

# Optimizing the Undergraduate Experience at U of T

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## *Executive Summary*

### *MIE463 - Process Improvement Team (PIT) 8*

#### *Background & Scope*

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Established in 1873 as the School of Practical Science, the University of Toronto's Faculty of Applied Science & Engineering (FASE) is Canada's premier teaching and research-intensive engineering school, with a calibre of undergraduate programs that is commensurate with the quality of the diverse student body that it attracts from around the world. In order to achieve its vision of being a leader among the world's best engineering schools, the FASE has the following key objectives to ensure that it satisfies its student (customer) needs:

- Maintaining the excellence of faculty, staff, and students;
- Providing an excellent experience for students, inside and outside the classrooms; and
- Contributing substantially to the prosperity of the GTA, Ontario, and Canada.

This engagement defines, analyzes, and improves the development of the undergraduate student experience to ensure delivery of high customer satisfaction. The scope of the project further focuses on the process of redefining student requirements, which begins with student data acquisition and ends with overall process control and oversight. The PIT employed a modified Business Transformation Methodology (BTM) approach to enable the FASE in achieving change management.

#### *Process Analysis*

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The PIT conducted a business process analysis (BPA) of the FASE through the employment of multiple techniques such as value chain analysis, IGOE identification, root cause analysis, and data collection/analysis. The PIT identified four main areas of investigation, namely:

1. Student Involvement - students have minor control over FASE decisions;
2. Feedback Channels - inadequate channels to incorporate the voice of the customer;
3. Consistency - students are treated to a wide range of experiences, indicating high process variation in service delivery;
4. Faculty Metrics - metrics used by the FASE do not reflect the metrics valued by students.

## *Process Redesign*

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To restructure the existing processes identified from the BPA, the PIT identified the following subprocesses as areas for improvement:

1. Data Acquisition - how the FASE obtains student feedback data
2. Problem Analysis and Solution - how the FASE leverages student feedback to drive innovative solutions to deliver value
3. Process Control - how the FASE implements monitoring control to ensure low variation in service delivery

For each of the three processes, the PIT developed the following respective vision statements (with corresponding supporting strategies) to align with the FASE's overall vision:

1. Increase student feedback survey participation by 70%, as well as student demographic coverage to ensure an inclusive collection of student concerns
2. Increase student participation in internal decision making to 20% by empowering students to own their undergraduate experience
3. Increase the overall customer satisfaction by 25% and decrease the overall satisfaction variance by 10%

## *Conclusion*

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Through the Business Transformation Methodology (BTM), the PIT was able to redesign the current subprocesses by leveraging Lean and Six Sigma Analysis to identify and resolve sources of wastes and areas of process variation. The proposed solutions were selected from a suite of alternative solutions after performing careful cost-benefit analysis and ROI calculations: the selected solutions all leverage IT to enable long-term strategic impacts on the fulfillment of the FASE vision.

These solutions are as follows:

1. Kiosk + Integrated Database to improve Data Acquisition: continuous flow of customer feedback and engagement;
2. Balanced Scorecard to improve Analysis and Innovation: tracks internal metrics and provides live feedback on solution performance;
3. Control Systems to improve Process Control: minimizes process variation across the faculty's core teaching processes

Through addressing potential barriers to change and how the FASE can manage change across all stakeholders, the successful implementation of these solutions will lead to increased customer satisfaction of the undergraduate experience and assist the FASE in achieving their vision of being a leader among the world's best engineering schools.