JOHNS HOPKINS
CAREY BUSINESS SCHOOL

Networked Organizations

2 Credit hours

BU.921.610.G1
Global MBA, Spring 2013
January 23 – March 13, 2014

Room 230
9am-12pm

Instructor
Angelo Mele

Contact Information
Phone number: (410) 234 9435
E-mail: angelo.mele@jhu.edu

Office Hours
Tuesdays: 4:30-7pm, Room 1314

Required Text and Learning Materials

The following collection of chapters from textbooks and articles will be used as instructional material in the course. All the material is available in e-reserves.

Book Chapters:
We will read several chapters from "Networks, Crowds and Markets", written by David Easley and Jon Kleinberg. We will read the 1st Chapter of "Structural Holes: The Social Structure of Competition", written by Ronald Burt. It is recommended that you read Chapter 21 of "The Network Challenge", written by Franklin Allen and Ana Babus. Each chapter/book is available as e-reserve in Blackboard.

1. Easley and Kleinberg (2010), "Networks, Crowds and Markets", Chapters 1, 2, 3, 6, 17, 19, Cambridge University Press
2. Burt, Ronald (1992), "Structural Holes: The Social Structure of Competition", Chapter 1, Harvard University Press
3. Allen, Franklin and Ana Babus (2009), "Networks in Finance", Chapter 21 in "The Network Challenge", edited by P. Kleindorfer and J. Wind, Wharton School Publishing

Articles:

1. (optional) H. Chesbrough (2003), "The era of open innovation," MIT Sloan Management Review, Spring
2. Iansiti & Levien (2004), "Strategy as Ecology," Harvard Business Review, March
3. Porter, M. (1998), "Clusters and the New Economics of Competition", Harvard Business Review. November-December, pp. 77-90
4. Clive Thompson, Are your Friends Making You Fat?, New York Times, Sept 10 2009 http://www.nytimes.com/2009/09/13/magazine/13contagion-t.html?pagewanted=all
5. (optional) Africa Arino, Jose De la Torre and Peter Smith Ring (2001), Relational Quality: Managing Trust in Corporate Alliances, California Management Review, v4:1, pp 109-131
6. (optional) Aral, Sinan and Dylan Walker (2011), Creating Social Contagion through Viral Product Design: A Randomized Trial of Peer Influence in Networks, forthcoming Management Science
7. (optional) Aral, Sinan (2010), Identifying Social Influence: A Comment on Opinion Leadership and Social Contagion in New Product Diffusion

8. (optional) Cohen-Cole, Ethan, Andrei Kirilenko and Eleonora Patacchini (2011), Are Networks Priced? Network Topology and Systemic Risk in a High Liquidity Market, Working Paper UMD
9. Manski, Charles F. (2000) Economic Analysis of Social Interactions, Journal of Economic Perspectives 14(3), pp. 115-136

Additional notes, slides, tutorials, data and readings will be posted via Blackboard for each session. You are responsible for all the material assigned, including the slides.

Blackboard Site
A Blackboard course site is set up for this course. Each student is expected to check the site throughout the semester as Blackboard will be the primary venue for outside classroom communications between the instructors and the students. Students can access the course site at https://blackboard.jhu.edu. Support for Blackboard is available at 1-866-669-6138.

Course Evaluation
As a research and learning community, the Carey Business School is committed to continuous improvement. The faculty strongly encourages students to provide complete and honest feedback for this course. Please take this activity seriously because we depend on your feedback to help us improve so you and your colleagues will benefit. Information on how to complete the evaluation will be provided towards the end of the course.

Disability Services
Johns Hopkins University and the Carey Business School are committed to making all academic programs, support services, and facilities accessible. To determine eligibility for accommodations, please contact the Carey Disability Services Office at time of admission and allow at least four weeks prior to the beginning of the first class meeting. Students should contact Rachel Hall in the Disability Services office by phone at 410-234-9243, by fax at 443-529-1552, or email: carey.disability@jhu.edu.

Important Academic Policies and Services
- Honor Code
- Statement of Diversity and Inclusion
- Tutoring
- Carey Writing Center
- Inclement Weather Policy

Students are strongly encouraged to consult the Johns Hopkins Carey Business School Student Handbook and Academic Catalog and the School website http://carey.jhu.edu/syllabus_policies for detailed information regarding the above items.

Course Description
This course considers the evolving new models of innovation and value creation networks being introduced across different industries. Students will be exposed to quantitative tools and will learn how to perform rigorous analysis of such networked organizations. The theoretical concepts developed in class will allow participants to identify strategic opportunities for value creation and organizational improvement. The knowledge developed in the class will be applied to different contexts: social networks, product adoption, marketing, financial markets, firm alliances and collaborations.

Course Overview

Any business can be viewed as a process of value creation. The traditional value chain analysis allows us to understand where and how the value is created in the industry value chain. However, the value chain of most industries is taking the form of value networks, where the value creation occurs at various nodes on the

industry network. In addition, firms create alliances and collaborations to increase their opportunities and take advantage of synergies among them. Furthermore, the emergence of the online social networks - such as Facebook.com, Linkedin, Twitter - has created new marketing opportunities that have redefined the traditional strategies through which value could be captured. Finally, the recent financial crisis has shown how the complex interdependencies and connections among financial firms could give rise to unintended consequences, such as financial contagion or credit crunches.
These phenomena can be analyzed using the same analytical paradigm: the activity of value creation takes the form of a network. Therefore, a careful and rigorous analysis of the network structure will highlight opportunities for value creation and possible strategies for the appropriation of such value.
The topic is interdisciplinary: the course will use a mix of tools and concepts drawn from economics, sociology, marketing, finance, management and statistics. Students will be exposed to several theoretical frameworks and quantitative tools, which will provide the background for the rigorous analysis of networked organizations. Some of the questions a manager will be able to answer are: Where is the value created in the industry network? How can the firm participate in the value creation process? How should the firm capture the value created? How can a firm create and profit from an alliance? How can the firm facilitate the diffusion and adoption of a new product? What risks are embedded in the network structure? Which network structure facilitates knowledge and information diffusion?

Student Learning Objectives for This Course
All Carey graduates are expected to demonstrate competence on four Learning Goals, operationalized in eight Learning Objectives. These learning goals and objectives are supported by the courses Carey offers. For a complete list of Carey learning goals and objectives, please refer to the website http://carey.jhu.edu/LearningAtCarey/LGO/index.html.

The learning objectives for this course are:

1. You should be able to perform a quantitative and qualitative analysis of a network structure.
2. You should be familiar with the concepts of social capital and structural holes
3. You should be able to assess the viability of alternative strategies a firm or individual can follow to earn a profitable position in the network
4. You should be able to make economic decisions in markets with network effects
5. You should be able to evaluate alternative strategies for promoting diffusion in a network
6. You should be able to evaluate alternative strategic alliances
7. You should be familiar with the assessment of risk in a network

Attendance Policy
Students are expected to actively participate in class. Your success in this course hinges on your active engagement, which, at minimum, requires your regular attendance in-class and on Blackboard. I expect you to attend all 8 class sessions. If you miss a class for any reason you are still responsible for all information covered in class, both substantive and administrative, and must glean that information from a classmate—not from the instructor. Furthermore, assignments that are due must be submitted irrespective of your attendance. Participation includes students' cooperation in the class discussions, lectures, and presentations. Students are expected to show good behavior and attention to other students and to the professor. Talking and laughing with classmates, for example, is considered bad behavior. I reserve the right to randomly call on students to make sure everyone is on the same page. Be prepared for this, as it is an opportunity to shine.

Assignments
The students are expected to complete homeworks as a part of the course. At the end of the course, they will be evaluated on a Final Project.

Homeworks: There will be 3 homeworks, delivered through Blackboard.

Final Project: Students will work in groups of 5 to deliver a thorough analysis of a network. I will assign the groups at the beginning of week 2. By end of week 4, the group should identify the topic of the analysis, the data to collect and how to collect them; and what concepts and methods developed in class they will use. Students are required to write a 10 page project report on their analysis *AND* provide the code to reproduce all their results. During the last day of class, each group will present their work in a 20-minutes presentation in front of the class.

Evaluation and Grading

Assignment	Learning Outcome	Weight
Homework 1	1	10%
Homework 2	1,2	20%
Homework 3	1,2,3,4,5,6	20%
Final Project	1,2,3,4,5,6,7	50%
Total		100%

Important notes about grading policy:
The grade for **good** performance in a course will be a **B+/B**. The grade of **A-** will only be awarded for **excellent** performance. The grade of **A** will be reserved for those who demonstrate **extraordinarily excellent** performance. *The grades of D+, D, and D- are not awarded at the graduate level. Grade appeals will ONLY be considered in the case of a documented clerical error.

Tentative Course Calendar*
*The instructors reserve the right to alter course content and/or adjust the pace to accommodate class progress. Students are responsible for keeping up with all adjustments to the course calendar.

Date	Content	Reading	DUE
01/23/2014	**Lecture 1** **Introduction, Background and Examples** *Topics discussed:* • Overview of the class • Questions and Applications of social network theory	No readings for this week	
01/30/2014	**Lecture 2** **Quantitative network analysis** *Topics discussed:* • Methods: Theoretical and Quantitative analysis of networks • Quantitative measures of network structure • Clustering, Centrality, Homophily	1. Easley and Kleinberg, "Networks, Crowds and Markets", Chapter 1, Chapter 2.1-2.2; 3.1-3.2; 3.5 2. **`igraph`** tutorial	1. Install softwares **`R`** and **`RStudio`** on your laptop (details in Blackboard) 2. Go over the R tutorial
02/06/2014	**Lecture 3** **Value in Networks** *Topics discussed:* • Social Capital, Structural Holes, Closure, Brokerage • Clusters, Economies of	1. Iansiti & Levien, (2004) "Strategy as Ecology," Harvard Business Review, March 2. Porter, M. (1998). Clusters and the New Economics of Competition. Harvard Business Review.	**HW 1 DUE**

	agglomeration • Network Ecology, Keystones Strategies	November-December, pp. 77-90 3. Burt, Ronald, (1992), "Structural Holes: The Social Structure of Competition", Chapter 1, pp. 8-23 4. *(OPTIONAL)* H. Chesbrough, (2003) "The era of open innovation," MIT Sloan Management Review, Spring	
02/13/2014	**Lecture 4** **Creating optimal networks: models and empirical methods** *Topics discussed:* • Methods: Game theory Review • Models: Strategic network formation vs random network formation • Empirical analysis: logistic regression and ERGM • Example: R&D network alliances	1. Easley and Kleinberg, "Networks, Crowds and Markets", Chapter 6.1-6.6 2. Slides on Network formation 3. **`statnet`** tutorial	
02/20/2014	**Lecture 5** **Network Effects and Diffusion** *Topics discussed:* • Viral Marketing • Network effects • Diffusion in Networks • NPV of adoption networks	1. Easley and Kleinberg, "Networks, Crowds and Markets", Chapters 17.1-17.3; 19.1-19.5 2. (optional) Aral, Sinan and Dylan Walker (2011), Creating Social Contagion through Viral Product Design: A Randomized Trial of Peer Influence in Networks, forthcoming Management Science *Additional optional material* Lecture of Sinan Aral on Influence: http://videolectures.net/icwsm2011_aral_influence/	**HW 2 DUE**
02/27/2014	**Lecture 6** **Networks, Diffusion and Social Interactions** *Topics discussed:* • Word of mouth (WOM), Seeding, Public Broadcasting • Randomized Experiments • Empirics of diffusion • Diffusion of obesity: epidemics? • Product networks • Social Multiplier effects • Information transmission	1. Clive Thompson, Are your Friends Making You Fat?, (2009), New York Times, Sept 10 http://www.nytimes.com/2009/09/13/magazine/13contagion-t.html?pagewanted=all *Additional Optional Material:* Video of Christakis: http://www.ted.com/talks/lang/en/nicholas_christakis_the_hidden_influence_of_social_networks.html	
03/06/2014	**Lecture 7** **Other applications: Online**	1. Allen, Franklin and Ana Babus, (2009) "Networks in Finance," Chapter	**HW 3 DUE**

	social networks and finance *Topics discussed:* • Online virality: the story of 3 experiments • Financial networks and Financial risk • Group lending, Microfinance, Peer to peer lending	21 in The Network Challenge, edited by P. Kleindorfer and J. Wind, Wharton School Publishing 2. (optional) Cohen-Cole, Ethan, Andrei Kirilenko and Eleonora Patacchini, (2011) Are Networks Priced? Network Topology and Systemic Risk in a High Liquidity Market, Working Paper UMD	
03/13/2013	**Final Projects Presentations**		**FINAL PROJECTS, CODES and PRESENTATIONS DUE**