



Master of Information Technology

MGT 5804: Leadership in Technology-based Organizations

Before describing the focus of this course, it is essential to describe what this course is not. This is not a course about the specific functional capabilities of general information technologies (e.g., CRM systems, supply chain technologies, production technology, administrative technology, business analytics technologies, risk management, or marketing research technologies, etc.). These are all tactical uses of technology and will be addressed in their respective courses. Instead, this course examines the complex challenges of managing innovation and technology from the perspectives of general managers and executives. Accordingly, you will be asked to deal with ambiguous information and situations faced by members of the “C-Suite” as many of the most vexing problems in innovation do not occur within defined functional areas within an organization but instead aggregate at the strategic level. For example, finding ideas for new products and the challenge of uncovering new markets, isn’t just a marketing problem. A growing body of evidence shows that an organization’s structure, the systems through which managers’ performance is measured and rewarded, and the formal and informal mechanisms used to allocate resources across competing projects powerfully influence the types of ideas that get surfaced, pushed forward, and adopted.

The perspective of this course is that many problems in managing innovation persist because managers aggressively implement solutions to the wrong problems – or because managers address only the apparent symptoms, without understanding their underlying cause. Framing the problem accurately is the most significant element of problem-solving because when the root causes of problems have been well defined, what to do about them often becomes obvious. The aspiration of this course is first to help managers build the tools to understand the real, underlying reasons why efforts to innovate so often fall short of expectations – and then with that understanding as a foundation, to learn how to build action plans that resolve the root problems.

This course will extensively use various experiential learning exercises such as case studies and dynamic simulations to dig deeper into a variety of problems and challenges in managing technology and innovation. These activities provide active learners with the unique opportunity to apply and test the tools and material discussed within this class. Cases allow us to study a variety of situations, examine tradeoffs, select and recommend the most appropriate option, and outline action steps to implement the chosen option.

A major part of the course is discussion and sharing of your own experiences, challenges, and approaches in managing technology/innovation. Although there are no experiential or knowledge pre-requisites for the course, your background experiences and knowledge –

whatever they may be – will be an important part of our collective efforts to learn best practices for navigating the strategic challenges of complex environments.

Therefore, you are strongly encouraged to bring and share technology management issues from your own organization or organizations you know. However, to participate effectively in the course, I will not assume that you are walking in the door as an “expert” in either strategic management practices or processes, nor will I assume that you are familiar with or proficient in agile strategic management practices. You will learn plenty of information about both areas of knowledge through the course that will both extend and enhance your current leadership capabilities!

The course goals consist of the following

1. Enable students to identify and understand the unique strategic challenges associated with creating and commercializing information technology products and services in complex environments with a specific emphasis on automation and artificial intelligence (G1)
2. Equip students with concepts, tools, and frameworks in agile and emergent strategies that can be applied in order to analyze and solve complex problems related to automation and AI-powered innovation (G2)
3. Empower students with a strategic perspective to design and implement innovative automation and AI technologies and business models to compete effectively within complex environments (G3)

To begin, I suggest starting from [Getting Started](https://canvas.vt.edu/courses/168287/pages/getting-started).
(<https://canvas.vt.edu/courses/168287/pages/getting-started>)

Course Objectives

Upon completion of this course, students will be able to (parentheses represent course goals noted above):

1. Deconstruct the limitations of common framing strategies for navigating complex technological environments with automation and AI technologies (G1)
 2. Deduce the benefits and trade-offs of agile and emergent strategies to tackle automation technology and AI innovation issues that cut across multiple levels and functions of the organization (G2)
 3. Judge the relevance of and defend against the competitive threats posed by digital disruption, automation, and AI to incumbent organizations (G2)
 4. Implement agile/emergent strategies for reaching core customer adopter segments with innovative automation/AI technologies (G2)
 5. Design and implement automation/AI-powered business models to reach customers in complex environments (G3)
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Course Modules

<ul style="list-style-type: none">• Module 1 (https://canvas.vt.edu/courses/168287/modules/358671)	<ul style="list-style-type: none">• Module 2 (https://canvas.vt.edu/courses/168287/mod
<ul style="list-style-type: none">• Module 6 (https://canvas.vt.edu/courses/168287/modules/358676) (https://canvas.vt.edu/courses/168287/modules/358677)	<ul style="list-style-type: none">• Module 7 (https://canvas.vt.edu/courses/168287/mod
<ul style="list-style-type: none">• Module 11 (https://canvas.vt.edu/courses/168287/modules/358681)	<ul style="list-style-type: none">• Module 12 (https://canvas.vt.edu/courses/168287/mod

Quick Links

Please click on the following quick links to get more information about the course:

- [Course Syllabus](#) (<https://canvas.vt.edu/courses/168287/assignments/syllabus>)
- [Technology Needed](#) (<https://canvas.vt.edu/courses/168287/pages/technology-needed>)
- [Learner Support](#) (<https://canvas.vt.edu/courses/168287/pages/learner-support>)
- [Privacy](#) (<https://canvas.vt.edu/courses/168287/pages/privacy-policies>)
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- [Mobile Access Disclaimer](#) (<https://canvas.vt.edu/courses/168287/pages/mobile-access-disclaimer>)

Contacting me

Please feel free to reach out to me with any questions or concerns. You can also post your questions in the [Q & A](#) (https://canvas.vt.edu/courses/168287/discussion_topics/1525904) session.

- Course Instructor: Dr. David Townsend, email: dtown@vt.edu (<mailto:dtown@vt.edu>)
- Course DLIs:
 - Dr. Ken Davidian, email: kdavidian@vt.edu (<mailto:kdavidian@vt.edu>),
 - Mr. Matthew Hayduk, email: mhayduk@vt.edu (<mailto:mhayduk@vt.edu>)
- Office: Not Applicable
- Phone: Not Applicable (Best to email to receive a timely response)
- Details of Contact: I check email constantly and will respond as soon as possible. Please also consider posting your question -- as long as it doesn't involve questions about your grade -- to the class [Q&A board](#) (https://canvas.vt.edu/courses/168287/discussion_topics/1525904) so others can see both the question and responses. Thank you in advance for your patience with our replies. This is a very large class and it will sometimes take us time to respond to all inquiries and questions.