MECN 920
Risk Lab
Syllabus
Fall 2017
June 16, 2017 update

Background on the Risk Lab

The famous American Economist, Frank Knight said, "Profit is the reward for taking risk." Dr. Knight argues that profit and risk are intertwined. In seeking profits, we must therefore seek risks that are attractive. In the Risk Lab, students examine the attractiveness of risk in a real-world investment decision.

The Risk Lab is an experiential learning course, focused on evaluation of risks facing a company or business venture. Students will develop skills in performing **risk evaluations** in real-world settings. Special emphasis will be given to the investment in the venture, the risks and their impacts, and how to best communicate the impacts of risk when evaluating an investment decision.

Projects in the Risk Lab are sponsored by companies, offering students exposure to real-world business challenges, complete with complexities and other realities. The focus of evaluation in these real-world settings is not necessarily to avoid risk or even to directly reduce it, but rather to understand the risk and evaluate its properties, for the purpose of investment consideration. Such examinations may include, for instance, the impact of international economic changes, market trends, policy adjustments, and competitive action, etc. on the enterprise and its profit. The goal of the class is to develop skills in identifying risks, evaluating the nature and impact of risks, and gaining experience in communicating the impact of those risks in the context of an investment decisions.

Details on projects, companies, and information about selecting projects is available at:
http://kellogg.northwestern.edu/faculty/walker/htm/rl

READ THIS!!!!! Course Expectations

Risk Lab is an experiential class, with a strong focus on the application of risk management and market measurement in a real-world, client-facing, consulting environment. It provides an excellent opportunity for Kellogg MBA students to get real-world experience in consulting and in

applying risk management and risk measurement techniques to actual business challenges and opportunities.

In previous years, some students have expressed expectations of the course that are outside the scope of the class. Therefore, it is important to set some very important expectations in regards to this class:

- **The class does NOT involve lectures to present new theory or analytical techniques. This is by design and definition of the Professor, the MEDS Department, and the Kellogg School Dean's Office. Students seeking new analytical techniques or lectures on analytics, primarily, should consider other courses for that goal. This is a class on the application of risk management in a real-world, team-based environment.**
- **You will work in a team. Team dynamics will be instrumental in your experience.** It is important that you are available, accountable, dedicated, and willing to contribute in a team. In most cases, you get to choose your teammates. Be extremely open and honest with your teammates in terms of their contribution and hold each other accountable in a supportive and respectful manner.
- **The Professor is your advisor, coach, aide, and sounding-board.** He is here to help you in your journey through the project. **The MBA team is in a leadership role to execute the project, communicate and present to the client, and formulate recommendations.**
- The Professor can help you with reviewing risk management and risk measurement concepts, data visualization, consulting best practices, and most any topic that arises on the project. **Execution of the project is, however, the responsibility of the MBA team.**
- **Each project in Risk Lab is unique, real, and driven by an actual client-facing challenge or opportunity.** Your project will vary from others. Projects have different goals, different risk-focused opportunities, and clearly different clients. You can apply for the project(s) that most interests you.
- **Risk Lab is a lot of work, a lot of learning, and a lot of fun**. Many students consider it a top Kellogg experience. Be sure that your schedule, life, and other commitments permit you to get the most from the class.

Course Details

The Risk Lab is offered as MECN 920, a full credit course.

Projects in the Risk Lab are sponsored by Kellogg alumni, at very senior levels in their firms. Students taking the Risk Lab are assured a strong learning experience and a commitment from the firm to provide access to decision makers and information that will make the experience meaningful.

Details on projects, companies, and information about selecting projects is available at the end of this document.

Application Process

Students interested in the Risk Lab must submit an application for project selection.

The application permits optimal project assignment, based on student goals, client needs, and project requirements.

Applications are accepted by the Kellogg Experiential Learning system. Students should apply for MECN 920 via the Kellogg Experiential Learning System, at:

https://www4.kellogg.northwestern.edu/el/

The application start date is June 19.
The application close date is Jul 14.
Decision date is Jul 20 (before round 1 bidding)

- Resume or CV
- List of courses taken at Kellogg with grades
- Description of any professional Analytical Experience (no specific experience needed)
- Description of any professional Investment Experience (no specific experience needed)
- Reasons for taking the Risk Lab
- Goals for taking the Risk Lab
- Project Choice #1
- Project Choice #2
- Any fellow desired Kellogg student for a team (limit of one student to specify). Team member preference is only considered if both people select each other.

Student teams that are fully formed (a team of 4) are encouraged and will be given special preference. If you are forming a team and submitting as a team, do make that clear in the application and stress how your team has come to select the project and how it meets your goals.

Student information in the application process is used in formulating teams and assigning projects so that goals, backgrounds, skills, and expectations are all addressed.

Project Assignment

Student assignments to client projects will be based on individual preferences, requested skill sets and industry experience, and team member diversity. Every attempt will be made to grant students their first or second choice of projects. Student information is collected via the application. Students may select one fellow student for a project. This fellow student selection is honored as possible, if the both students select each other.

Students will be notified about their project assignments during the term before the class. All efforts are taken to accommodate first choices, while forming teams with an appropriate set of skills and interests.

Course Meetings

As with other experiential courses, the focus is on the team project and its delivery to the sponsoring company.

Teams will meet with the Professor on a regularly and frequent basis in order to discuss the analysis on the risk evaluation, flow of work, final presentation and delivery to the sponsoring team. The class will also meet with the prescribed schedule to review concepts and themes important in being successful with the developing a risk evaluation and in order to provide presentations for the purpose of group learning.

All Group Meetings are to be held with the team and the Professor at a pre-defined time that works mutually. Meetings with the Professor and Client must conclude before 4PM on weekdays. PTMBA students are welcome to the class, but cautioned on this scheduling constraint. PTMBA are further recommended to form teams.

Out class sessions are scheduled for Wednesday from 1:30PM to 3:00PM

Pre-term activities
- Project identification
- Team formation
- Identification of Team Liaison to Client
- Identification of Team Liaison to Professor
- Client Introduction
- Project description
- Schedule first group meeting with Professor
- Schedule first client meeting with Client

Week I:
- Class Session I (**Meeting as a Class)**
    - Developing a Risk Evaluation of an Enterprise or Business Venture
- **Special Session on Corporate Research with NWU-Kellogg Librarian 1:30-3:00**

Week II:
- Group Meeting I:
    - Developing a Work Plan, Project Analysis
    - Evaluation of Relevant Market and Economic Data

Week III:
- Group Meeting II:
    - Preliminary Analysis of Data
    - Teams to bring descriptive statistics to meeting with Professor
    - **Work Plans due to Professor**

Week IV
- Group Meeting III: Focus on Data and Analysis
    - Address questions and issues in analysis

Week V
- Class Session II (**Meeting as a Class)**
    - Mid-term progress review and **team mini-presentations**
    - **Mid-point document due at beginning of class**

Week VI
>   Group Meeting IV:
>   Mid-point feedback, planning for next phase

Week VII
>   Group Meeting V:
>   Used as needed per team project

Week VIII
>   Group Meeting VI:
>   Used as needed per team project

Week IX
>   Group Meeting VII:
>   Dry-run of presentation with Professor

Week X
>   Class Session III **(Class Meeting)**
>   Project Findings
>   **Final project deliverable due to Professor and Client on Nov 29, 2017**
>   **Meetings with Clients to be held and presentations made to client in person**
>   **during or before final week of classes.**

As in any professional consulting engagement, the students are requested to regularly meet with the client to receive input, data, direction of project goals, and feedback on the progress as needed. All clients are committed and dedicated to fulfilling the learning and business aspect of the project.

Teams may schedule additional time with the Professor as needed and as available.

Grading

Grading of the project is driven largely by the quality of the team project. The Professor will evaluate the project, its analysis, presentation, and delivery on the following major points:

- Analysis:
    - Quality of analysis (thoroughness, appropriateness)
    - Clarity and quality of model summary and description
    - Intellectual impact (was the analysis creative, novel, clever, or otherwise compelling?)
- Project Document
    - Quality of project description
    - Quality of analysis summary
    - Quality of recommendations and conclusions
    - Use of meaningful graphs, graphs, and presentation of data
- Presentation Documents
    - Quality of presentation
    - Professional impact of the presentation

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- o   Ability to communicate main points of the analysis and recommendations
- Team Meetings
  - o   Preparation
  - o   Organization
  - o   Progress

The Professor will ask the client company to provide feedback on the same above points.

Peer evaluations will also be collected from each member. Each student must rate their teammates on the following dimensions:

- Intellectual and creative contribution
- Workload and willingness to take initiative
- Organization, preparation, and availability
- Collaboration and respect for peers

Required questions are as follows:

- What did you and each person do well?
- What would you do differently going forward and would you ask of each team member going forward?

Peer Evaluations will be collected at the midpoint presentation and also at the end of the class. This is to provide teams and individuals an opportunity to address any team dynamic issues Peer evaluations will be on a 1-10 scale with 10 being excellent and 1 being poor. All peer evaluations will be treated confidentially.

All Risk Lab students must participate, as participation is also important to make this a meaningful learning experience for all involved.

Grade Breakdown

Professor Evaluation of Final project materials and presentation: 30%
Professor Evaluation of Work plan and Mid-point review: 20%
Client Evaluation of Final project materials and presentation: 10%
Peer Evaluations (*):   20%
Professor Evaluation of Preparation during meetings and class: 20%

* Note: The Professor reserves the right to adjust any student's final grade up or down by a full letter grade in the event that the student's peers unanimously score his or her contributions significantly above or below the overall team effort.

Role of the Professor

The Professor serves as an aide, counselor, and advisor for the team. The Professor does not conduct the analysis, but will provide detailed direction on approaches. The Professor does not serve as the team liaison or representative to the client. The team must organize itself and identify

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such a liaison. The Professor may accompany the team to select team meetings and or participate in calls, but the Professor cannot in practically, attend all such meetings.

In the event that the client or the Risk Lab student team encounter an incompatibility or encounter an issue, the Professor will intervene to remedy the situation.

The Professor may also resolve project assignments, as needed.

Role of the Team

The team will consist of 3 or 4 Kellogg MBA students working as a team to complete analysis, as defined by the client as agreed to before the start of the academic term.

The team should be mindful to control the amount of time that is required of the client. This means being prepared for meetings, having a designated liaison to schedule meetings, request information, and follow-through with next steps. This level of preparation and understanding is needed as most clients sponsor this project but do not allocate a full-time associate to work with the Risk Lab team.

The team should expect to contribute about 300-400 hours over the 10-week period to this Risk Lab project. This is a reasonable expectation for a team working on a project and is consistent with other experiential and lab courses at Kellogg. This translates to 8-10 hours per person per week.

The team will produce a white paper that documents the study, results, and recommendations. The team will also prepare a presentation and deliver it in person to the client and its team. A reduced version with emphasis on key findings is also to be presented at the last class.

Role of the Client

The client provides the real-world learning opportunity, data needed to complete the appropriate analysis, and feedback on the quality of the project and its analysis. The Client is not expect to solve the problem, but should provide ample expertise, data, and contextual information to the risk Lab team. The business challenge or opportunity provided by the client will reflect a real-world investment decision with risk evaluation core to the consideration of the risk.

Prerequisites

All students in the Risk Lab must have completed DECS core and have proficiency in spreadsheets. Your enrollment and selection of the project is subject to the approval of the Professor, based on courses taken and general performance in analytical courses.

Some FAQs:

What is the Risk Lab?
It is a course available to Kellogg MBA students that are interested in developing a skill in the evaluation of risks.

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What do you mean by Risk?
The consideration of risk is holistic. The risk evaluation of a business or venture may include many or a few key specific risks. Teams are not asked with managing the risk or even reducing the risk, but evaluating the risk and its attractiveness for investment.

How can PTMBA Students participate?

The Risk Lab is open to PTMBA students on a limited basis, subject to all meetings with the Client and Professor being conducted during normal business hours, which are taken as before 4PM on weekdays only. Please contact Dr. Russell Walker on any questions regarding your interest on the course. PTMBA students should organize in groups.

How can Saturday MBA Students participate?

At this time the Risk Lab is not available to Saturday MBA students, given the need to meet in person with the Client and Professor on a regular basis outside of the Saturday format of the Kellogg Saturday MBA.

How does this experience benefit the students?
Kellogg MBA students taking the risk Lab will work on a real-world challenge under the direction of a Kellogg faculty member. The opportunity to apply analytical theory and learn about a business, make recommendations, and bring together many aspects of their business education is unparalleled. We also ask that the students focus on how to communicate the results of analysis in the context of business decision-making. For students interested in moving to an industry to deep in analytics after graduation or developing new business skills in analytics, this course will be very attractive.

Majors that this supports
Analytical Consulting Major
Others may be possible based on the project nature

How does the Client benefit from this opportunity?
The Risk Lab is an intensive experiential elective that attracts some of our most analytically talented MBA students. It is expected that the student group will commit about 400 working hours to the project. Additionally, the student project will be overseen by a Kellogg faculty member that has expertise in risk evaluation and its application in business.

We expect that the project deliverables, recommendations, and report will provide direct value to your organization. However, we also believe that the project provides your organization and opportunity to determine how and where to invest in more analytics. If this includes the acquisition of more analytical talent, the project provides an excellent conduit to members of our student body that are talented and interested in this space.

How does the team work with the Client?
For the student team, the partnering company is a client. They will conduct their analysis and provide recommendations through a report and presentation in the same format and in the same manner as a consulting service. The faculty member also serves as an important liaison between the partner and the student, serving to manage time commitments and negotiate deliverables. It is

expected that the student team can meet with and speak with key members of your team that can help them answer questions relevant to the analysis.

Which software will we use?

Most of the analysis will be done in a spreadsheet environment. As needed, students may utilize STATA for statistical analysis.

What about the data?

To make this experience valuable to the students and the to solve the business problem at hand, we do need access to data. It is important that the data be available before the project begins. Additionally, the project should make use of "scrubbed" data, that is data that is free of specific information that would be sensitive or otherwise governed by a law, such as social security numbers of customers or names of customers.

Students may be expected to research data on markets, for instance, through the Northwestern Library.

What types of business problems can be considered?

As the class in focused on developing skills in risk evaluation, most business challenges will include some evaluation of a market or venture and the risks that could make the investment unpalatable. Projects might include risk evaluations of: market entry, alternative or novel assets, operational systems, partnerships, or market-changing products.

Will the analysis become public?

The work between the students and your organization is considered confidential. If necessary, the students may be asked to sign a non-disclosure agreement. If this is necessary, we ask that the non-disclosure agreement be such that it does not prevent the students from seeking employment or from building on their experience gained on the project.

From time to time, such company-student projects lead to very interesting business lessons. As a leading business school, we are interested in sharing such lessons with our next generation students and business leaders. We do this through business cases. If such an opportunity exists with your project, we will seek your permission to relate the business lesson through a case study.

How to I join the Class?

First, you must meet the prerequisites. Then submit your application to the Kellogg Experiential Learning application tool before the deadline (see above). The application is used to build teams, assign you to one of your top project choices.

Contact Information

Please contact Russell Walker, Ph.D.

Via e-mail at russell-walker@kellogg.northwestern.edu

or via phone at +1 847 467 2148.

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RISK LAB
CANDIDATE PROJECTS
FALL 2017

Welcome the Analytical Consulting Lab!

In the following pages, you will find candidate projects from sponsoring companies under the Risk Lab (MECN 920) for Fall 2017.

The projects listed include working with actual company data, developing meaningful analytical models for managerial decision-making, and presenting results and recommendations to company executives. Most projects will require some level of Non-Disclosure Agreement (NDA) with the sponsoring company.

A maximum of six projects, each with up to 4 members per team will be selected from the applications of teams. The following list includes more than 6 projects, allowing teams to select their most desired projects. No more than 6 projects will be selected, however. Teams should provide information on why they desire the selected projects.

More information about the class can be found at its website:
http://kellogg.northwestern.edu/faculty/walker/htm/acl/

Please feel free to contact me at
847 467 2148 or russell-walker@kellogg.northwestern.edu
with any questions and interest

Thanks for your interest.

Russell Walker, Ph.D.
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Moore & Warner Farm Management
www.moore-warner.com

About the firm

For over 160 years and six generations, Moore & Warner and its predecessor family entities have owned and managed farmland assets throughout the American Midwest and Great Plains. Today, Moore & Warner guides the acquisition and management of direct farm holdings for families, family offices, private investors, and institutions who prioritize the long-term wealth generation of steady-handed stewardship and progressive management. Moore & Warner also provides expert consulting services and project support to private equity, venture capital, and corporate clients who require the domain expertise and on-farm perspective to contextualize rapidly evolving opportunities in agtech, ag big data, and row crop production systems.

Project Description: Agricultural Land Evaluation Modeling

The volatility of today's commodity markets has increased the importance of commodity risk management and hedging for the farmers and landowners who derive their livelihoods from grain production.
That would take

1) The global Supply & Demand data on grain commodities (such as corn, soybean, and wheat)
2) Corresponding commodity price regimes (such as the current low commodity price regime versus the recent high commodity price regime of a few years ago
3) Risk-driven model and market assumptions on direct input prices,
4) Projections for crop yield increases due to technology and crop breeding,
5) Price basis data
6) An outlook on some set of other factors (e.g governmental policy, crop insurance, machinery expense, labor).

The output is a risk-driven evaluation of the price of agricultural land, and would be used for pricing of such assets.

The project is open to further exploration based on time and interest of the team.
This opportunity is sponsored by Jonah Kolb '13 who is also an alumnus of Risk Lab and founding leader of the Kellogg Food and Agribusiness Club. He is a great leader in agribusiness.

Moore and Warner is an alumni firm of the Risk Lab!

Microsoft
www.Microsoft.com

Project 1

Airlines Market - Disruption of value chain

Air travel industry is seeing an increasing global demand with shifts in global economic power, demographics and the accelerating urbanization in emerging economies. There many traditional challenges for the industry around cost, operations and customer engagement - fuel costs, operations efficiency, skilled labor and loyalty programs. Airlines are merging/ consolidating and adopting multitude of ways to go after revenue uplift through engaging customers and improving operations. One of the key dimension to the industry is its legacy context of operating environment - both the market they play in and the systems to work with the market. Many re-selling businesses and airlines have been trying to disrupt this operating environment - e.g. Southwest selling tickets directly to consumers; Fare shopping sites, etc.

This project will explore the risks potential of disruption or innovation on the market structure and operations for the airlines. Is the industry ripe for disintermediation of the sales and servicing? Is there an opportunity for the airlines to leverage alliances more effectively? One specific example of the market operations is GDS systems for fares and ticketing. Project will uncover/explore potential of disrupting the market structure and its feasibility - perhaps starting with Americas and then exploring wider scope of Europe and global.

Project 2

Blockchain enabling paradigm shift on Customer Loyalty

Customer loyalty and "stickiness" is a critical issue across almost all of the industries and services. Customer Loyalty leaders have addressed loyalty with company specific programs and associated inhouse solutions. These have been locked down, single providers of benefits (this airlines miles). Most of the industries are now trying to create a partner network for increased value and benefits to their customers. From business perspective, the executives are looking to constantly innovate and evolve company's loyalty programs to align better with the needs/demands and also create unique value postpositions in the partner/market eco-systems.

This project will explore the risks and possibilities of innovating and disrupting the Customer Loyalty space based on the Blockchain technology/concepts. Starting with envisioning the next generation of Loyalty programs/concepts and exploring feasibility of how Blockchain could be enabling and supporting the constant innovations in the programs while keeping the management and settlement simple from operations point of view.

Project 3

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Transforming Clothing Manufacturing from B2B to B2C

The clothing industry and specifically, the apparel knitting mills industry is ripe for disruption and transformation. The organizations within this industry typically sell to consumers primarily through distribution centers (i.e. direct eCommerce) and retailers, but are increasingly looking for opportunities to create a direct relationship with their consumers. Based on their current business models, they currently face many challenges in getting to know their consumer, building brand value with them, and selling directly to them:

·   They cannot control the buying experience at their retail partners

·   They currently do not have a view into stock levels at the retailers

·   They cannot dynamically adjust stock levels based on predicted demand (doing so, would require the retailers to "purchase" those additional products)

·   Selling directly to consumers through their eCommerce site is seen as competition to their retailers

Meanwhile, the industry is also facing multiple challenges:

·   Low or no growth

·   Heavy active consolidation (purchasing competitors to increase market share)

·   Price competitiveness

·   Investing in manufacturing automation and outsourcing (partially or fully) to reduce costs

Essentially, they are competing in a "Red Ocean" marketplace. This project would leverage a Design-Led Innovation approach to brainstorming how an organization within this industry could transform themselves, their marketplace, or their industry to drive value for their consumers and shareholders, while accounting for risks in such a transformatiom. We'll look across current innovations within and outside their industry in terms of new business models, value migrations, consumer trends and patterns. We'll also look into advances in technologies in areas such as predictive analytics, cloud computing, artificial intelligence, bots, social networking, and mixed reality. From our list of ideas, we'll evaluate each based on risks, investments required, and potential impact to shareholders, consumers, and their value chain.

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Edelman Risk Management
www.edelman.com

Risk Assignment

To evaluate a firm's readiness and risk for transformation.

Background

Close to 90% of organizations are amid transformations that have been caused by a variety factors including, for example, material change in employee expectations, greater regulation, misalignment between incentives and behavior, dated operating structures, sub-optimal processes, poor project management, top-down leadership and performance metrics. At the same, stakeholder expectations on performance, social responsibility, employee empowerment, digital sophistication, geostrategic fluency, and dynamic risk management have escalated dramatically. Therefore, 76% of enterprise transformations fail.

Next Steps

Using COMPANY of your choice, you have been retained by COMPANY to conduct an analysis of the failure rate in enterprise transformation as well as a rolling out an innovative design structure and methodology that will neutralize the risks that have generated such poor enterprise results. You will be working with senior level executives in a collaborative process to build out both your root cause(s) analysis and design structure.

The team will work with Harlan Loeb of Edelman associates (leading risk and crisis management firm) that is advising PayPal. Harlan is a long-time sponsor or Risk Lab and brings a great depth of knowledge and experience with risk and crisis management.

The team can consider the following firms:
- Walmart (top choice)
- United Airlines
- Uber (see: http://fortune.com/2017/06/05/uber-hires-harvard-leadership/)
- HP, Inc.
- John Deere
- Teva Pharmaceutical
- Twitter

The team will interact with Harlan Loeb of Edelman, who is advising these firms and has expert knowledge on the risk of transformation failure facing each.

Students applying should specify the firm(s) of their top choice to consider.

Harlan Loeb and Edelman are alumni of the Risk Lab!

Menus of Change
www.MenusofChange.org

Project Descriptions

There are multiple projects available with Menus of Change, a partnership between the Harvard School of Public Health and the Culinary Institute of America. Each looks at a critical input to the world's food supply. Risks associated with the use, availability, pricing, and environmental impact follow and will drive the risk-decision approach to the use of these food inputs.

This project is sponsored by Arlin Wasserman, a Founder and Director of the Menus of Change and sponsor of previous Risk Lab projects.

Project 1: Animal Welfare, Corporate Commitments and the Consumer Movement

Concerns about animal welfare along with the public health impacts of excessive antibiotic use have led a majority of the large restaurant and hospitality companies in the United States to make specific commitments to improve their suppliers' livestock production practices and end the use of some or all types of antibiotics within a few years. *Regulations in many other industrialized countries also are working towards similar outcomes.) Many of these commitments are now nearing their "due date" and rely on large livestock producers to transition and transform their practices, and commitments were designed often in cooperation with these same producers and the timelines they considered realistic.

But the latest US government studies (December 2016) show that antibiotic use in livestock production has actually been increasing. The question is: have livestock producers worked effectively to meet their prior commitments and timelines, or have they changed them in some way, leaving consumer-facing companies facing a "gap" or "hung out to dry" to use a more pejorative term. And what implications does this have for the consumer, animal welfare and public health interest groups and their collaborative approaches to engaging companies.

This project involves both mapping the changes in major livestock and restaurant company commitments and reporting on progress as well as recommending new strategies for both leading companies and public interest groups to help change the livestock industry. The evaluation should focus on risks to meat buyers for and for not adopting such new sourcing strategies.

Project 2: Industrial and Pastured Livestock and Dairy

Increasing consumer concern for animal welfare and a decline in the consumption of red meat are converging on the plates that the US grocery and restaurant industries sell to use each day. This many risk to the overall food supply chain and the industry. Animal welfare concerns are often addressed by switching from industrial or "factory" farming practices to approaches such as grass-fed, pastured, grazed and browsed operations that let animals live most of their lives in more natural settings. Those approaches also have lower yields and are often criticized for not

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being able to meet demand while industrial methods are associated not only with poor conditions but also the rampant use of antibiotics and water pollution.

The question simply put is where do the trend lines converge and when will changes in our diet make factory farming unnecessary to meet demand? Given the amount of farmland dedicated to producing animal feed for factory farming, a switch may also free up land for pastured production methods, and how big a change does consumers and consumer facing companies need to make, and if trends continue will we, or when will we, reach that point.

Project 3: GMOs and Value Creation? Has the technology created value or just shifted It?

How has GMO technology created value in the food and agriculture sector or shifted it among the major companies that provide farm inputs and also produce, process and market agriculture and livestock products. A recent study by the USDA Economic Research Service concluded that GMO soy and corn have not increased per acre yields over the past two decades but did increase the use of glysophate, a chemical pesticide in Round-Up that is now detected in breast milk and was recently categorized as a type 2 carcinogen by the World Health Organization. Earlier work by another ACL class indicates that GMO use also may be associated with foods that have greater price volatility, but this requires additional research.

For this study, the question is what changes have resulted for how the industry creates shareholder value as the GMO applications have created patentable intellectual property in the agriculture sector, which previously lacked vehicles to create value through information. Where has value, risk, and wealth shifted or been created by the advent of GMOs among companies that sit in the farm input sector and also among major food production/processing companies in the supply chain. How as intellectual property as a share of valuation for major companies in the food and agriculture segment shifted among supply chain segments, and/or has the introduction of patentable intellectual property created new value? Have GMOs impacted volatility for major companies in the supply chain and done so in a way that supports or hinders business outcomes?

Project 4: Sustainability, Transparency and Risk in the Food Industry

The food industry is at the intersection of some of the key risks impacting leading industries: Operational risk from climate and water constraints, reputational risk from poor labor and social conditions in supply chains, and financial risk from increasing volatility of key commodities. Some food companies are showing the strain on their bottom lines as supply chains grow more brittle while others are adopting new approaches that put transparency and corporate responsibility at the center of their strategies, creating vertically integrated "direct to farm" strategies like Mars and Starbucks which are investing in social development programs in key cocoa and coffee growing regions, Chipotle which selects the farmers its distributors and suppliers must work with, and others which are joining industry roundtables set up by global NGO's like Seafood Watch or WWF.

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While all show concern, this project is intended to determine what leading sustainable food and agriculture sourcing strategies may already be driving business success. The project would involve identifying a substantial universe of large US or global restaurant and consumer-facing food companies, probably publicly traded and with regular public reporting, developing a system to rate their strength of their programs for supply chain transparency and sustainable sourcing strategies they use, if any, and correlate these with their performance on key financial indicators (growth in shareholder value, revenue, profit) and also the rate of "surprises", or unforeseen problems, in their supply chain that they announce to the markets.

Teams should specify the project(s) of their choice.

MenusofChange.org is an alumni firm of the Risk Lab!

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Grange Insurance

www.Grange.com

Project: Evaluating Risks and Factors for M&A Activity for Grange

Background

Grange Insurance has been a leader in providing insurance for over 80 years and currently offers auto, home, life and business insurance products exclusively through independent agents. It serves customers across 13 states: Georgia, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia and Wisconsin. 750,000 + policyholders trust Grange with their insurance needs.

Grange's mission is to provide peace of mind and protection for life's unexpected events, and we hope to do that for as many consumers and businesses as possible. Today Grange writes $1.2B of premium with 70% coming from personal lines (auto, home and umbrella) and 30% coming from commercial lines (insurance for business owners). The company needs a more balanced mix of business to ensure financial stability going forward. Our vision is to be more balanced with 50% personal and 50% commercial lines by 2025, growing to $2B while continuing to be profitable throughout that timeframe.

Project Description:

We expect to achieve most of this balance organically by leveraging our ease of doing business, distribution management and data and analytics capabilities. But we also need to supplement the organic growth with other means and one potential option is through acquisition or affiliation with another property and casualty insurer. We would like to have research done and recommendations made on a potential inorganic growth strategy.

There would be several filters applied across product lines, geographies and risk types, all with the end goal of achieving $2 billion in premium with 50% commercial lines by 2025.

Your analysis should help answer the following questions:

1.   Based on the vision of the organization, what are the right filters to apply to the universe of potential targets for acquisition or affiliation?

2.   Once the filters are identified, which companies meet the basic criteria?

3.   For those that meet the basic criteria, which would be the best targets for Grange and why?

4.   How does each potential target match up on a variety of criteria including culture, mix of business, diversification of risk (geographic or product mix), system infrastructure, etc.?

5.   What are the companies that would be most highly recommended for acquisition or affiliation for Grange and why?

Fall 2017 Risk Lab: MECN 920

Department of Managerial Economics and Decision Sciences
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The Institute of EthnoMedicine

www.ethnomedicine.org

About the Project

The research of the Institute of EthnoMedicine has showed that cyanobacteria caused various neurological diseases. Cyanobacteria are photosynthetic bacteria of ancient date in the geological record. It is believed that cyanobacteria played a major role in generating the oxygen atmosphere of the earth. These cyanobacteria also occur in water bodies, like lakes and in particular, show large bloom cycles in the Great Lakes.

Neurological diseases that are believed to be caused by or otherwise amplified by cyanobacteria include ALS, Alzheimer's, Parkinson's and other tangle diseases. Data collected show a larger than expected occurrence of Alzheimer's in various parts of the US that use water supplies subject to cyanobacteria occurrence.

Due to the molecular size of the neurotoxin originating from cyanobacteria, most common water treatment processes do not adequately remove the neurotoxin from water. The Institute of EthnoMedicine has studied the neurotoxin, originating from cyanobacteria, and believed to be a factor in Alzheimer's disease and other neurological diseases and has developed a patented filtration process that would remove the neurotoxin molecules from drinking water. This project will examine the economics developing and selling such a filter. As the Institute of EthnoMedicine desires to learn more about the presence of cyanobacteria in drinking supplies and its role in neurological diseases, learning filtration deployment will be focused on providing a means for additional data capture.

This project involves building a business case, economic evaluation, deployment recommendations for the filter, and marketing messaging for the Institute of EthnoMedicine.

Given that cynabacgteria is common in northern lakes, including the Great Lakes during certain period of the year, the millions of people that drink water from these lakes are potentially at elevated risk for neurological disease. This project will focus on identification of the populations that are also at risk and suitable for use of the newly developed water filter system.

About the Institute of EthnoMedicine

"We have only one wish at the Institute for EthnoMedicine: to discover new treatments for serious illnesses. This focus has led to the discovery of two promising new drugs for ALS, Alzheimer's, Parkinson's and other tangle diseases. We have a third drug in development. Our novel path to discovery has been exciting. Each step of this path, beginning in Guam, has brought us closer to a cure." - Paul Alan Cox, Ph.D., Executive Director

The mission of the Institute for EthnoMedicine is to search for new cures by studying patterns of wellness and disease among indigenous peoples.

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A major research initiative at the Institute is to find and fight the causes of ALS and other motor neuron diseases. ALS (Amyotrophic Lateral Sclerosis), sometimes known as Lou Gehrig's disease, is characterized by death of motor neurons and muscle atrophy. Although ALS occurs at about the annual frequency of multiple sclerosis (MS), because of the lethal nature of the disease, it appears to be rarer since at any one time there only 25,000 patients living in the United States. Well-known examples of persons living with ALS include physicist Stephen Hawking, as well as the courageous professor with ALS portrayed in Mitch Albom's best-selling book, Tuesdays with Morrie.

The Institute operates a state-of-the-art Research Center in Jackson Hole, Wyoming. The Institute also maintains a close association with the University of Miami Miller School of Medicine, the University of Dundee, Scotland, Portsmouth University, the University of Hawaii at Manoa, Chiba University, Japan, Stockholm University, and the University of California, Berkeley. The Institute collaborates with anthropologists, botanists, chemists, linguists, microbiologists, oceanographers, neurobiologists, neurologists, and other physicians and scientists throughout the world.

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Project: Evaluating Risks from Impact Investing

Impact Investing - the process of investing capital with the dual purpose of producing financial returns and furthering a societal cause - has risen in popularity over the past decade. Asset managers have created new funds recently to target specific causes - such as literacy, gender empowerment, and environmental stewardship. Industry publications have loosely tracked the performance of these funds, but little discussion has been given to the risks associated with these investments. The allure and discussion of societal benefits often precludes a discussion of the risk of trying to do well with these investments. How can an investment advisor have an honest discussion with a potential investor regarding the risks of these types of investments, while still being sensitive to the causes the investors are pursuing? Risk is often defined as standard deviation or impairment of capital, does that definition need to change when financial return isn't the only objective? Are there certain investments or causes that are of a higher risk profile? How do impact investment returns generally correlate to other financial instruments (i.e. stocks) or indices?

The scope of the project would be to answer the questions above, while also providing a summary of the investment landscape for impact investing (e.g. sources of capital, causes/investments receiving capital, etc.)

This project is sponsor by Nick Maglio, alumnus of the Risk Lab, the ACL, and Kellogg! BBH is also an alumni firm of Risk Lab!

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About:
HighTower is a national advisor-owned financial services company serving high-net-worth individuals and institutional clients from our headquarters in Chicago and corporate centers in New York and San Francisco as well as branch offices nationwide. Our advisors are experienced investment professionals with large and established advisory practices.

By reinventing how advisors on the front lines of wealth management can best serve and protect investors, HighTower has created a financial services business model in a ground-breaking class all its own.

Unlike integrated brokerage firms designed to build and distribute financial products – which drives profitability for the firm, but not necessarily returns for the clients – HighTower puts financial advice at the center of its business model.

Open Source and Employee-Owned

HighTower's unique open source model means the entire financial services industry competes for our clients' business. The HighTower tool chest includes resources, research and technology. And as an employee-owned firm, HighTower team members have an equity stake in the firm and a vested say in how the business evolves.
HighTower's autonomy, combined with our access to Wall Street sophistication, truly sets us apart.

Project Evaluation of Equity Investments in the US and globally

The global economy is in unique situation. Energy prices are low and according to many forecasters, can be expected to be low for many years. Interest rates are low and in fact some economies in the developed work are seeing deflationary pressures. Agricultural commodities have delated in recent years. Essentially, costs to operate businesses are low, but earnings and growth are absent in many industries. Technology firms have enjoyed rapid increases in stock prices recently and investors have been very bullish on this sector. China's annual percent GDP growth is higher than the US or Europe, but it is slowing.

The team will examine the conundrum of the US and global economy for strategies to invest in equities. The task is to develop a thoughtful, risk-driven, approach to considering broad industry or sector investments (no necessarily individual firms). Moreover, the approach should be compelling and explain how current and changing marco-economic and demographic realities will likely impact the investments.

The project is sponsored by JR Gondeck, alumnus of Kellogg!