

OPMGT – 579 / FIN 579

Enterprise Risk Management

Syllabus as of 09-03-20

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Course Overview

Goal:

This course will present management tools and frameworks to understand and identify risk. Emphasis will be placed on how to improve a firm's risk position, and how to adapt an organization to deal with risk. Cases are used to highlight and exercise the key concepts and frameworks in the course.

Course Description:

The famous American Economist, Frank Knight said, "Profit is the reward for taking risk." In Enterprise Risk Management, we develop a holistic approach to the identification and management of risks facing an organization, allowing leaders to identify and quantify the risks facing the enterprise. Typically recognized forms of risk, such as credit and market risks are presented. The impact of shocks to enterprises and the role of liquidity risk and the importance of protecting against it are reviewed. The role of operational risks, such as those arising from reliance on complex systems, outsourcers, international supply chains, lean processes, and external shocks pose perhaps the greatest risk to firms in the post-globalization era and are reviewed accordingly. This course provides frameworks for identifying, quantifying (in terms of capital allocation), and managing risks to the overall enterprise and offers direction on the formulation of a successful risk office and its appropriate integration with corporate strategy.

About Russell Walker, Ph.D.

Dr. Russell Walker is Associate Teaching Professor of Marketing and International Business and Director of Experiential Learning in Analytics at the Foster School of Business at the University of Washington. From 2007-2019, he was Clinical Professor at the Kellogg School of Management at Northwestern University, where he founded the school's executive-level risk management curriculum and the school's popular Analytical Consulting Lab, Risk Lab, Global Lab and Digital Lab – novel experiential classes that brought MBAs together with real-world corporate opportunities focused on data, risk, and digital strategy. Professor Walker received the Kellogg Impact Award, given by his students for excellence and influence in teaching.

His most recent book, "[From Big Data to Big Profits: Success with Data and Analytics](#)" (Oxford University Press, August 2015), in which Dr. Walker explores how firms can best monetize Big Data, received the Silver Business Technology Book award from [Axiom Books](#). In his award-winning 2013 title, "[Winning with Risk Management](#)" (World Scientific Publishing), he makes the case for companies succeeding on the basis of risk management, much as companies compete on efficiency, costs, labor, location, and other dimensions. He has authored numerous popular business case studies supporting this theory, many of which have been recognized for excellence by the Aspen Institute, Harvard Business Review Press, Harvard School of Business, Kellogg School of Management, the World Bank, and the Bank of England, among others.

He has advised leading organizations internationally on risk management and analytics, including: the U.S. Department of State, the World Bank, the Securities and Exchange Commission, the US Federal Reserve Banking System, the FBI, the Department of Homeland Security, the Bank of England, International Finance Corporation, Microsoft, CME Group, John Deere, Teradata, Discover Financial, USAA, IBM, State Farm, PG&E, Capital One Financial, and many other leading banks and insurers.

Dr. Walker began his career with Capital One Financial, where he served as a senior corporate strategist specializing in advancing analytics throughout the enterprise for the purposes of improving marketing and risk management. Currently, he serves on the Scientific and Technical Council for the Menu of Change, an initiative led by the Harvard School of Public Health and the Culinary Institute of America, to develop healthier and more environmentally sound food choices. He was a board member of the Virginia Hispanic Chamber of Commerce, where he developed support programs for Hispanic entrepreneurs and advised U.S. senators on U.S. Latino matters. He currently advises the Cuba Study Group, a nonpartisan group dedicated to enabling prosperity in Cuba.

More on his work can be found at russellwalkerphd.com and at his popular and award-winning blog bigdatatobigprofits.com

Professor Walker holds an MS and Ph.D. from Cornell University, and an MBA from the Kellogg School of Management at Northwestern University and a BS from the University of South Florida.

Course Schedule**Course Outline, Frameworks, Cases and Readings**

All Assignments are due on the Monday of the following week of mention. Cases submissions are due at the beginning of class. The class will begin with a case debrief, incorporating input from the various teams.

Week I - Class 1 and 2:**Risk, Risk Identification, Capital Impacts of Risk**

In this module, we will examine the role of risk on a simple operation. The impact to financial performance will be stressed. We will explore how to measure, transfer and adapt to risks.

Topics:

What is Risk?

How to Measure and Prepare for Risk in an Enterprise?

Introduction to Risk and Uncertainty

Risk Decisions for the Manager

Risks in Operating an Enterprise

Risk from a Financial Perspective: Capital Allocation and Risk

Using Monte Carlo Simulation approaches to develop statistical models

Frameworks:

Difference between random risk and learnable risk

Measurement of risk and its quantification

Cases and Readings:

1. Milk and Money, Karl Schmedders, Kellogg Case # 5-407-754: Identification of Risk and Quantification (Use of Correlation and Hedging in Risk Management).

Assignment 1: Milk and Money (Group Assignment). Answer Questions in the case.

Week II: Class 3 and 4: Market Risk – Evaluation of Assets and Asset Protection

In market risk we will examine how asset-holding firms evaluate the volatility of asset prices. We will examine the implications to banks and asset rich firms. Market risk is valuable to individuals, too, in terms of real estate and retirement holdings. We will discuss that and tools for managing asset volatility. We will discuss major commodities the risks posed to firms that use or require such commodities.

Topics:

Overview of models in market risk

Value at Risk (VaR)

Liquidity Risk

Scenario Analysis

Basel approach to Market Risk
Introduction to Major Commodities
Developing Monte Carlo Simulations

Frameworks:

Value at Risk (VaR) and Monte Carlo simulations
Modeling scenarios (Monte Carlo simulations)
Stress Testing

Cases:

1. Measuring and Managing Risk in Commodities: Corn and the Golden Kernel (Kellogg Case by Russell Walker)
2. Arbor City Case Part A and B: Application of VaR to an asset portfolio (actual fund data). (Kellogg Case by Russell Walker)

Assignment 2: Arbor City A and B (Group Assignment) and

Corn and Golden Kernel: Provide your explanation of the relationship between the price of corn and oil. How would you use this to make predictions for the future? (Individual)

Week III: Class 5 and 6: Credit Risk – Corporate, Consumer, and Sovereign Approaches in modeling Credit Default Risk

Credit risk is uniquely and extremely important to banks and bond buyers. We will examine models used to evaluate credit risk of corporate, consumer, and sovereign debt. We will look at consumer credit risk models and build one on credit card data.

Topics:

Modeling Default as a function of assets: Merton and Jarrow Models
Credit Risk Ratings: Rating Systems, Financial Details
Credit Risk in Consumer Lending: Credit Score-carding
Basel Approach to Credit Risk
Counterparty Risk and CDS issues

Frameworks:

Logistic regression for score-carding
Asset based models for credit risk modeling
Classification models
Markov models for credit risk transitions
Rationalizing Credit Rating Systems
Using Transitional Probabilities to model credit risk migration

Cases and Readings:

1. Scoring credit card customers on probability of default (application of logistic regression and classification models) Data set to be provided in class

Assignment 3: Building a Credit Default Model Using German Bank Data (Group Assignment)

Directions on Analysis and Questions to Follow

Week IV: Class 7 and 8: Political Risk and Country Risk

Political and Country risk for an investor or operating firm is our perspective. We will look at how investment in emerging markets challenges firms with risk, how that risk is considered, and how firms can best deal with that risk and the reward for taking that risk.

Topics:

Understanding Political and Sovereign Risk in Emerging Markets.
The role of Credit Default Swaps as a measure of Country Risk.
Trends in international risk management, implication for transfer risk.

Frameworks:

Modeling crisis and political risk through CDS spreads
Overview of major political risk models: terms and components

Cases:

1. Managing Risk in an Unstable World, Ian Breemer, HBR R0506B

Assignment 4: Prepare readings for Class Discussion, Answer brief Posted questions (Individual Case Assignment)**Week V: Class 9 and 10: Operational Risk and IT Risks**

For a great many firms, the largest risk comes from failed operations. In many ways, that is not tied to failed IT or digital processes. Banks have some of the most critical operations and IT systems in business. We will examine operational risk in various industries and in particular in banking. Special emphasis will be given to risks from data, IT and digital processes, given their importance to so many industries.

Topics:

External Shocks
Regulatory Risk
Operational Risk – Your Supply Chain, Outsourcing
IT-Risks – How technology can change your company
Basel II definitions for Operational Risk

Frameworks:

Learning about your risks, reducing exposure and lack of information
Developing a strategy for dealing with risk
Understanding pitfalls in the global and media economy
Operational VaR
Basel II regulations on Operational Risk
Scenario Analysis and Stress Testing for Operational Risk

Cases:

1. Nokia/Ericsson: Shocks to Global Sourcing Systems (See book chapter by Russell Walker)
2. TJMAXX Chapter from Book (See book chapter by Russell Walker)

Assignment 5: Nokia Ericsson Case from book chapter (Individual Assignment)
Answer Posted Questions

Week VI: Class 11 and 12 : Human Systems and Their Risks to Organizations

Enterprises often experience harm because of the poor or malicious decisions of a few in great power. Although easily viewed as a failure by a person, it is really a failure of the enterprise and requires an examination of how firms set risk cultures and how they enforce sound decision-making.

Topics:

Organizational Implications of Operational Risk Management

Frameworks:

Learning about your risks, reducing exposure and lack of information
Developing a strategy for dealing with risk

Cases:

1. The Barings Collapse (A) Breakdown in Organizational Culture and Management IMD001 v 11.12.2002
2. The Barings Collapse (B) Failures in Control and Information Use IMD002 v 11.12.2002
3. Chapter 8, Soc Gen Trading Scandal in Winning with Risk Management

Assignment 6: Compare and Contrast Barings and Soc Gen Situations (Individual Assignment)
Answer Posted Questions

Week VII: Class 13 and 14: Catastrophe Risk, Reputational Harm, Regulation and Impacts to the Enterprise

The scale and impact of risk events can bring such attention and harm to a firm that it fundamentally alters its ability to operate or requires that it operate differently. These catastrophic risks are often a combination of failed internal operations, poor decision-making, a poor risk culture, and disadvantageous external forces. Harm to the firm's reputation is often an outcome. Harm to customers attracts regulation, impacting long-term profits. We will examine cases and best practices for firms.

Topics:

Scenario Planning
Trends in Operational Risk
Impact to Firms

ERM Frameworks

Frameworks:

Understanding pitfalls in the global and media economy
Scenario Analysis and Stress Testing for Operational Risk
Frameworks for Managing Strategic and Enterprise Risk
COSO Framework
Other ERM Frameworks

Cases:

Readings on BP and Toyota (See Chapters in book by Russell Walker)
Read Chipotle Case

Assignments 7 and 8:

- 1) BP and Toyota Questions. (Individual Case Assignment).
- 2) Submit final project description and goal (Group Assignment)
- 3) Chipotle Case: Examine why Chipotle's recovery is hard. What would you do to help right its course? (Individual)

Answer Posted Online Questions**Week VIII: Class 15 and 16: Adapting the Organization to Deal with Risk (Seeking the Best Risk)**

CEOs and Boards have an immense responsibility of making risk decisions for firms that will impact the firm for years. We will examine how CEOs and Boards should consider risk in decision-making. We will have a CEO and board member join us to discuss the Consecoco case and how Consecoco recovered from it.

Topics:

The Role of the Board in Dealing with Corporate Risk: Defining Enterprise Risk
Integration of corporate governance, and corporate strategy in enterprise risk management
Organizations for Risk Management
Culture and Leadership Roles
The role of Information within an Enterprise and its use in risk management
The Cofounding of Risk

Frameworks:

Ready and organization for risk realizations
Organizational Alignment for risk management
Reporting process – getting the organization to speak up
Risk at a personal level – leadership and team approaches

Cases:

1. Consecoco: Market Assumptions and Risk (Book Chapter by Russell Walker)
2. JPMorgan: The Diamond Standard (Book Chapter by Russell Walker)

Assignment 9: Conseco Case Questions (Individual Case) (See book chapter by Russell Walker)

Posted Questions to follow

WEEK IX: Class 17: Demography Risk and the Preparing for the World in 2050

The future of the world, at least from a demographic perspective, is quite predictable. The number, location, and identity (ethnicity) of populations are measurable. Implications to business models, risks to trade, global peace and prosperity all follow. We will examine the changes expected in the world population and how it presents risk and opportunity for various businesses.

Topics:

The trends in world demography
Implications to Globalization
Impact of disruption in energy markets
Trade and military alliances
Food markets and food supply of the world

Frameworks:

Dealing with persistent risks

WEEK IX: Class 18: Managing Intellectual Property Risks, New Technology Risks, Key-Person Risk, and Risks in Start-ups

The dynamic nature of start-ups brings critical focus to key-person risk, the role of intellectual property risk, and access to capital. Indeed offensive and defensive strategies are necessary for start-ups and early stage firms in managing such critical risks. We will examine these and best practices for start-ups and digital firms.

Assignment: Read and Prepare Alexa Case and Polaris Battery Labs: Startup Risks

WEEK X: Class 19: Implementing Risk Management Views in Your Own Life

In this session, we will examine some risks and decisions that are common for MBA graduating students. Through a spreadsheet exercise, we will examine how to prepare for such risks and chart a path to early financial stability and success.

- Class Exercise to Examine Financial Planning for Post-Graduation (Bring your Computer and Data)
- Role of financial planning in reducing liquidity risks in life
- Simple operational risks and ideas for improvement
- Read the Personal Financial Risk Case (no write-up due)

WEEK X: Class 20 Team Presentations and Course Wrap-up

Required Case Packets: Critical readings, examples, cases, and exercises.

1. **Case packet:** <https://hbsp.harvard.edu/import/756011>
2. **Text:** *Winning with Risk Management* by Russell Walker, 2013.

Grading

7 Individual Assignments:	30%
3 Group Projects:	20%
Final Project:	20%
Individual Participation:	15%
Peer Evaluation:	15%

Final Project:

**Assessment of risk and application of risk frameworks to an enterprise of choice.
The final project will be presented in the last class.**

The course grade will be based on the group homework assignments, individual assignments, and the final project and its presentation, and individual class participation, and peer evaluations (15%). All group work may be completed and submitted as a group, but *everyone* is expected to work on *each* assignment. Each group will submit one copy of the report per assignment, and it should be an electronic copy of their model, analysis and solution.

Each group member *must* fill out the attached peer evaluation form reflecting each individual's contribution to the group output. **Groups should be a maximum of 6 people.**

Re-grading

If you believe that your assignment needs to be re-graded, you understand that the entire assignment is subject to regrading, including the possible outcome of a grade reduction.

Assignment Write-ups

This should be a clear and concise explanation of your spreadsheet model, analysis, and conclusions. Use a presentation format with outlines, bullets and tables, rather than long essays.

The write-up should include:

I. **Executive Summary:**

Overview of the **problem** addressed, **key issues** involved, and your **solution**, which demonstrates your understanding of the assignment. Provide a clear description of recommendations, decisions to be made, and other concerns

that you may wish to raise.

II. Analysis:

How should risk be framed, measured, and managed in the situation at hand? Propose a framework, process, measurement, or best practice that is appropriate for the case at hand.

Project

This involves creating, modeling, and analyzing a business case of your choice. It may be based on your work experience, a case from another course, a magazine article, or even your own imagination! The goal is to analyze enterprise risk at a specific company. You need not contact the company, but may rely on public, published, and industry-specific details. A good model looks at major risk types to the enterprise and considers measurement processes, management role's, risk evaluation processes, and risk acceptance roles in the enterprise. Have fun with the project and explore something of interest to you!

You will also make a **fifteen-minute presentation of your project to the class**. The project report is due at the time of your presentation. You should prepare a presentation suitable to communicate the entire body of your work, as if you were presenting to a client or board of directors.

Peer Evaluation

Please evaluate all members of your group (including yourself) in terms of their contribution to the group assignments and the final project, and record the scores on the spreadsheet on the back page. Highlight your own name and grade each member of your group on each assignment on a scale of 1 (least) to 10 (most), on each assignment and the term project. At the end of the quarter, compute the average scores for all of your group members in the last column and return this evaluation form with your final project report. Please fill these forms this carefully, as it will be one of the inputs used in deciding the individual course grades. **Submission of the peer evaluation forms is mandatory.** Your grade and the grade of others on your team will be withheld for failure to submit it. These evaluations will be guarded with utmost confidentiality, and will be used only by me, and only for grading purposes.

During this peer evaluation process, please keep in mind the following criteria in terms of each individual group member's contribution.

Communication: Does the member listen to and consider others' points of view? Communicate ideas well? Adhere to the group meeting schedule? Is the person open to

feedback?

Innovation: Does he/she generate ideas on how to achieve group goals? Apply past knowledge and experience to the current project? Offer alternative approaches to current ways of thinking? Challenge the status quo when necessary? Encourage innovative thinking among the group members?

Initiative: Does the member help move ahead efficiently? Go beyond the requirements of the task? Look for opportunities to improve? Help others in the group's understand the background material?

Team Orientation: Does the member work well with the group? Acknowledge and pay attention to the group and individual activities? Treat all members as colleagues? Complete individual task requirements to achieve group goals? Give other members credit for their ideas? Consider the group goals as the top priority? Attend all group meetings or provide advance notice when absent? Informs the group of his/her task so that it can be completed when absent?

Foster School and University of Washington Terms and Conditions

Academic Integrity:

I employ the principles and procedures espoused by the University of Washington Student Conduct Code to maintain academic integrity in the course. The Code establishes the expectation that students will practice high standards of professional honesty and integrity. In particular, implementation of the Code at the Foster School of Business prohibits cheating, attempted cheating, and plagiarism—including improper citations of source material—as it pertains to academic work. Suspected violations will be handled in compliance with the University of Washington Student Conduct Code.

Disability-related Accommodations:

To request academic accommodations due to disability, please contact Disability Resources for Students (DRS) <http://depts.washington.edu/uwdrs/>. If you have a letter from DRS indicating that you have a disability that requires academic accommodations, please present the letter to me *as soon as possible* so that we can discuss the support I can offer you in this class.

Religious Accommodations Policy:

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at [Religious Accommodations Policy](#). Accommodations must be requested within the first two weeks of this course using the [Religious Accommodations Request form](#).