

---

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

---

# RISK LAB CANDIDATE PROJECTS FALL 2016

Welcome to the Analytical Consulting Lab!

In the following pages, you will find candidate projects from sponsoring companies under the Risk Lab (DECS 920) for Fall 2016.

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](mailto:russell-walker@kellogg.northwestern.edu)  
with any questions and interest

Thanks for your interest.

Russell Walker, Ph.D.  
Clinical Associate Professor  
Kellogg School of Management  
Northwestern University

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

# 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: Commodity Option Price Risk 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. Unlike financial investors or traders, however, farmers and landowners face both production risk (actually growing a field crop) and market risk (the price received for that crop) in raising corn, soybeans, wheat, and other commodity crops.

In 2015, a Kellogg Risk Lab team built a model and simulation with 10 years of futures market data to enable historical back-testing of various pricing/marketing strategies on the spot and forward/futures markets.

In a next phase of this project, the team will expand on this existing model to include options data and pricing to build a holistic risk management model that integrates the real-world financial tools we use in marketing grain: spot, futures, and options sales/positions.

In this project, the team will learn how:

- farmers sell their grain (and to whom);
- pricing the physical product and selling into the supply chain is related to Chicago Board of Trade prices;
- commodity exposure in an operating production business is different than in a pure trading environment; and
- Farm Bill programs and crop insurance impact profits and risk management.

The project's proximate goal is understanding and adding historical options (corn/soybeans puts and calls) data into the existing model, and testing various hedging strategies against historical data. 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!*

---

## **FALL 2016 RISK LAB: DECS 920**

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

---

# **NORTHSHORE HOSPITAL THE NORTHSHORE CENTER FOR SIMULATION AND INNOVATION [WWW.NORTHSHORE.ORG](http://WWW.NORTHSHORE.ORG)**

### **About**

The NorthShore Center for Simulation and Innovation (NCSI) at NorthShore University HealthSystem in Evanston, IL recently expanded its simulation center to 13,000 square foot, including 7 simulation rooms (2 fully operational trauma rooms, 3 patient rooms, and 2 operating rooms) and a surgical lab for advanced surgical training.

Our center is now in the top 5% nationally in terms of size for hospital-based simulation centers (ie not based directly on the campus of a medical school university campus) and our learner throughput is likely in the top 1% as we have 400-800 learners come through our center on any given month. We are multidisciplinary in nature with attendees from nursing, pre-hospital, medical students, residents in various fields, and attending physicians. As an institutionally based simulation center, our audience focuses more on "adult" learners (ie current practitioners - physicians and nurses) more than university-based medical school simulation centers who focus more on medical students and nursing students.

The nature of complex surgical operations involves many levels and types of risks. The simulation center is inherently focused on risk reduction and operational excellence. The project objectives focus on meeting these overall goals.

### Overview:

Medical simulation is a rapidly growing field dedicated to the goal of improving patient care. At NorthShore, we are committed to using these emerging technologies to improve education and patient safety.

NorthShore's expertise in practice and research, as well as our standing as a top-ranked teaching hospital, has driven us to further our commitment to simulation by developing the Grainger Center for Simulation and Innovation (GCSI).

This state-of-the-art, 13,000 square foot facility at NorthShore Evanston Hospital was specifically designed to host our multispecialty, multidisciplinary simulation center. Here, two programs provide complementary and collaborative health care education, training and research opportunities.

NorthShore's world-class Medical Simulation Program (formerly CSTAR—Center for Simulation Technology and Academic Research) is actively improving patient care, reducing healthcare costs and improving outcomes through innovative medical scenario simulation.

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

The Surgical Simulation Program is a leading-edge surgical training and innovation program that provides an expert resource for surgeons to train in established minimally invasive methods, and to develop and test new techniques and procedures.

GCSI uses simulation to help healthcare practitioners improve their clinical performance, reduce errors, and refine their teamwork and communication skills using a variety of simulation modalities including task trainers, human patient simulators, virtual reality and standardized patient actors.

The unique combination at GCSI of medicine and surgery allows for a new level of collaboration beyond most programs. The multidisciplinary lab encourages communication between a variety of specialties, providing enhanced knowledge and a ready dialogue to develop new applications for medical techniques.

### **Project 1a Description:**

- Analyze and identify the most cost effective ways to market the simulation lab. Identify opportunities for marketing, costs, and ROI. Determine key user groups and sources of funding.
- Review competing simulation centers to determine NorthShore's potential niche – and develop proposal for how to capitalize on strength.
- Create staffing and resource proposal to support identified growth opportunities. (a simulation of simulation!)

### **Project 1b Description:**

- Identify highest cost 'avoidable' risk events for NorthShore, and determine cost/benefit of systemwide simulation education.

#### Goals:

- Expand and grow simulation presence for GCSI both regionally and nationally
- Identify best-practice marketing for simulation

*Northshore GSCI is a alumni firm of the Risk Lab!*

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

# PAYPAL EDELMAN RISK MANAGEMENT WWW.EDELMAN.COM

### Assignment

John Donahue, non-executive Chairman of PayPal, has hired your consulting firm to develop a risk scorecard for the Board. Given the competitive market place anchored Apple Pay and a growth strategy that includes an aggressive acquisition campaign, the Board wants to ensure that its risk management rigor keeps pace with the pursuit of growth and opportunity.

### Background

In the spring of 2009, few tech companies were under greater pressure than online auction giant eBay. Competitors like Amazon cut into its market share, consumers had slashed their spending, and the company's stock was down more than 80% from its 2007 peak; eBay's then CEO, John Donahue, the former Bain chief, had a plan for a turnaround. Spinning off Skype and PayPal, both eBay subsidiaries, would raise needed cash and free up eBay to focus on its auctions and retail sales. Early in 2009, the board voted to divest itself of both units.

However, Donahue thought about spinning off eBay given what he considered to be obvious synergies between eBay and PayPal in an exploding mobile marketplace and thus convinced his board to rescind its decision to spinoff PayPal. Instead, PayPal was spun off six years later. Some insiders and analysts have claimed that eBay never took sufficient advantage of PayPal's "first mover" status by branching out or innovating and lost valuable time while rivals established themselves in payments and mobile banking. PayPal is moving quickly against numerous pressures to "make up for lost time."

### Next Steps

Representatives of the PayPal board would like to meet with you to provide a full briefing and discuss the development of the Risk Scorecard.

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 of Risk Lab and brings a great depth of knowledge and experience with risk and crisis management.

The team will interact with Harlan Loeb of Edelman, who is advising PayPal.

*Harlan Loeb and Edelman are alumni of the Risk Lab!*

---

## **FALL 2016 RISK LAB: DECS 920**

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

---

# **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.

### **Project 1: Antibiotic Use in Food Production: Does it “Cure” Risk?**

These use of antibiotics in livestock production, fish and seafood product, and now citrus production has been flagged as a public health risk by medical groups, the US Government and the World Health Organization Among others. More antibiotics are used in food production than to treat diseases in people and that has led to an increase in the prevalence of resistant diseases and a decrease in the effectiveness of medicines for people. At the same time, food producers have called the use of antibiotics critical to prevent the spread of disease in their herds and stocks. But those same producer communities seem to be increasingly rocked by fast-spreading resistant diseases like PEDV in pigs, sea lice in farmed salmon and EMS in shrimp among others. For consumer facing grocery and foodservice companies that buy and sell these products to diners and shoppers, does the use of antibiotics help manage risk in their supply chain or is it correlated with increasing risk compared to more traditional methods such as pastured and grass fed livestock produced without antibiotics and wild capture fishing. This project is intended to help major buyers understand how business risk plays into their decision about accepting antibiotic use in their supply chains.

### **Project 2: 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 the World Wildlife Fund.

## **FALL 2016 RISK LAB: DECS 920**

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

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 and correlate the types of supply chain transparency and sustainable sourcing strategies they use, if any, 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.

### **Project 3: Industrial vs 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. 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 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 do consumers and consumer facing companies need to make, and if trends continue will we, or when will we, reach that point.

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

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

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

## **FALL 2016 RISK LAB: DECS 920**

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

### **CUBA STUDY GROUP**

**WWW.CUBASTUDYGROUP.ORG**

#### **Project: Evaluating Risks and Factors of Success for Exportation of Organic Crops from Cuba to the United States**

##### **Background**

Private enterprise was expanded by the Cuban government in November 2010 as part of a process of reforms later outlined by the Sixth Party Congress in May of 2011. The reforms were designed to: raise labor productivity, reduce dependence on imports, increase exports, cut state payrolls, address unproductive land and regain lost capital available to industry. Many Cuban entrepreneurs are farmers and Cuba has cultivated a largely organic farming systems. With the rise in the desire for organically raised products in the US, there is an opportunity emerging to export Cuban organic goods to the US.

The market opportunity for Cuban agricultural exports to the U.S. depends the ban on those products currently in place. Cuban entrepreneurs may have the opportunity to leverage farming to bring prosperity to their families at a much needed time.

##### **Project:**

Focus on the effects that such trade would have on individual farmers and agricultural cooperatives, rather than state-owned enterprises. Separate your findings into five categories: sugar (raw and processed); citrus (limes, lemons, oranges, etc.); vegetables (tubers, squash, tomatoes, garlic, etc.); tropical fruits (bananas, plantains, mangos, mamey, papaya, etc.); and coffee. Determine whether using organic farming techniques to grow those crops would present a measureable increase in profits when exported to the United States.

Explain the obstacles in both countries that impede the export of bulk agricultural products to the U.S. Discuss the U.S. regulatory framework and trade barriers. Make sure to only address Cuba-specific barriers and not issues that apply to all countries seeking to enter the U.S. market (e.g. visa requirements). Also, describe Cuban infrastructure (roads, rail track, truck fleets, port facilities, refrigerated containers, etc.); lack of agricultural inputs (fertilizers, herbicides, seed stock, machinery, spare parts, gasoline, etc.); state control of the economy; tax policy; dearth of financing; and regulations. Finally, present policy recommendations for both the U.S. and Cuba that would facilitate the establishment of a market for Cuban agricultural goods in the U.S.

*The Cuba Study Group is an alumni firm of the Risk Lab!*

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

# AIG WWW.AIG.COM

## AIG Science Global Consumer Direct Marketing in Insurance

### **AIG Science:**

The Science team acts as the catalyst for evidence-based decision-making at AIG. Our interdisciplinary team applies scientific methods to decision making from a variety of fields, including: data science, statistical modeling, behavioral decision science, economics, and others. In partnership with AIG's business and functional areas, the Science team integrates conceptual thinking, data preparation, model development, research from external institutions, and solution implementation into one structured process.

### **AIG Travel Insurance:**

AIG Travel Guard specializes in providing innovative travel insurance, assistance and emergency travel service plans for millions of travelers and thousands of companies throughout the world.

### **The Project:**

Travel Guard Canada has a product called Visitors to Canada (VTC), which allows people visiting Canada to buy health coverage while in country.

Some of VTC features:

- Up to \$150k a year coverage for trips lengths of 7 days up to 2 years
- Visitors seeking a 'Super Visa' for a 2 year stay from the Canadian Government (e.g. Parents/Grandparents of recent immigrants) require a product like VTC
- We are not currently marketing this product's unique benefits to targeted customer segments.
  - Most likely customers are a highly targeted audience in geo-ethnic clusters over-indexing in certain cities in Canada, India, and China
  - Requires go-to-market strategy and advanced analytics to tease out who the right people are, what the right message is, and how/where to target them.

Working closely with AIG Science, Travel Guard CA, and Global Advertising, the project team will help build a robust and multi-channeled go-to-market strategy using mostly secondary & some primary research findings and advanced analytic modeling.

- Analysis of the market and competitive set for a similar product offering.
- Size of market and future forecast modeling
- Key players and AIG's right to win
- Find the likely customers and suggest strategies on how to reach them
- E.g. Demographic data, text mining of social media, case studies with impact
- Segmentations with differentiated, actionable marketing strategies
- Launch and execute an aspect of the campaign
- Subsequent analysis of high level anonymous campaign performance data and make recommendations for optimization

## **FALL 2016 RISK LAB: DECS 920**

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

# **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 study 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.

### **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.

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

---

**FALL 2016 RISK LAB: DECS 920**

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

---

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.

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

### BROWN BROTHERS HARRIMAN

**WWW.BBH.COM**

Brown Brothers Harriman (BBH) is a privately owned and managed financial services firm. We serve the most sophisticated individuals and institutions with expertise in Private Banking, Investment Management, and Investor Services.

Without the distraction of third-party shareholders, our interests are wholly aligned with those of our clients, and have been for nearly 200 years. Our success is driven by the success of our clients. We take a personal approach to doing business, with prudent risk management and the client's reputation and best interests at the core of everything we do.

There are multiple risk projects with BBH. Teams should select the Project(s) of interest in the application.

#### 1. Robo-advisors

a. **Situation/Complication:** Robo advisors – e.g. Betterment, Wealthfront, Personal Capital, etc. – have created a lot of discussion of “disruption” within traditional wealth management. Offering rock-bottom fees and intuitive interfaces, many industry pundits heralded a new norm in wealth management when these firms began offering services. Many traditional institutions have created their own digital offerings, or partnered with the bigger Robos, to offer them to their clients. However, some pundits are now saying that the Robos have hit their peak, and their ability to gather assets has not kept up with their operational costs.

b. **Question:**

- i. What is the strategic threat to traditional wealth managers, especially in the HNW segment, among the various types of Robo advisors? Has the level of threat increased or decreased in recent years?
- ii. What strategies can BBH undertake to capitalize on/partner with Robos? How might we mitigate the impact of Robos to our traditional PWM business if we don't choose to offer any types of these services?

c. **Guiding questions:**

- i. What are the specific categories of Robo's (e.g. wealth planning tools, aggregators, investment allocations, etc.)? Who are the biggest ones? What services do they offer?
- ii. Recently, how have all of the major wealth managers begun to incorporate aspects of these Robos into their offerings for HNW investors? How have they been priced?
- iii. What are the business models for incorporating a Robo into your wealth management platform?

#### 2. Young Entrepreneurs

a. **Situation/Complication:** Private banking (HNW) clients have typically been older demographics, reflecting the fact that extraordinary levels of wealth tend to take

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

decades to create. This has led to skewed product offerings in the industry towards later-stage-in-life goals and circumstances. Younger, first generation HNW individuals (under 35) represent a demographic with unique needs concerning not only their wealth, but also their (typically young) family.

b. **Question:**

- i. Is this a segment worth catering to?
- ii. What are the unique needs of this demographic - investment options and not investment options – in terms of wealth management? What constitutes a “right to win” for this market segment?

c. **Guiding questions:**

- i. How big is this segment? What industries (e.g. technology, services, manufacturing, etc.) are producing the most wealth?
- ii. What is the archetype of a HNW individual?
- iii. What other non-financial needs does a wealth manager/Private Bank need to consider when serving this segment?
- iv. How can Private Banking begin to engage in these communities?

3. **Emerging wealth (HNW individuals with \$3-10m in liquid assets)**

- a. **Situation/Complication:** Many of the world’s top private banks and wealth managers begin serving clients with a minimum account size of \$10m (some are higher still). Given that wealth can be accumulated over time, many private banks often wonder how to engage/serve HNW clients who don’t currently meet the minimum account size, but may meet it in the future. Private Banks often shun smaller accounts then lose the opportunity to serve these client, which, given the relatively small population of UNW individuals, represents big missed opportunity.

b. **Question:**

- i. What business models exist for “incubating” smaller clients? How can this be done profitably?

c. **Guiding questions:**

- i. How big is this segment?
- ii. How do other private banks/wealth managers handle this tier of wealth?
- iii. What investment options and level of service would constitute “table-stakes” for serving this industry?

*This project is sponsor by Nick Maglio, alumnus of the Risk Lab, the ACL, and Kellogg!*

---

## FALL 2016 RISK LAB: DECS 920

Department of Managerial Economics and Decision Sciences  
Kellogg School of Management • Northwestern University  
Professor: Russell Walker

---

# CLOSE 5 – EBAY MOBILE APP WWW.CLOSE5.COM

Close 5 is a location-based, mobile classified app developed by eBay, operating in major metropolitan areas, currently. The projects below look at risks facing Close5.

See below the two projects with Close5/ eBay Classifieds Group. Teams should specify their project(s) of choice.

### **Project (1) Future of the mobile classifieds industry in the US and globally**

Competitive landscape (Craigslist, FB Groups as marketplaces, all the new tech mobile app startups that have sprung up in the last 1-2 years)

What is the true size of the market in the US

Opportunity for Close5

What will this industry look like in the next 3 years

Competition has really heated up in the last one year. What will it take for Close5 to win in this industry - explore multiple options (remain US only vs. go global, vertical versus horizontal classifieds model; product versus marketing based growth; start monetizing versus keep growing user base, etc.)

### **Project (2) Mobile monetization:**

What are the different options, and how will they be different than traditional online classifieds?

What successful approaches are used by other companies around the world? What do the economics look like?

How successfully have ads, payments, verticals been implemented?

Risks associated with monetizing too early or too much too soon.

## The Investment Strategy

At Linkage Capital, we offer institutional investors hitherto untapped opportunities in developed, emerging and frontier markets to achieve significant, safe returns through our fund which invests in large-cap global, regional and frontier market companies that have proven track records for exploiting forward and backward linkages to the key drivers of GDP and disposable income growth in emerging markets. We particularly like frontier companies that are successful globally. We have dubbed them “*global emerging market (GEM) companies*”.

By investing in GEMs, our investors gain safe exposure to dynamic emerging and frontier markets, while also enjoying the many proven benefits of developed markets on the one hand, and investing in an emerging manager with deep insights into emerging markets, on the other.

GEMs tend to have world class corporate governance (and transparency), market volume and depth, and (sometimes) legendary capacity to gain market share and execute large multi-billion dollar projects in emerging and frontier markets – not only in the infrastructure sector, but also in the mineral, consumer and logistics space. We also like dividend paying GEMs

Linkage Capital occasionally finds isolated opportunities to invest in linked GEMs that have attracted private equity investors. Such companies tend to have significantly strong corporate governance, and potential for upside through exit or breakup value.

Linkage Capital seeks to diversify its exposure to emerging markets by investing in a wide range of individual global companies as well as exchange traded funds (ETFs) and fixed income (primarily sovereign and rated corporate bonds) while evaluating a linkage opportunity. Sometimes, Linkage Capital stays in cash to await the market to regain normalcy.

## Performance

The fund outperformed benchmarks for the emerging and frontier markets as illustrated below;



## Required

Prepare an investment model in excel workbook or any other platform that is easy to update. Coding and programming is encouraged but not required. The model should provide quantitative representation of the investment strategy, offer signal for opening and closing positions while balancing the allocations to ensure optimal risk level. The target annualized absolute returns is 25%. Historical data will be provided from Integratedbroker.com platform to allow analysis and back-testing of the model.

## Deliverable

Detailed model and a summary dashboard for management decision support. Model to agile- technically designed to be updated/rebalanced periodically (at least monthly) but with view of reset at year end. The model should allow for data scaling (addition of new positions). Simple to understand model that can assist the Chief Investment Officer and rigorous and compelling enough to investors.

## Contact

Mike Chitavi

Email: [chitavi@emlinkagecapital.com](mailto:chitavi@emlinkagecapital.com) or [mchitavi@gmail.com](mailto:mchitavi@gmail.com)

Date: June 20, 2016