

Business Technology Management (BComm)
Ted Rogers School of Management (TRSM)
FINAL ASSESSMENT REPORT (FAR)
Approved by Senate April 4, 2017

EXECUTIVE SUMMARY

The Business Technology Management program is offered in multiple formats:

1. Full-time Degree: Regular stream, Co-op, 2-year CAAT and Direct Entry
2. Part-time Degree: Regular stream, 2-year CAAT and Direct Entry

The Ted Rogers School of IT Management is the largest school in Canada to offer the Business Technology Management (BTM) program, which cohesively binds business management to information and communication technology (ICT). In 1999, the convergence of Business Information Systems (BIS) and Administration and Information Management (AIM), established the School of ITM, to offer students a Bachelor of Commerce Degree. In 2010, The Ted Rogers School of Information Technology Management initiated a change to coincide with the evolving needs of the economy, by changing the program focus from ITM to BTM. Over the past five years, the School revamped the curriculum structure and developed a new curriculum to address key competencies, such as critical thinking, effective communication and problem solving, to enhance our students' chances for academic success. The BTM program is on a rise and its utility to the economy of Canada continues to increase as the BTM brand is becoming more recognizable than ever before.

The Ted Rogers School of IT Management is a dynamic and vibrant academic unit within TRSM. The program prepares students for careers focused on critical application and management of information and communication technologies (ICTs). Students learn core business management concepts in addition to the principles driving ICT innovation. The program is dedicated to teaching students how to capitalize on business and technology opportunities and to implement business strategies using ICT solutions. The School provides students with ample opportunity to gain 'hands-on' experience and experiential learning, as it is embedded within the curriculum. The BTM program's current trajectory indicates tremendous growth reflecting the intense societal need for relevant skills at the intersection of ICT and management. The synergy of our multi-faceted curriculum is designed to provide a total educational experience to our students and prepare them for future careers and lifelong learning.

Graduates of this program are hybrid business and ICT specialists that can define business objectives, identify technological options to meet the needs of the working organization, develop appropriate systems and implement the solutions effectively. The BTM program is an interdisciplinary program of business and information technology and it is radically distinctive from any other School within TRSM. Consequently, the BTM program is very successful as evident by the strong demand and enrollment levels that continue to increase. The BTM program has one of the most successful co-op programs at Ryerson University and it continues to generate demand amongst students. Substantial experiential learning opportunities are provided to students, via the capstone project and co-op program, which requires integration of all the learning outcomes.

The Ted Rogers School of IT Management is a leader in SRC activities within TRSM and continues to be represented by highly-qualified faculty members. The School will continue to strengthen industry ties and build external relationships with partners and collaborators to further enhance the learning experiences for our graduates.

The increasing student to faculty ratio and low admission requirements is of concern as it can threaten the quality, sustainability and delivery of the BTM program. In relation to these findings, the School intends to

increase the quality intake of students by incrementally changing requirements. Additionally, the curriculum structure will continue to be reviewed regularly to identify and address gaps to ensure relevancy.

Based on the findings of this report, the Ted Rogers School of IT Management created a developmental plan to address seven key objectives addressing:

- Full-time Faculty Complement
- Student Quality
- Curriculum Enhancement
- Experiential Learning Opportunities
- Student Engagement for Learning and Career Success
- Diversity in the Community
- Industry Ties
- The Competition

1. INSTITUTIONAL SYNTHESIS OF THE EXTERNAL EVALUATION AND INTERNAL RESPONSES AND ASSESSMENTS

1.1 PEER REVIEW TEAM REPORT – School of Information Technology Management (BTM)

The peer review team was comprised of Dr. Jeffrey Parsons, University Research Professor, Memorial University of Newfoundland, and Dr. Richard Watson, J. Rex Fuqua Distinguished Chair for Internet Strategy, University of Georgia. The site visit took place on May 30-31, 2016. The team met with the following individuals or groups: Director of BTM, Program Peer Review (PPR) Representative, VP Academic, Dean of the Ted Rogers School of Management (TRSM), BTM faculty and staff, BTM curriculum committee, current BTM students, BTM alumni, and BTM Program Advisory Council (PAC).

The BTM program is addressing the national need for a well-educated and appropriately skilled ICT workforce to support economic growth and innovation. The students interviewed reported the program helps them meet their aspirations, and faculty interviewed expressed a strong commitment to the students and program. The staff seem particularly devoted to helping students graduate. BTM is a quality program serving the needs of students and employers in the Greater Toronto Area (GTA).

Notwithstanding this overall positive assessment, one key concern that emerged from meetings with several stakeholders is the deteriorating trend in student faculty ratios in ITM. This will likely need to be addressed soon to maintain program quality. As the largest BTM program in Canada, Ryerson University has a distinct opportunity to be the national standard bearer for BTM program quality, rigor, and innovation.

National prominence

To achieve a national reputation, BTM will need to be singularly nurtured by recruiting two to three faculty with national or international reputations in areas central to the BTM course offerings.

Quality improvement

The scores of students entering BTM are below the TRSM average. BTM can either raise entry level standards, which will result in reduced enrolments, or maintain current enrolment policy but enforce standards consistently across core courses to ensure minimal quality standards are maintained.

Laptops and open source

All students entering the BTM program should be required to have a laptop that they can bring to class. The BTM program should be predominantly based on open source, cross-platform software. Open source software also fits the entrepreneurial goals of Ryerson and resources limits of small companies participating in the capstone project.

Tacit Knowledge

Courses should be designed to focus on using faculty members' tacit knowledge to build students' problem solving skills.

Branding

The school is called ITM and the program is BTM. Consistent branding helps, especially for building a reputation around BTM. As part of branding and presenting a market attuned image, ITM should review the titles of all courses.

Curriculum

- ITM should consider establishing a dual core for BTM: (1) business systems problem solving, and (2) business analytics.
- ITM should consider streamlining the many electives based on program goals will lead to a more clearly articulated program focus.
- ITM should consider introducing R, with the RStudio IDE, as the first programming language to build skills in data handling, visualization, and data analytics as well as teaching the fundamentals of programming. ITM should consider adopting a language such as Swift as the OO language in the curriculum. ITM should build expertise in the Internet of Things (IoT), with possible applications in areas such as sustainability, energy efficiency, and smart cities that fit with Toronto's needs.
- Students should be given greater assistance in finding a capstone partner.
- The co-op program should be a forefront curriculum design and scheduling decisions because it is a strength of the BTM program and potentially of TRSM.

Listening to the market

ITM should continue to build skills in listening and reacting to the market. We advise that it strengthen alumni connections and expand the Program Advisory Council (PAC).

Feedback on Evaluation Criteria

The self-study report comprehensively covers the issues raised by the evaluation criteria. The review team took a strategic perspective because it recognized that operational issues were generally well-handled and the BTM program was successful when judged by market standards (i.e., students are getting appropriate jobs at good salaries).

1.2 PROGRAM RESPONSE TO THE PEER REVIEW TEAM REPORT

The Peer Review Team (PRT) team has an overall positive assessment of the program in meeting the needs of the GTA and Canadian economy. They believe that Ryerson University has a distinct opportunity to be the national standard bearer for BTM program quality, rigor, and innovation and make their recommendations accordingly. We are very excited about this outlook and agree with the peer team regarding the general outline of what needs to be done to raise BTM (and thus TRSITM) to national and possibly international prominence.

We are looking forward to support from TRSM and Ryerson administration in:

- Decreasing the size of the program;
- Increasing admission standards to the BTM program;
- Granting and funding new senior and junior tenure stream positions;
- Finalizing, funding and implementing IT lab virtualization plans; and
- Making changes in course calendar easier thus enabling responsiveness to changes in the market.

1.3 DEAN'S RESPONSE TO THE PEER REVIEW TEAM REPORT AND PROGRAM RESPONSE

Both the PRT suggestions and the BTM responses offer insightful recommendations for continuing the effort to build a high quality, innovative program with potential to be viewed as a national leader in business technology education. TRSM remains supportive of the School's plans, subject to university fiscal constraints, as we move forward on a faculty-wide basis.

2. SIGNIFICANT STRENGTHS OF THE PROGRAM

2.1 The Business Technology Management Program

Students who successfully complete the degree requirements will receive the designation BACHELOR of COMMERCE, BUSINESS TECHNOLOGY MANAGEMENT.

Full-time Degree: Regular stream, Co-op, 2-year CAAT and Direct Entry

Part-time Degree: Regular stream, 2-year CAAT and Direct Entry

The BTM program is offered by the School of Information Technology Management (ITM), and is accredited by the Association to Advance Collegiate Schools of Business (AACSB). ITM, the largest school in Canada to offer a Business Technology Management (BTM) program, is a leader in providing a degree that prepares students to combine two sets of competencies:

Business professionals – knowledge, skills and qualities to lead and support the effective and competitive use of information technologies

Specialized technologists – IT-focused professionals who operate at the leading edge of innovation in fields such as energy, life sciences, financial services, government, advertising, education and many other industries.

Graduates of this program are hybrid business and ICT specialists who can define business objectives, identify technological options to meet the needs of the working organization, develop appropriate systems and implement the solutions effectively. BTM's current trajectory indicates tremendous growth reflecting the intense societal need for relevant skills at the intersection of ICT and management. ICT is an essential contributor to the innovation, creativity, productivity and competitive advantages of Canadian businesses.

2.2 Societal Need

According to ITAC (Information Technology Association of Canada), more than 33,500 Canadian ICT firms contribute to goods and services that provide a more innovative and competitive society.¹ ITAC states that the "ICT sector generates one million jobs directly and indirectly and invests \$4.8 billion annually in R&D, more than any other private sector performer."² As of early 2015, there were approximately 811,200 ICT professionals employed in Canada.³ It is reported that the demand for ICT professionals continues to grow and has created competitive recruitment efforts amongst employers seeking ICT talent. The industry is cognizant of the increasing demand and continues to seek ICT professionals with analytical, interpersonal, technical and leadership skills.

The School of ITM is a leading participant in the work of the Canadian Coalition for ICT Skills (CCICT), currently called Information Technology Association of Canada (ITAC), which represents major Canadian employers and industry associations that rely on graduates with ICT skills. CCICT was focused on increasing the number of graduates with strong skills in both management and ICT. The BTM program was formulated based on the mismatch between the skills of many graduates and the skills required by employers.

According to the employer survey conducted for this review, many employers agree that the program successfully prepared graduates with the right set of skills needed to pursue a career as an ICT professional. Some of the attributes cited were oral communication, critical thinking and problem solving skills. Graduates from the BTM program are employable in virtually every industry sector, including but not limited to banking, health care, retail, education, ICT and arts.

¹ ITACT Talent, 2015 - <http://itactalent.ca/about-us/>

² *ibid*

³ DAC, 2015 - <http://www.digcompass.ca/labour-market-outlook-2015-2019/2-0canada/>

Due to the anticipated employment growth, imbalances in the demand-supply for ICT professionals will affect high demand occupations such as software and computer engineers, graphic designers/illustrators, database analysts, information systems analysts, IT consultants, systems support technicians and computer security amongst other occupations.

2.3 Student Demand

The analysis of the current and anticipated demand supports the need for BTM students with hybrid knowledge in business and ICT. The relevance of the BTM program is confirmed as the ICT labour market will be impacted by excessive demand and shortage of supply. The ICT sector is characterized by a knowledge-intensive workforce. For instance, in 2013, 47.2% of ICT workers had a university degree compared to the national average of 27.4%.⁴ ICT employees are well compensated, with workers earning an average of 48% more than the economy-wide average.⁵ Not only is the demand for educated personnel increasing, the benefits of multiple industry sectors employing ICT professionals and the average annual earnings, provide incentives for graduates.

The increase in the ratio of applicants to registrants is demonstrative of the existing demand for the BTM program; however, a limitation of the data is the inability to distinguish amongst qualified applicants from those who lack admission qualifications. Although the program would like to accommodate for the increasing student body, due to limited resources and to ensure students receive a quality education, the number of students admitted into the program needs to be reduced. The sustainability of the program and the quality of education delivered are impacted by the high student to faculty ratio.

87.7% of students who graduated in 2012 would recommend Ryerson to others. The data provides confirmation that the BTM program is demanding and it provides graduates with skills that can be implemented and transferred into the workplace. Since the BTM program was developed in 2009, 18 post-secondary institutions across Canada are now offering the BTM program. Currently, the Ted Rogers School of IT Management is the largest school in Canada to offer the BTM program.

2.4 Program Learning Outcomes

By the end of the program, students will be able to (not limited to): (1) identify and explain the role of information systems in the globalization of economic and cultural activities (2) explain the technological, social, and organizational components of information systems and how they interact and (3) evaluate the ethical concerns that information systems raise in society and the impact of information systems on societal issues.

By the end of this program, BTM degree graduates will be able to:

Knowledge Area	BTM PROGRAM LEARNING OUTCOMES (LO)	Learning Outcome #
Integrated Learning	Analyze IT-oriented business problems for a company/client (e.g. collect relevant financial and technical information; assess alternatives).	LO1
	Evaluate and apply appropriate solutions to an IT-oriented business problem for a company/client (i.e. compare and contrast options/risks and make recommendations).	LO2
	Produce professional technical reports, providing options and solutions to client situations and if applicable implement solutions.	LO3
IT-Enabled	Plan, manage and control information systems.	LO4
	Graduates will be able to:	

⁴ Statistics Canada, 2014 - https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html

⁵ Statistics Canada, 2014 - https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html

Knowledge Area	BTM PROGRAM LEARNING OUTCOMES (LO)	Learning Outcome #
Business Improvement	Conduct business process analysis (i.e. create business architecture, identify business opportunities, conduct risk assessment, evaluate options and select the best alternative).	LO5a
	Develop improvement plans to integrate people, IT and business strategies in order to improve organizational processes.	LO5b
	Assess current technologies to identify opportunities for adopting new technology.	LO5c
	Apply project management, human and material resources and integrate applicable IT tools and methods to conduct an IT-enabled business solution.	LO5d
Business Fundamentals	Discuss and analyze the processes and structures of a business. (e.g., customer relationships, supply chain management, business structures and organization).	LO6
	Design, describe and maintain effective business models that enhance business strategic goals and decision-making processes.	LO7
Technology Fundamentals	Describe and discuss the major components of an information systems' infrastructure (e.g., networks, internet structures and e-business applications).	LO8
	Identify, understand and evaluate key stakeholder needs for IT solutions.	LO9
	Use, evaluate, and recommend computer software and applications.	LO10
	Analyze IT infrastructure design solutions for organizations.	LO11
	Analyze, design, and use databases for business applications.	LO12
Personal and Interpersonal	Demonstrate proficiency in professional communication within a business context by being able to:	
	Deliver an effective oral presentation for technical and non-technical audiences.	LO13a
	Create well-written documents for technical and non-technical audiences.	LO13b
	Demonstrate behaviour consistent with professional academic integrity and social responsibility in the context of a diverse and complex environment.	LO14

2.5 Program Curriculum and Structure

In the first two years of the program, students build their knowledge and skills on two core foundations: (1) Business (i.e. Marketing, Account, Finance, Human Resources, Law) and (2) ICT (i.e. Systems Analysis and Design, ICT Architecture and Infrastructure, Privacy and Security). In years 3 and 4, students learn to integrate their learning from these core foundations and strategically apply ICT-enabled solutions to business processes. Beyond providing a deep understanding of both business and ICT, the program also places emphasis on building personal and interpersonal skills by providing students with real-life work/employment experience, case studies and in-depth consulting projects with real clients.

BUSINESS TECHNOLOGY MANAGEMENT CURRICULUM (Full-time and Part-time Degree)
YEAR 1

ITM 100 Foundations of Information Systems CMN 124 Communication in BTM GMS 200 Introduction to Global Management SSH 105 Critical Thinking I ITM 107 Managerial Decision Making	ITM 207 Fundamentals of Programming MHR 405 Organizational Behaviour and Interpersonal Skills ECN 104 Introductory Microeconomics QMS 102 Business Statistics I LIBERAL STUDIES (LL)
YEAR 2	
ITM 305 Systems Analysis and Design ITM 301 IT Infrastructure MKT 100 Principles of Marketing ACC 100 Introductory Financial Accounting LIBERAL STUDIES (LL)	ITM 410 Business Process and Design ITM 500 Data and Information Management ACC 406 Introductory Management Accounting LAW 122 Business Law LIBERAL STUDIES (LL)
YEAR 3	
ITM 750 IS Project Management QMS 202 Business Statistics II FIN 300 Managerial Finance I PROFESSIONAL ELECTIVE (<i>Table I</i>) LIBERAL STUDIES (UL)	ITM 706 Enterprise Architecture ECN 204 Introductory Macroeconomics PROFESSIONAL ELECTIVE (<i>Table I</i>) PROFESSIONAL ELECTIVE (<i>Table I</i>) LIBERAL STUDIES (UL)
YEAR 4	
ITM 707 Strategy, Management & Acquisition ITM 90A Graduation Project PROFESSIONAL ELECTIVE (<i>Table I</i>) PROF-RELATED ELECTIVE (<i>Table II</i>) PROF-RELATED ELECTIVE (<i>Table II</i>)	ITM 90B Graduation Project PROFESSIONAL ELECTIVE (<i>Table I</i>) PROF-RELATED ELECTIVE (<i>Table II</i>) PROF-RELATED ELECTIVE (<i>Table II</i>) LIBERAL STUDIES (UL)

PROFESSIONAL TABLE I: BTM CORE ELECTIVES			
Course Code	Course Name	Course Code	Course Name
ITM 200	Fundamentals of Programming	ITM 605	Client Server Applications
ITM 315	Network Administration	ITM 610	Database Administration
ITM 330	Supply Chain Process Architecture	ITM 612	Knowledge Management / Learning Technologies
ITM 350	Concepts of eBusiness	ITM 617	Physical Database Design and Implementation
ITM 360	Establishing an eBusiness Operation	ITM 618	Business Intelligence and Analytics
ITM 407	Info Tech, Ethics and Society	ITM 702*	Summer Term Practicum
ITM 430	System Design and Implementation	ITM 703	Current Issues in Information Systems Management
ITM 445	Multimedia in Business	ITM 704	Wireless and Mobile Communications
ITM 501	Decision Analysis	ITM 720	Business Models and Game Design
ITM 505	Managing Information Systems	ITM 724	Consulting Skills for IT Professionals
ITM 513	Adv. Infrastructure Deployment and Management	ITM 732	Switching and Routing Laboratory
ITM 600	Data Communications Network Design	ITM 733	Research in IT – Independent Study
ITM 601	Advanced Business Process Methods	ITM 805	Special Topics in IT Infrastructure
ITM 602	Configuring and Implementing ERP Apps	ITM 820	Information Systems Security and Privacy

*ITM 702 is not available to students in the co-operative or part-time program

The calendar revisions for 2015-2016 will include the following course deletions: ITM 602, ITM 702, ITM 704, ITM 720, ITM 724 and ITM 732. A course in ICT and diversity is in the development phase (to be offered in Winter 2016), as this is becoming an increasingly popular topic in the field of ICT.

The School is also responsible for offering ITM 102: Business Information Systems I to students enrolled in Business Management (regardless of their declared major), ITM 595: Auditing of

Information Systems and ITM 696: Accounting Information Systems. Students in the BTM program are restricted from enrolling into these courses, as they are geared towards student outside of ITM and therefore, they do not count as professional electives.

2.6 Courses to Program Outcomes

Key highlights analyzed from the curriculum mapping process include the following:

- The BTM program has ensured that all of the intended outcomes are adhered to in the core curriculum (required courses) of the BTM program.
- Each learning outcome is introduced, reinforced or requires proficiency, all of which are gradually achieved through progression in the program.
- ITM core electives are primarily centered on reinforcing concepts or creating proficiency. This is relevant as these courses are designed to enable students to seek more depth in an area of interest within the realm of IT-enabled business analysis and solutions.
- All of the learning outcomes are successfully mapped to the Undergraduate Degree Level Expectations.
- ITM 700/800 and ITM 90A/B address all of the program outcomes at a level of reinforcement or proficiency. The goal of the capstone course is to help students learn to integrate and apply knowledge gained from the multi-disciplinary curriculum and vast range of IT courses (in the preceding academic years).
- A notable difference between ITM 700/800 and ITM90A/B are LO9, LO13a, LO13b and LO14. ITM 700/ITM 800 creates proficiency for the specified learning outcomes; however, ITM 90A/B creates reinforcement. As ITM 90 A/B is the ‘new’ capstone course, this should be reviewed to determine if these learning objectives should be developed at a degree of proficiency.
- Experiential learning is in its highest form as proficiency in the capstone course. BTM co-op students are academically strong and perform at a high rate of proficiency, especially in the capstone course, providing the skills necessary for transition from the academic world to the job market.

2.7 Undergraduate Degree Level Expectations

During the 2014-2015 academic year, BTM’s fourteen (14) learning outcomes (LO) were mapped to the six Undergraduate Degree Level Expectations (UDLEs).

BACCALAUREATE/BACHELOR’S DEGREE: HONOURS

<p>This degree is awarded to students who have demonstrated:</p> <p>1. Depth and Breadth of Knowledge</p> <p>a) a developed knowledge and critical understanding of the key concepts, methodologies, current advances, theoretical approaches and assumptions in a discipline overall, as well as in a specialized area of a discipline LO3, LO6, LO7, LO8, LO9, LO10, LO11, LO12</p> <p>b) a developed understanding of many of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines LO3, LO5a, LO5c, LO5d, LO6, LO7, LO8, LO14</p> <p>c) a developed ability to: i) gather, review, evaluate and interpret information; and ii) compare the merits of alternate hypotheses or creative options, relevant to one or more of the major fields in a discipline LO3, LO1, LO2, LO5a, LO6, LO8, LO10, LO11, LO12</p> <p>d) a developed, detailed knowledge of and experience in research in an area of the discipline LO1, LO2, LO3, LO5a, LO5c, LO6, LO8, LO11, LO12</p> <p>e) developed critical thinking and analytical skills inside and outside the discipline LO1, LO2, LO5a, LO5b, LO5c, LO4, LO6, LO8, LO9, LO11, LO12</p> <p>f) the ability to apply learning from one or more areas outside the discipline LO1, LO2, LO3, LO5b, LO5d, LO7, LO14</p> <p>2. Knowledge of Methodologies</p> <p>an understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to:</p> <p>a) evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques; LO1, LO2, LO4 LO5b, LO5c, LO5d, LO10, LO11, LO12</p> <p>b) devise and sustain arguments or solve problems using these methods; and LO1, LO2, LO3, LO5b, LO5c, LO5d, LO7, LO9, LO10, LO11, LO12</p>
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<p>c) describe and comment upon particular aspects of current research or equivalent advanced scholarship. LO2, LO3, LO8, LO9, LO10, LO11, LO12</p>
<p>3. Application of Knowledge a) the ability to review, present and critically evaluate qualitative and quantitative information to: i) develop lines of argument; ii) make sound judgments in accordance with the major theories, concepts and methods of the subject(s) of study; iii) apply underlying concepts, principles, and techniques of analysis, both within and outside the discipline; iv) where appropriate use this knowledge in the creative process; and LO1, LO2, LO3, LO5a, LO5b, LO5d, LO4, LO11, LO12 b) the ability to use a range of established techniques to: i) initiate and undertake critical evaluation of arguments, assumptions, abstract concepts and information; ii) propose solutions; iii) frame appropriate questions for the purpose of solving a problem; iv) solve a problem or create a new work; and LO1, LO2, LO3, LO4, LO5d, LO6, LO10, LO11, LO12 c) the ability to make critical use of scholarly reviews and primary sources. LO3, LO6, LO7, LO8, LO9, LO10, LO11, LO12</p>
<p>4. Communication Skills ... the ability to communicate information, arguments, and analyses accurately and reliably, orally and in writing to a range of audiences. LO1, LO3, LO13a, LO13b, LO14</p>
<p>5. Awareness of Limits of Knowledge ... an understanding of the limits to their own knowledge and ability, and an appreciation of the uncertainty, ambiguity and limits to knowledge and how this might influence analyses and interpretations. LO1, LO2, LO3, LO5a, LO5c, LO5d, LO7, LO8, LO10, LO11</p>
<p>6. Autonomy and Professional Capacity a) qualities and transferable skills necessary for further study, employment, community involvement and other activities requiring: the exercise of initiative, personal responsibility and accountability in both personal and group contexts; working effectively with others; decision-making in complex contexts; LO1, LO2, LO3, LO4, LO5a, LO5b, LO5c, LO5d, LO6, LO7, LO9, LO10, LO11, LO12, LO13a, LO13b b) the ability to manage their own learning in changing circumstances, both within and outside the discipline and to select an appropriate program of further study; and LO1, LO2, LO3, LO5b, LO9, LO14 c) behaviour consistent with professional and academic integrity and social responsibility. LO14</p>

2.8 Relationship to Current Discipline and Profession

BTM students are exposed to and become familiarized with the normative and legal professional expectations in all aspects of their course-work. The course methods and assessments matrix indicates that many of the instructors used case studies. This form of delivery allows instructors to use real-world examples to discuss the ethical and moral issues facing those who develop and implement ICT-enabled solutions.

Students gain professional practice by extending their knowledge and skills in a practical environment via multiple courses, such as, the capstone course (ITM 90A/B) or the co-operative education program (more information will be provided in the experiential learning section of this report). In the capstone course, students are provided with the opportunity to work with an industry sponsor that is willing to provide a “client” environment. Students are exposed to professional academic integrity in multiple courses, especially in ITM 90 A/B (Graduation project), in which students are required to work with clients on real-world problems. This concept is in alignment with LO14 of the BTM learning outcomes.

ITM 407 (IT, Ethics and Society) was introduced in Fall 2007 to address ethical practices and professional standards, as well as for alignment with requirements of AACSB accreditation. Additional courses that address professional practice (as indicated in LO14) include: ITM 301, ITM 305, ITM 445 and ITM 820 among others.

The BTM program is immersed in a field that fosters continuous change and innovations. The realm of IT is embedded with emerging areas of research and technological innovations that can be implemented. Recent trends in the industry such as social media, systems security and privacy, cloud computing, ICT and diversity and big data are just some of the emerging topics.

2.9 Accreditation

In 2010, the Ted Rogers School of Management, including ITM, received accreditation by the Association to Advance Collegiate Schools of Business (AACSB).

2.10 Teaching Methods and Innovative/Creative Content/Delivery

Technology-based learning is increasingly becoming more significant in comparison to mainstream conventional modes of delivery. Diverse learning methods are being utilized as faculty members are cognizant of the diverse learning styles of students. A variety of teaching methodologies are used such as lecture, lecture discussions, in-class activities, case studies, lab work, capstone project, problem-based learning, demonstrations, seminars and guest speakers. The hybrid mode of in-class and lab exercises is designed to provide students with in-depth, 'hands-on' experience; other features in the mode of delivery are made available including: co-op placement, international exchange opportunities and summer internships. The capstone course provides creative content for students. The report required at the end of the course is all encompassing as students analyze and redesign a business process that needs improvement.

The School will continue to work on its ability to network with external partners to further facilitate the knowledge and academic success of our students. In the past 10 years, over four-hundred (400) organizations from major public corporations have worked with BTM student groups in their capstone course. For further experiential learning opportunities, students can apply for the TRSM International Exchange Program. A proposed initiative is to create a mentorship program in which senior students are linked with industry mentors, providing students with a mechanism to gain knowledge of careers and allowing them to build strong ties within the ICT industry.

2.11 Scholarly, Research and Creative (SRC) Activity

The Ted Rogers School of Information Technology Management is a leading contributor to research activities within TRSM. Faculty members in the School of ITM publish articles in academic journals, present academic research papers at refereed academic conferences, organize research tracks and workshops in conferences, perform editorial and review duties for highly reputable journals as well as secure research funding as part of their SRC activities.

The School also has two active research centres:

The Inclusive Media and Design Centre (IMDC) - designs, creates and evaluates inclusive media.

The Institute for Innovation and Technology Management's (IITM) - finds innovative solutions to real-world technology management problems.

3. OPPORTUNITIES FOR PROGRAM IMPROVEMENT AND ENHANCEMENT WEAKNESSES

- Retention rates are relatively poorer for the ITM program in comparison to TRSM and Ryerson University.
- Admissions requirements are lower compared to the School of Accounting and Finance (SAF); the average grade percentage for incoming students is lower; students may lack the required quantitative background knowledge.
- Alumni relations are weak.

- Student to faculty ratios are high; class sizes are large; it is difficult to provide students with individual attention.
- There is a lack of resources for TAs/GAs and lab intensive components.
- Course mapping indicates that there are redundancies and gaps in course content that need to be re-evaluated; there is a lack of diversity content in the teaching methods and delivery/ assignments.

OPPORTUNITIES

- Connect senior students with industry mentors through a mentorship program.
- Improve admissions criteria to enhance the quality of student intake in the first year of BTM.
- Continue the opportunity to grow existing research productivity by increasing the availability of research support and grants within ITM.
- Increase participation of the industry in the School, both through a renewed Program Advisory Council as well as continuing the focus on industry partnerships that are mutually beneficial and enhance student opportunities.
- Enhance experiential learning opportunities.
- Increase brand awareness.
- Increase female representation at both the student and faculty levels.
- Include emerging topics in courses and teaching methods (i.e. social media, cloud computing).

THREATS

- Maintaining quality, relevancy and currency of courses in an evolving field and economy;
- Increasing competition from new technology and business-focused applied degrees granted by CAAT's within the GTA;
- Insufficient faculty to support the program going forward; and
- Demand for the BTM degree influenced by the cyclical nature of industry fortunes suggesting a higher volatility over time in both the size of the incoming class and its associated incoming grade point average.

4. RECOMMENDATIONS FOR IMPLEMENTATION (DEVELOPMENTAL PLAN)

Priority 1 – Full-time Faculty Complement

ITM needs to hire more tenure-stream faculty to further alleviate the high student to faculty ratio and to maintain the AACSB accreditation standard.

Priority 2 – Student Quality

To build the necessary theoretical and practical knowledge needed by our students and the societal demand for ICT professionals with a specific skill set, a strong foundation in quantitative skills must be present. The School seeks to gradually increase admission standards every year until the same standards as the School of Accounting and Finance are met. By increasing the admissions requirements, the student to faculty ratio may improve, thereby allowing faculty members more opportunity to introduce, reinforce, or create proficiency in the program learning outcomes.

Priority 3 – Curriculum Enhancement

The School needs to carefully balance the technical and managerial courses that are offered. The peer review team suggested that analytics should be one of the career paths our program supports. The faculty has both the potential and interest in developing the analytics area further than a combination of four electives.

Priority 4 – Experiential Learning Opportunities

BTM is unique in its offering of an IT component combined with a business component, thereby creating a distinctive hybridity. Over the next five (5) years, the School seeks to expand the co-op intake. The co-op program should be a focal point in curriculum design and scheduling decisions because it is strength of the BTM program and potentially of TRSM. We will also strive to provide experiential learning opportunities through case competitions and workshops. We are in the process of

virtualizing our PC labs, where they will be accessible to students and faculty alike through internet enabled devices anywhere and anytime.

Priority 5 – Student Engagement for Learning and Career Success

Some of the key initiatives relative to this objective include advancing experiential learning and improving both critical thinking and communication skills. The School will continue to work closely with student organizations in order to develop a long-term student engagement strategy across different organizations. An integral part of this objective includes engaging ITM alumni, especially with those alumni committed to student learning and career success. We propose more courses should incorporate case learning workshops.

Priority 6 – Diversity in the Community

This program objective encompasses increased diversity in the student body, staff and faculty representation, as well as, embedding diversity into the curriculum and educational environment.

Priority 7 – Industry Ties

We intend to increase the amount of interaction students and faculty members get to have with the business community in Toronto. Furthermore, the alumni association needs to be revived such that business connectors are created for sourcing of co-op placements and projects for ITM 90A/B. There is an opportunity to leverage the Ryerson Zone model of cross disciplinary teams through the concept of a Business IT Zone. Five new members were recruited to the program advisory council (PAC) in 2016, and we will keep building and nurturing this body.

Priority 8 – Addressing the Competition

In addition to a strong, innovative and up-to-date curriculum, and effective ways of delivering it (we are in the process of designing the delivery of lab intensive courses in a hybrid mode by deploying web-based virtualization technology) that give us a competitive advantage, we aim to continue working to increase the number of students involved in our co-op program. In addition, we have applied for BTM accreditation and hope to receive this certification in 2017/2018.

BTM is in the process of hiring in targeted areas that we identified as the growth areas in IT Management. Adding highly qualified experts to our already diverse faculty will allow us to research novel problems and paradigms, and be knowledge creators in our field.

5. ASC EVALUATION

The Academic Standards Committee (ASC) assessment of the Business Technology Management Periodic Program Review indicated that the review provided a reflective analysis of the program. The Academic Standards Committee recommends that the program provide a one-year follow-up report that includes:

- Progress on the developmental plan, as outlined in the supplemental report.
- The most recent course outlines for all required courses in the program that are taught by Teaching Departments outside the School of Information Technology Management (e.g., CMN 124, GMS 200, SSH 105, ACC 100, etc.).
- The mapping of the required courses taught outside of the School to the program learning outcomes. Include an analysis of the mapping of all required courses—taught both within and outside of the School—to the program learning outcomes and a plan to address any gaps that may be identified through the revised curriculum mapping. It is recommended that Ryerson’s Curriculum Development Consultant be consulted for assistance with the mapping and analysis.
- Progress on integrating equity, diversity and inclusion into the BTM curriculum.

Follow-up Report

In keeping with usual practice, the one-year follow-up report which addresses the recommendation stated in the ASC Evaluation section is to be submitted to the Dean of TRSM, the Provost and Vice President Academic, and the Vice Provost Academic by the end of June, 2018.

6. IMPLEMENTATION PLAN

- i. Approval of the recommendations set out in the Final Assessment Report:
The recommendations have been approved by the Dean and by Senate. Ryerson University's IQAP Policy 126 states: "Senate is charged with final academic approval of the Program Review."
- ii. Responsibility for providing any resources made necessary by those recommendations:
Ryerson University's IQAP Policy 126 states: "The Chair/Director and Dean are responsible for requesting any additional resources identified in the report through the annual academic planning process. The relevant Dean(s) is responsible for providing identified resources, and Provost is responsible for final approval of requests for extraordinary funding. Requests should normally be addressed, with a decision to either fund or not fund, within 2 budget years of the Senate approval. The follow-up report to Senate will include an indication of the resources that have been provided."
- iii. Responsibility for acting on those recommendations:
Ryerson University's IQAP Policy 126 states: "If the report includes a recommendation for approval of the program review, it will include a date for a required follow-up report to be submitted to the Dean and Provost on the progress of the developmental plan and any recommendations or conditions attached to the approval."
- iv. Timelines for acting on and monitoring the implementation of those recommendations:
Ryerson University's IQAP Policy 126 states: "The initial follow-up report is normally due by June 30 of the academic year following Senate's resolution. The Provost may require additional follow-up reports."

7. REPORTING

- i. The distribution of the Final Assessment Report (excluding all confidential information) and the associated Implementation Plan to the program, Senate and the Quality Council:
The Office of the Vice Provost Academic is responsible for distribution of the Final Assessment Report to all relevant parties.
- ii. The institutional Executive Summary and the associated Implementation Plan be posted on the institution's website and copies provided to both the Quality Council and the institution's governing body:
The Office of the Vice Provost Academic is responsible for posting the information on the Curriculum Quality Assurance website at www.ryerson.ca/curriculumquality. The information is provided to the Board of Governors on an annual basis.
- iii. The timely monitoring of the implementation of the recommendations, and the appropriate distribution, including web postings, of the scheduled monitoring reports:
The Office of the Vice Provost Academic is responsible for following up with the programs and their respective Deans to ensure the recommendations are implemented. The follow-up report is submitted to the relevant Dean(s) and the Vice Provost Academic for review.
- iv. The extent of public access to the information made available to the public for the self-study:
Ryerson University's Senate Policies are available to the public through the Senate website at www.ryerson.ca/senate. This includes Policy 110 Institutional Quality Assurance Process and Policy 126 Periodic Program Review of Graduate and Undergraduate Programs. The Final Assessment Report (excluding all confidential information) and the associated Implementation Plan is available on the Curriculum Quality Assurance website at www.ryerson.ca/curriculumquality. A summary of the Report of the Review Committee is contained within the Final Assessment Report. A summary of the responses provided by the Dean and the program to the Report of the Review Committee is contained within the Final Assessment Report.

8. SCHEDULE

The next periodic program review for the Bachelor of Commerce in Business Technology Management is scheduled for 2024 - 2025.