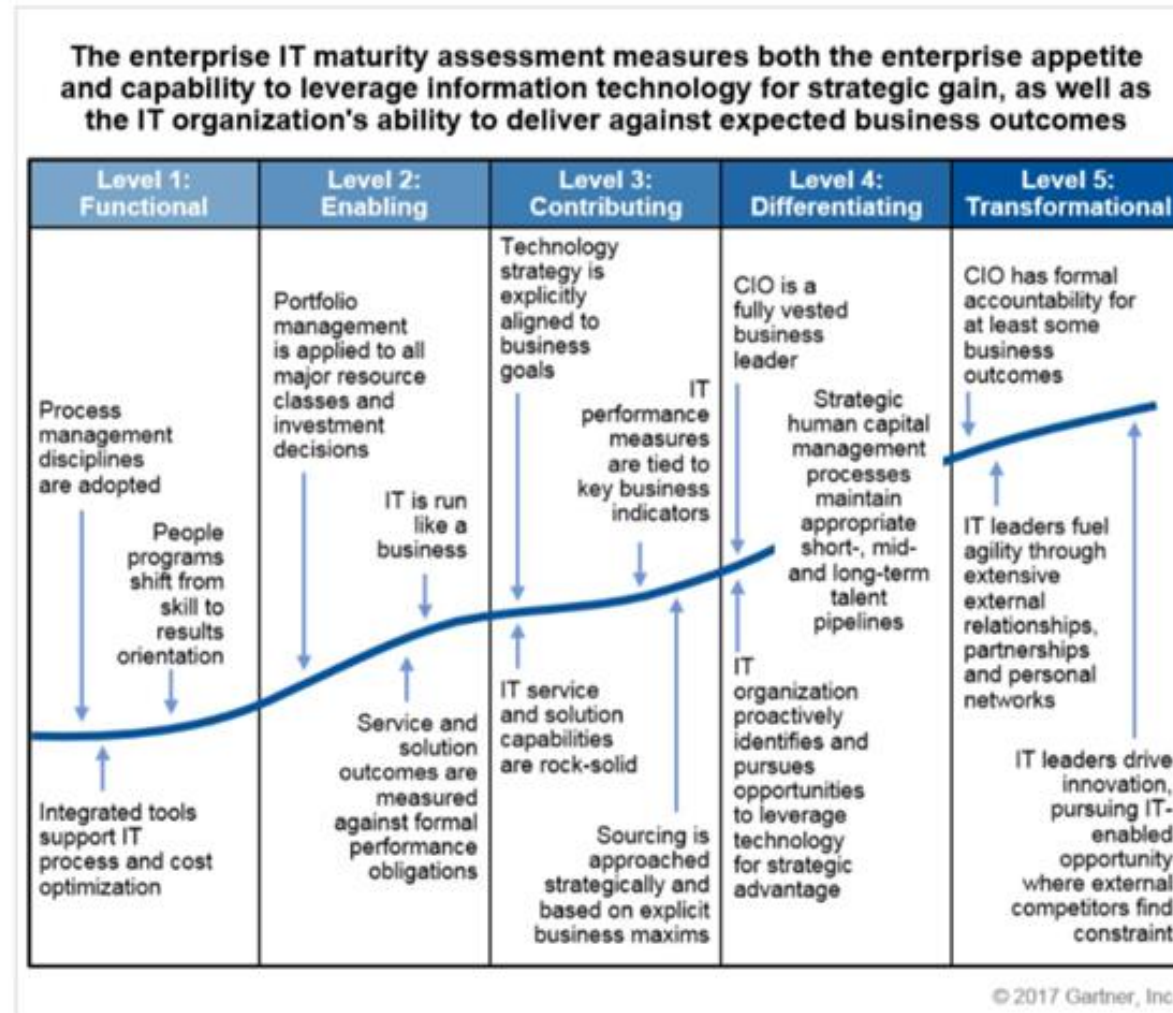
} Maturity Benchmarks

	TCDSB	EDU Avg	Gap
<i>Total IT spend as a % of Budget</i>	2.1%	5.7%	171% ↓
<i>Total IT spend per employee</i>	\$1,369	\$8,206	499% ↓
<i>IT employees as a % of total employee</i>	0.8%	4.9%	512% ↓
<i>Run</i>	93%	75%	19% ↓
<i>Grow</i>	6%	17%	64% ↓
<i>Transform</i>	1%	8%	87% ↓

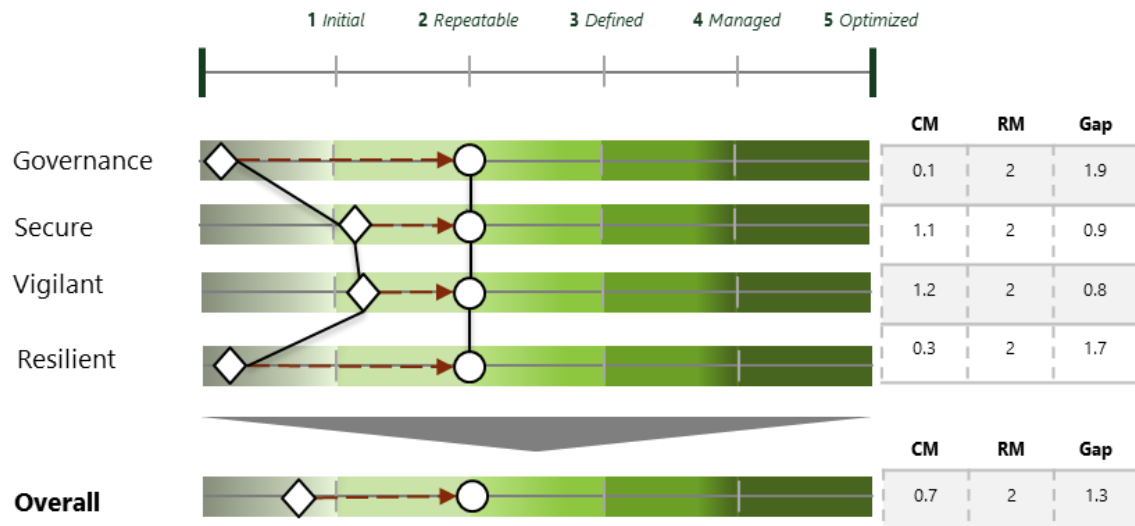
Financial Benchmarks }

Benchmarking TCDSB IT

Figure 1. Enterprise IT Maturity Levels



Cyber Security Review

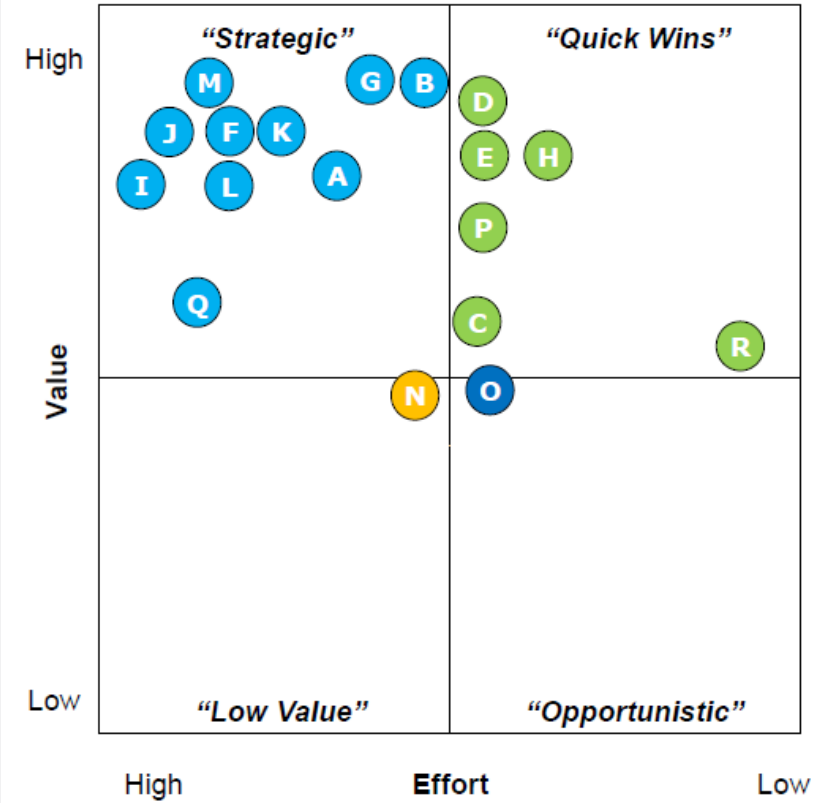


Domain	Proposed Initiative	Cost		Resource	Timeline	Residual Risk	Priority
		One-time	Recurring				
Governance	Cyber Security Governance (CG)	\$\$	\$\$	2.25 FTE's	6-12 Months	High	High
Governance	Cyber Security Awareness Campaign (CA)	\$	\$	0.25 FTE	>6 Months	High	High
Secure	Asset Management and Protection (AMP)	\$\$	\$\$	0.5 FTE	>6 Months	High	High
Secure	Data Loss Prevention (DLP)	\$\$	\$\$	0.5 FTE	>6 Months	High	High
Secure	Identity and Access Management (IAM)	\$\$\$*	\$\$\$*	4.25 FTE*	<12 Months*	High	Medium
Vigilant	Security Operations (SO)	\$\$	\$\$	1 FTE	>6 Months	High	Medium
Resilient	Incident Response (IR)	\$	\$	0.25 FTE	>6 Months	High	High
Resilient	Business Continuity Plan and Disaster Recovery (BCDR)	\$	\$	0.25 FTE's	>6 Months	High	High

2016 Deloitte IT Review

Initiative	Initiative Name	Value	Effort
A	Establish the Governance Structure	H	M
B	Introduce a Tech representative at the Director's table	H	M
C	Develop the Project Portfolio Strategy	M	M
D	Develop a Cloud First Strategy	H	M
E	Develop an Employee Resourcing Strategy and Plan	H	M
F	Establish an IT Project Management Office (PMO)	H	H
G	Establish an Enterprise Architecture Function	H	M
H	Establish an ITS Support Model	H	M
I	Review the current software strategy	H	H
J	Develop a Document & Record Management Strategy	H	H
K	Enable a Digital mobility/access anywhere strategy	H	H
L	Develop an enterprise data analytics culture	H	H
M	Introduce an Enterprise service management system	H	H
N	Implement a hardware lifecycle management policy	M	M
O	Implement a Disaster Recovery / Business Continuity Strategy	M	M
P	Implement a software / hardware vitality plan	M	M
Q	Implement an IT Asset Management Solution	M	H
R	Implement a communication policy	M	L

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H = High; M = Medium; L = Low

Review with Education Council

Major Themes	IT Strategy	MYSP	BLIP
Using modern teaching and learning tools to improve student outcomes	10	130	20
Help employees make the best use of their limited time	8	0	8
Manage and analyze data to support teaching/learning and administration	8	128	24
Improving 2-way communications to parents, students, and the community	6	24	36
Improve staff collaboration and knowledge sharing to expand best practices	6	84	66
Hiring and onboarding staff	6	42	0
Preparing for "distant" future technologies	2	0	2
Quality of curriculum/academic delivery in e-learning	1	0	0
Student Safety	1	0	0
Intergrating IT and Building systems	1	1	0
Equity for students	1	5	1

- With EC's support we completed a deep dives on the top 6 above

Deep dives with Education Council

Questions Asked

- What do you wish you could do today that you can't do?
- What things are harder today than they should be?
- What would be a realistic goal in the next 3 years
- What risks do you see in achieving this goal?

General Findings

- The comments from the topics of *managing and analyzing data* and *knowledge sharing* were mostly about working efficiently.
- Many of the external communications issues are focused on the public website
- Hiring and onboarding staff was focused mostly on the hiring process
- Modern teaching tools was mostly about access to standard technology

Digital SWOT Analysis - External View

Opportunities

- Government interest in efficiency and digital
- Demand for digital solutions
- Student comfort with technology
- Willingness to collaborate with other public and private firms
- Teachers interest in modern teaching tools
- Rapid technology adoption in society

Threats

- School Board/Gov Funding
- Lack of long-term commitments
- Localized/school thinking
- Vendor change (SIS, SAP, etc)
- Too many technology options
- Organizational change resistance
- IT staffing demands
- Labour relations
- Parental choice (Public, Private, etc)

Digital SWOT Analysis - Internal View

Strengths

- Institutional Knowledge
- ICT Staff commitment
- Growing and large school Board
- Internal interest in technology
- School connectivity
- Student personal access to technology
- Cross district collaboration

Weakness

- Dated systems and associated processes
- IT decision making and planning
- Cyber Security practices
- Easy access to data across the enterprise
- IT training and professional development
- Digital communications with stakeholders
- Consistent project execution
- Central coordination of activities