

## **DSO-599: Operations Forensics and Valuation**

**Spring 2017 – MW 9:30-11:00am – 1.5 Units**

**Professor: Leon Zhu**

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**Office Hours: MW 11:00am-noon**

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### **Course Description**

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How do operational decisions impact the accounting statements and the short-term and long-term firm valuation? What are the managers' incentives when making those operational decisions? How does one go underneath financial statements to get a better handle on firm valuation? This course provides framework and tools to address the above questions. We use an interdisciplinary approach to learn how operations relates to accounting, finance, marketing, legal, organization, and strategy to help you create a holistic view of the business. Specifically, we study

- Which **operational indicators** best suggest future financial performance?
- How does one do **operational due diligence**?
- What are best practices in **operational turnarounds**?

These questions constitute key issues in what might be called "operations forensics."

This course helps students confront questions like these in their future careers as:

- managers, including those of not-for-profits, such as some hospitals
- analysts and analyst-facing CEOs and entrepreneurs
- private equity investors
- management consultants

### **Learning Objectives**

- To enable a strategic level of understanding of how operations decisions impact other key function areas of business and make *holistic judgments and decisions in analyzing business situations*.
- To practice critical thinking skills by utilizing frameworks, analytical tools, industry language, and personalities on performance assessment and investment recommendations for *proper and effective problem solving and decision*.
- To evaluate the managers' incentive under asymmetric information and decision rights and examine ethical reasoning skills, understand *social, civic, and professional responsibilities*.
- To develop people and leadership skills by utilizing interdisciplinary business skills in case analyses, presentations and projects, including capstone projects to promote the effectiveness as *business managers and leaders*.
- To effectively align incentives and facilitate *communication in organizational contexts*.

### **Required Materials**

Richard Lai, *Operations Forensics: Business Performance Analysis Using Operations Measures and Tools*. MIT Press, 2013. ISBN: 9780262018661.

Also required is the case booklet from the USC bookstore.

Included in Course Reader:

Desai, Fruhan Jr., Meyer, The Case of Unidentified Industries - 2013  
Raman, Gaur, Kesavan, David Berman  
El-Hage, Payton, ABRY Partners and F+W Publications  
Frei, Campbell, Pilgrim Bank (A): Customer Profitability  
Kaplan, Texas Eastman Co.  
Raman, Dessain, Jensen, Kristinsdottir, Areva T&D  
Bohmer, Virginia Mason Medical Center (Abridged)

### **Supplementary Reference Books**

Gerard Cachon and Christian Terwiesch, *Matching Supply with Demand: An Introduction to Operations Management*. 3rd Edition, McGraw-Hill Education, 2012. ISBN 9780073525204

Jan A. Van Mieghem, *Operations Strategy: Practices and Principles*. 2nd Edition. Dynamic Ideas, 2014. ISBN: 9780989910866.

David Einhorn, *Fooling Some of the People All of the Time, A Long Short (and Now Complete) Story, Updated with New Epilogue*. Wiley, 2010. ISBN: 9780470481547.

### **Prerequisites and/or Recommended Preparation:**

No formal requirement, please self-study the definition of the accounting line items and financial ratios (some guide will be posted on Blackboard).

### **Course Notes:**

Lecture slides and additional course material will be posted on Blackboard. The slides for case discussion will not be posted.

### **Grading Policies:**

The course grade, which will be curved, is based on 10% class contributions, 50% individual case analysis, and 40% team project. All assignments are due by 9 pm day before class through Turnitin on Blackboard (I want you to get some sleep).

1) 10% on class contributions; I count mainly your examples and elaborations of the lecture material. I expect notifications for absence.

2) 50% on case analysis; Individual effort expected.

i) 20% on discretionary case (choosing one case among David Berman, ABRY Partners and F+W Publications, and Virginia Mason Medical Center).

Expect to write around 3 to 6 pages of text (12-point font, 1.5 line spacing, 1-inch margins all round), and 0 to 4 pages of exhibits. Entire submission must be in only one file.

ii) 30% on Pilgrim Bank (A): Customer Profitability

Expect to write around 4 to 8 pages of text (12-point font, 1.5 line spacing, 1-inch margins all round), and 0 to 6 pages of exhibits.

3) 40% on team project.

Each team ideally has 4 to 5 members. Expect to write 20-30 pages double-spaced, excluding exhibits. Topic fairly open, please choose a well-motivated question; examples:

a) Undertake due diligence on a donut store on Walnut Street

b) Modify the "Altman Z-score" to predict technological disruptions instead of bankruptcy

c) Beer and Nohria wrote an HBS paper distinguishing "E" and "O" turnarounds. Use their criteria to codify turnarounds based on newspaper reports, and run a regression to see which types are more likely to succeed.

Grading criteria:

- Accurate (accurately/correctly/logically using the most relevant/significant information)
- Clear (communicating clearly, precisely. Is it easily grasped? Well organized?)

- Expansive (identifying a range of issues and in-depth details of each)
- Due Diligence (achieving a standard of care throughout the process)

Other things to consider:

- Data-driven analysis.
- (Operational) principle-driven analysis.
- Creativity—e.g., data source (might need permission; don't do anything illegal).
- 10-minute presentation in class on the last day.

Proposal due mid-quarter, not graded. One page to include: (1) question and its motivation, (2) data to be gathered, (3) analyses to be undertaken. I will provide assistance—e.g., what you could read to refine the project.

To facilitate learning, we will make the team reports available to all students.

### **ASSIGNMENTS AND GRADING DETAIL**

<b><u>Assignments</u> (example)</b>		<b><u>Points</u></b>	<b><u>% of Grade</u></b>
<b>INDIVIDUAL CASE</b>	<b>Optional Case</b>	100	20.0%
	<b>Required Case</b>	100	30.0%
<b>CLASS PARTICIPATION</b>		100	10.0%
<b>FINAL TEAM PROJECT</b>		<u>100</u>	<u>40.0%</u>
<b>TOTAL</b>		100	100.0%

Final grades represent how you perform in the class relative to other students. Your grade will not be based on a mandated target, but on your performance. Historically, the average grade for this class is close to A-.

- Three items are considered when assigning final grades:
1. Your average weighted score as a percentage of the available points for all assignments (the points you receive divided by the number of points possible).
  2. The overall average percentage score within the class.
  3. Your ranking among all students in the class.

#### **Assignment Submission Policy:**

Assignments must be turned in on the due date/time electronically via Blackboard. Any assignment turned in late, even if by only a few minutes, may receive a grade deduction (for example, if your work is an A- grade, you will be given a B- grade). Late or not, however, you must complete all required assignments to pass this course.

#### **Evaluation of Your Work:**

I believe in learning by doing and you may regard each of your submissions as an “exam” in which you apply what you’ve learned according to the assignment. I will do my best to make my expectations for the various assignments clear and to evaluate them as fairly and objectively as I can. If you feel that an error has occurred in the grading of any assignment, you may, within one week of the date the assignment is returned to you, write me a memo in which you request that I re-evaluate the assignment. Attach the original assignment to the memo and explain fully and carefully why you think the assignment should be re-graded. Be aware that the re-evaluation process can result in three types of grade adjustments: positive, none, or negative.

## **ADDITIONAL INFORMATION**

### **Add/Drop Process**

The last day to add the class or withdraw without receiving a “W” is *day, month date, year*. The last day to drop with a mark of a “W” is *day, month date, year*.

### **Technology Policy**

Videotaping faculty lectures is not permitted due to copyright infringement regulations. Audiotaping may be permitted if approved by the professor. Use of any recorded or distributed material is reserved exclusively for the USC students registered in this class.

### **Academic Integrity and Conduct**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own (plagiarism). Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. All students are expected to understand and abide by the principles discussed in the *SCampus*, the Student Guidebook ([www.usc.edu/scampus](http://www.usc.edu/scampus) or <http://scampus.usc.edu>). A discussion of plagiarism appears in the University Student Conduct Code (section 11.00 and Appendix A).

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>. Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/departments/departments-public-safety/online-forms/contact-us>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report or can initiate the report on behalf of another person. *The Center for Women and Men* <http://engemannshc.usc.edu/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <https://sarc.usc.edu/reporting-options/> describes reporting options and other resources.

### **Support Systems**

Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* ([www.usc.edu/disability](http://www.usc.edu/disability)) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* (<http://emergency.usc.edu/>) will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

### **Students with Disabilities**

The Office of Disability Services and Programs ([www.usc.edu/disability](http://www.usc.edu/disability)) provides certification for students with disabilities and helps arrange the relevant accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the se-

mester as possible. DSP is located in GFS (Grace Ford Salvatori Hall) 120 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. Email: ability@usc.edu.

### **Emergency Preparedness/Course Continuity**

In case of a declared emergency if travel to campus is not feasible, the *USC Emergency Information* web site (<http://emergency.usc.edu/>) will provide safety and other information, including electronic means by which instructors will conduct class using a combination of Blackboard, teleconferencing, and other technologies.

Please make sure you can access this course in Blackboard and retrieve the course syllabus and other course materials electronically. You should check Blackboard regularly for announcements and new materials. In the event of an emergency, the ability to access Blackboard will be crucial. USC's Blackboard learning management system and support information is available at [blackboard.usc.edu](http://blackboard.usc.edu).

### **Incomplete Grades**

A mark of IN (incomplete) may be assigned when work is not completed because of a documented illness or other “emergency” that occurs after the 12<sup>th</sup> week of the semester (or the twelfth week equivalent for any course that is scheduled for less than 15 weeks).

An “emergency” is defined as a serious documented illness, or an unforeseen situation that is beyond the student’s control, that prevents a student from completing the semester. Prior to the 12<sup>th</sup> week, the student still has the option of dropping the class. Arrangements for completing an IN must be initiated by the student and agreed to by the instructor prior to the final examination. If an Incomplete is assigned as the student’s grade, the instructor is required to fill out an “**Assignment of an Incomplete (IN) and Requirements for Completion**” form

(<http://www.usc.edu/dept/ARR/grades/index.html>) which specifies to the student and to the department the work remaining to be done, the procedures for its completion, the grade in the course to date, and the weight to be assigned to work remaining to be done when the final grade is computed. Both the instructor and student must sign the form with a copy of the form filed in the department. Class work to complete the course must be completed within one calendar year from the date the IN was assigned. The IN mark will be converted to an F grade should the course not be completed.

### **Information for Faculty Members about Grade Disputes**

All grades assigned by faculty members are final. Students have the right to seek explanation, guidance, counsel and reasons for the assignment of a grade. Students may appeal a grade according to university policy as set forth in *SCampus*. Faculty may initiate a change in grade if there is an error in the calculation of a grade. However, a faculty member may not change a disputed grade outside the formal appeals process. In response to a disputed academic evaluation by an instructor, a student is entitled to two levels of appeal after review by the instructor: first to the chairperson of the department and then to the appropriate dean of the school. The full university policy can be found in *SCampus* under University Governance / Academic Policies at <http://scampus.usc.edu/academic-policies/>

## **COURSE CALENDAR/READINGS/CLASS SESSIONS**

The chapters refer to those in the text, “Operations Forensics.” Please read the case and be prepared for the discussion before coming to the class. This syllabus is an invitation to students to engage in an exciting and interactive study of operations performance analysis. The learning environment will be collaborative and supportive; we will learn from one another both in and out of the classroom. To that end, modifications to this syllabus might be warranted as determined by the instructors as we assess the learning needs of this particular class of students.

<b><u>Session</u></b>	<b><u>Date</u></b>	<b><u>Topics</u></b>	<b><u>Assignments due 9 pm the night before</u></b>
1	M 1/9	Introduction to Operations Forensics	
2	W 1/11	What Financial Statements May or May Not Reveal	
M 1/16 Martin Luther King Day			
3	W 1/18	Indicators of Accounting Performance	
4	M 1/23	Case: David Berman	(Optional) Report Due 9 pm 1/22
5	W 1/25	Indicators of Disruption and Distress	
6	M 1/30	Case: ABRY Partners and F+W Publications	(Optional) Report Due 9 pm 1/29
7	W 2/1	Assessing the Risks	
8	M 2/6	Assessing the Customer Base	
9	W 2/8	Case: Pilgrim Bank (A): Customer Profitability	Required Report Due 9 pm 2/7
10	M 2/13	Linking Performance and Balanced Scorecard	Team Proposal Due 9 pm 2/12
11	W 2/15	Guest Speakers	
M 2/20 Presidents' Day			
12	W 2/22	Various Aspects of Turning Around	
13	M 2/27	Case: Virginia Mason Medical Center	(Optional) Report Due 9 pm 2/26
14	W 3/1	Final Team Presentation	Team Report Due 9 pm 2/28

### **Lunches with the Professor**

I enjoy getting to know students better. Not mandatory. Sign up for (free!) meals with me. Preference to those who have not met with me before.

## **Course Outline**

Session 1 – 1/7 (Monday) Introduction to Operations Forensics

*Question:* What is Operations Forensics? Who uses Operations Forensics?

Reading: SLG Ratio Master, Interpreting Financial Statements, 2000 (Posted on Blackboard)

### **Module 1: Operational Indicators (chapters 2 - 6)**

Session 2 – 1/11 (Wednesday) What Financial Statements May or May Not Reveal

*Question:* How to infer business models and customer types from the financial statements?

Reading: The Case of Unidentified Industries - 2013 (in Course Reader)

Session 3 – 1/28 (Wednesday) Indicators of Accounting Performance

*Question:* What are the indicators of current and future performance? What are ROA trees?

Reading: Chapter 6-Link between Operations and Finance, Matching Supply with Demand

Session 4 – 1/23 (Monday) Case: David Berman

*Question:* What is David Berman's business model? What are the strengths and weaknesses?

Reading: Schlosser, King of the Retail Jungle, Fortune, 2005

Session 5 – 1/25 (Wednesday) Indicators of Disruption and Distress

*Question:* What are the types of innovations? What is the Altman Z score?

Reading: Christensen and Overdorf, Meeting the Challenge of Disruptive Change, HBR, 2000

### **Module 2: Operational Due Diligence (chapters 7 - 11)**

Session 6 – 1/30 (Monday) Case: ABRY Partners and F+W Publications

*Question:* Will you advise ABRY to file the lawsuit? Was ABRY defrauded?

Reading: Cullinan, Le Roux, and Weddigen, When to Walk Away from a Deal, HBR, 2004

Session 7 – 2/1 (Wednesday) Assessing the Risks

*Question:* What are the risks? How to estimate and measure risks?

Reading: Goodson, Read a Plant – Fast, Harvard Business Review (HBR), 2002

Session 8 – 2/6 (Monday) Assessing the Customer Base

*Question:* What should due diligence seek? How to measure customer profitability?

Reading: Kaplan, When to Drop an Unprofitable Customer, HBR, 2012

Session 9 – 2/8 (Wednesday) Case: Pilgrim Bank (A): Customer Profitability

*Question:* How do retail banks make money? How profit varies across customers?

Reading: Mittal, Sarkees, and Murshed, The Right Way to Manage Unprofitable Customers, HBR, 2008

### **Module 3: Operational Turnarounds (chapters 12 - 15)**

Session 10 – 2/13 (Monday) Linking Performance and Balanced Scorecard

*Question:* So we've invested. What to consider when forming a new strategic plan?

Reading: Texas Eastman Co. (in Course Reader)

Session 11 – 2/15 (Wednesday) Guest Speakers

Session 12 – 2/24 (Wednesday) Various Aspects of Turning Around

*Question:* So we've invested. How to turn around the situation?

Reading: Areva T&D (in Course Reader)

Session 13 – 2/29 (Monday) Case: Virginia Mason Medical Center (Abridged)

*Question:* What is Gary trying to achieve at Virginia Mason? How does TPS fit into the strategy?

Reading: Spear, Fixing Health Care from the Inside, Today, HBR, 2005

Session 14 – 3/2 (Wednesday) Final Team Presentation

## Appendix

<b>Marshall Graduate Programs Learning Goals</b>	<b>Degree of Emphasis (1=Low, 2=Moderate, 3=High)</b>	<b>DSO 563 Objectives that support this goal</b>
<b>Learning goal #1: Our graduates will develop a strategic level of understanding of the key functions of business and be able to comprehend the relationships between the core business disciplines in order to <i>make holistic judgments and decisions in analyzing business situations.</i></b>		<b>3</b>
1.1 Students will demonstrate foundational knowledge of core business disciplines, including their interrelationships.		3
1.2 Students will analyze business scenarios, such as cases, with a firm grounding of how each of the core fields play into decisions made.		3
1.3 Students will apply theories, models, and frameworks to analyze relevant markets (e.g. product, capital, commodity, factor and labor markets).		2
1.4 Students will show the ability to utilize technologies (e.g., spreadsheets, databases, software) relevant to contemporary business practices in a variety of disciplines and industries.		2
1.5 Students will demonstrate the ability to utilize interdisciplinary business skills in case analyses, exams, presentations and projects, including capstone projects.		3
<b>Learning goal # 2: Our graduates will develop a global mindset and a competitive edge in this interdependent, fast-changing, diverse and volatile world through structured educational opportunities. They will acquire knowledge, both theoretical and practical as well as experiential, about America and the rest of the world, and the economic/financial interdependencies that signify current geopolitical, economic and financial relationships that impact business decisions <i>so as to make a difference in the world.</i></b>		<b>1</b>
2.1 Students will understand how local, regional and global markets interact and are impacted by economic, social and cultural factors.		1
2.2 Students will understand that stakeholders, stakeholder interests, business environments (legal, regulatory, competitor) and business practices vary across regions of the world.		2
2.3 Students will demonstrate the ability to evaluate global business challenges and opportunities through experiential learning, immersion international trips, case studies, international business consulting projects and exams.		1



<b>Learning goal 3: Our graduates will demonstrate critical thinking skills by making the intellectual connection between quantitative and qualitative tools, theories and context to provide the basis for proper and effective problem solving and decision making as well as the development of new and innovative business opportunities to strategically navigate the complex demands of the current and dynamic national and international business environments.</b>		<b>3</b>
3.1 Students will understand the concepts of critical thinking, entrepreneurial thinking and creative thinking as drivers of innovative ideas.		2
3.2 Students will critically analyze concepts, theories and processes by stating them in their own words, understanding key components, identifying assumptions, indicating how they are similar to and different from others and translating them to the real world.		3
3.3 Students will be effective at gathering, storing, and using qualitative and quantitative data and at using analytical tools and frameworks to understand and solve business problems.		3
3.4 Students will demonstrate the ability to anticipate, identify and solve business problems. They will be able to identify and assess central problems, identify and evaluate potential solutions, and translate a chosen solution to an implementation plan that considers future contingencies.		3
3.5 Students will demonstrate the ability to be accurate, clear, expansive (thorough, detailed) and fair-minded in their thinking.		2
3.6 Students will demonstrate their ability to apply critical thinking tools and the USC-CT Framework in designated exercises, cases, projects and exams.		2
<b>Learning Goal 4: Our graduates will develop people and leadership skills by demonstrating self-awareness, emotional intelligence, curiosity, visionary and strategic thinking, teamwork, reflection and knowledge transfer skills to promote their effectiveness as business managers and leaders.</b>		<b>3</b>
4.1 Students will recognize, understand, and analyze the motivations and behaviors of stakeholders inside and outside organizations (e.g., teams, departments, consumers, investors, auditors).		3
4.2 Students will be able to demonstrate various emotional intelligences and leadership skills such as self-awareness, self-management, teamwork and collaboration to better understand the potential complexities in organizations in papers, exercises, cases, exams and projects.		2
4.2 Students will recognize, understand and analyze the roles, responsibilities and behaviors of effective managers and leaders in diverse business contexts (e.g., marketing, finance, accounting, etc.)		3

4.3 Students will be able to demonstrate the understanding of visions and values of world-class companies and the impact it has had on financial results.		2
4.4 Students will understand factors that contribute to effective teamwork.		3
<b>Learning goal 5: Our graduates will demonstrate ethical reasoning skills, understand social, civic, and professional responsibilities and aspire to add value to society</b>		3
5.1 Students will understand professional codes of conduct.		2
5.2 Students will recognize ethical challenges in business situations and assess appropriate courses of action.		3
5.3 Students will be able to apply ethical principles and professional standards in analyzing situations and making informed decisions.		3
5.4 Students will demonstrate an understanding of and consistently apply the ethical principles and professional standards related to the business world and show the ability to express and follow results of independence and the highest sense of professional ethics.		2
5.5 Students will demonstrate the ability to research, critically analyze, synthesize, and evaluate information, including professional standards for decision making, in the local, regional and global business environment.		3
5.6 Students will enhance their appreciation of values of social responsibility, legal and ethical principles and corporate governance through the analysis and discussion of pertinent articles and real business cases, seminars and summits.		2
<b>Learning Goal #6: Our graduates will be effective communicators to facilitate information flow in organizational, social, and intercultural contexts</b>		2
6.1 Students will identify and assess diverse personal and organizational communication goals and audience information needs.		1
6.2 Students will understand individual and group communications patterns and dynamics in organizations and other professional contexts.		1
6.3 Students will demonstrate an ability to gather and disseminate information and communicate it clearly, logically, and persuasively in professional contexts.		3
6.4 Students will be able to clearly communicate in oral and written formats the solutions to business issues and problems accurately and effectively.		3