Analytics Consulting Lab Syllabus Winter 2023
10-13-22 Update

Background on the Analytical Consulting Lab

The Analytics Consulting Lab (ACL) is part of the Foster experiential learning initiative. The specific interest in the Analytics Consulting Lab comes out of the deep demand for business leaders that can provide guidance in analysis and focus that analysis to specific business questions. Additionally, many recruiters and employers have commented that finding talent that bridges the business and analytical communities is difficult. The ACL strives to provide a real-world learning experience for students to work with sponsoring companies on business questions that revolve around analysis. Students work in teams using analysis (broadly defined) to answer current and important business questions.

Available Projects from the following Leading Firms:

Seattle Kraken
Tampa Bay Rays and Tampa Bay Rowdies
San Antonio Spurs
UW Beach Volleyball
Changing Tastes
Element Bars
Seattle Universal Math Museum
Philips Healthcare
Lawrence and Scott

Project descriptions follow herein.

READ THIS!!!!! Course Expectations

Analytics Consulting Lab is an experiential class, with a strong focus on the application of analytics and market measurement in a real-world, client-facing, consulting environment. It provides an excellent opportunity for Foster MBA students to get real-world experience in consulting and in applying analytics and market measurement techniques to actual business challenges and opportunities.

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. 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 analytics 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 regression, analytical 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 ACL is unique, real, and driven by an actual client-facing challenge or opportunity.** Your project will vary from others. Projects have different goals, different analytical opportunities, and clearly different clients. You can apply for the project(s) that most interests you.
- **ACL 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 ACL is offered as MKTG 535.
Most projects in the ACL are sponsored by Seattle-based firms, professional contacts of Dr. Walker, and alumni of the school, at very senior levels in their organizations. Students taking the ACL are assured a strong learning experience and a commitment from the firm to provide access to decision maker and information that will make the experience meaningful.

Application Process

Students interested in the ACL must select MKTG 535 during elective bidding. Once in the class, email Dr. Walker of your:

- Project Choice #1
- Project Choice #2
- Project Choice #3
- Any fellow desired student for a team (limit of one student to specify). Team member preference is only considered if both people select each other.
- Other information that you may wish to share in your application, personal goals, career aspirations, etc.

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

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, and only third if necessary. 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.

Case Packet and Readings
As this course is an experiential one, there are no specific cases to prepare. However, many students have looked for examples of companies that have excelled at Analytics. Also, as the course emphasizes consulting and best practices in a professional client engagement, there is a need to consider some of these best practices. Given this, the following text is recommended and optional:
   1) The McKinsey Way, Ethan M. Rasiel, McGraw-Hill
These texts are easily purchased on-line, so these are not requested in the bookstore.

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, 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 analytical consulting function 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

4:30PM on weekdays. Students who cannot make meetings in person are encouraged and welcome to join via telephone.

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
            Getting Started with ACL
            Managing Project Ambiguity
            Managing Teams
            Overview of the Consulting Approach
            Dealing with Data, Descriptive Statistics
            Using Tools: JMP, Excel, Tableau
Week II:

      Group Meeting I:
            Developing a Work Plan, Project Analysis
            Examples of Past Analysis
            Use of Graphics, Best Practices in Presentation of Data
            Building Points Through Analysis

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
      Group Meeting IV: Prep for Midpoint Check-in

      Class Session II
            Mid-term progress review and **team mini-presentations**
            Mid-point document due at beginning of class

Mid-point team and mid-point peer feedback due to professor

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

Week VII
  Group Meeting VI:
  As per team needs

Week VIII
  Group Meeting VII:
  As per team needs

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

Week X
  Class Session III
    Project Findings
    Final project deliverable due to Professor and Client on last
Wednesday.
    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
    - Ability to communicate main points of the analysis and recommendations
  - Team Meetings
    - Preparation
    - Organization
    - 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

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 ACL 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:	40%
Professor Evaluation of Work plan and Mid-point review:	20%
Client Evaluation of Final project materials and presentation:	15%
Peer Evaluations and Participation:	10%
Professor Evaluation of Preparation during meetings:	15%

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 analytical approaches. The Professor does not serve as the team liaison or representative to the client. The team must organize itself and identify 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 ACL 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 to 7 Foster 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 ACL team.

The team should expect to contribute about 400-600 hours (depending on team size) over the 10-week period to this ACL project. This is a reasonable expectation for a team working on a project and is consistent with other experiential and lab courses in other MBA programs. 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 expected to solve the problem, but should provide ample expertise, data, and contextual information to the ACL team.

Prerequisites

All students in the ACL must have completed a statistics class. There are no other requirements.

Some FAQs:

What is the Analytical Consulting Lab?
It is a course available to Foster MBA students that are interested in the use of analytics in business. Students must take specific prerequisites and have strong academic performance in such classes to take the Analytics Consulting Lab. Students work in teams to resolve a real-work business problem using analytics.

What do you mean by Analytics?
It is meant to be broad but includes the use of specific quantitative approaches, such as regression analysis, time series analysis, forecasting, market segmentation, data mining, optimization, logistical analysis, scenario simulation, and risk analysis, as examples. In

particular, we mean solving a business problem using data and applying one of these quantitative approaches.

How does this experience benefit the students?
Foster MBA students taking the ACL will work on a real-world problem under the direction of Dr. Walker. 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.

The Analytics field is one of the most demanded in the workforce and students have expressed deep interest in developing strong skills in analytics. This course meets an interest in our students and provides them an exceptional experiential learning opportunity.

How does the Client benefit from this opportunity?
The ACL is an intensive analytics elective that attracts some of our most analytically talented MBA students. It is expected that the student group of 5 will commit about 500 working hours to the project. Additionally, the student project will be overseen by Dr. Walker, who has 20 years plus experience and deep expertise in analytics 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?
It really depends on the project and your familiarity with software packages. This course is software agnostic, meaning most software packages are acceptable. The course does not have as a goal to teach a particular package, but rather to enable analytics in a business project. You are welcome to use software of your choice. Most projects can well be completed with a combination of Excel and one statistical package. If you are unsure

or unfamiliar with statistical software, we will discuss that during our first meeting. Some packages may have a minimal cost.

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.

What types of business problems can be considered?
As analytics is helpful in many business functions, we are open to many applications of analytics. Specific business problems in marketing, forecasting, customer segmentation, pricing, commodity analysis, logistics, risk management, operations, inventory leveling, supply chain improvement, and scenario planning are sure to provide great analytical opportunities.

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 project selections to Dr. Russell Walker upon entering the course.

Contact Information
Please contact Russell Walker, Ph.D.
Via e-mail: rwalker1@uw.edu

WINTER 2023 PROJECTS

Seattle Kraken

Marketing Analytics

Company Background

On December 4, 2018, the NHL granted the 32nd NHL franchise to Seattle Hockey Partners. Two years later, we revealed the Seattle Kraken brand to the world. As the newest addition to the Pacific Division in the Western Conference, the Kraken continues to prepare for its first puck drop in the 2021-2022 NHL season. In addition to the redevelopment of Climate Pledge Arena, Seattle Kraken are consecutively building their front office headquarters and training facility with three NHL regulation rinks at the Kraken Training Centre. This development represents not only further investment in making Seattle the epicenter of the Pacific Northwest but establishing a skating presence within the city for the first time in more than 40 years.

Problem/Challenge Statements

Project 1: Management of Arena Ice Time

Kraken leadership would like to better understand utilization rates of the three sheets of ice at our practice facility (KCI).

- What's the best mix of programming to generate both foot traffic and increase revenue?
- How does the Iceplex optimize product mix to increase revenue? For example, is an Open Skate available to the public a better use of ice time than drop-in hockey?
- Basically, one year into operation, the Kraken wants a better understanding of how to optimize ice time and programming at KCI to generate revenue but also engage the Seattle community.

Kraken tons of data to share on program revenue, ice costs, etc. to make this happen.

Project 2: 32 Bar & Grill

Regarding the restaurant at KCI, Kraken leadership wants to learn more about profit optimization of the menu.

- For example, which menu items are more popular than others? Which menu items have the best margins? How have fluctuating food prices impacted margins over the last year?
- How should the restaurant optimize its hours throughout the week – for example, would it make more sense to stay open later to host locals playing late night hockey at the facility or is the revenue generated from guys having a few beers not enough to warrant staying open?

- How does this impact fan experience?

This is a great opportunity to do a deep dive into the financials of the restaurant and its impact to the franchise, with clear financial wins to identify. There's nobody doing this for the Kraken, so this would be totally novel.

Teams may select from these two projects.

Alex Steinhoff (UW Foster MBA, Class of 2021 and ACL alumnus) will be the main point of contact for these projects!

Tampa Bay Rays & Tampa Bay Rowdies

eSports Analysis & Strategy Setting

The Tampa Bay Rays and Tampa Bay Rowdies are excited to explore a new avenue to connect closer with fans through the world of eSports. The interest in the gaming industry has seen a continued growth through newer technologies mixed with old nostalgic games. The intersection between gaming and sports is a vertical that has long been a passion amongst many traditional sports fans and the Rays are excited to bring the two communities closer than ever.

Gaming research includes:

- Researching various data points across the gaming industry and creation of heat maps with intel such as age, gender, demographics, etc.
- Identifying new and existing gaming communities and pattern recognitions that allows these communities to thrive
- Extensive research into the Pinellas and Hillsborough County demographics to identify trends that connect with gaming
- Research existing gaming verticals that are supported by professional sports organizations and creation of hypothesis and actionable suggestions
- Providing recommendations on new gaming challenges, rewards and product recommendations to enhance community engagement and the user experience

eSports is a new venture to the sports franchise, so if you think there's something missing, provide the leadership and help us set strategy!

The Tampa Bay Rays are an alumni firm of the ACL!!!

Changing Tastes

Food, And Environment Economics

Changing Tastes is a leading consulting firm that advises food producers, restaurants, chefs, and major institutions on the viability, economics, and impact of food practices that are better for people and the planet.

Project 1: Farming in the Blue Economy

Increasing ocean farming has been promoted as a solution to restoring ocean health, fishing economies now adrift as wild capture fishing declines, and to sequestering carbon. The only thing farmers need now is a market!

With abundant information about the harvest potential for farming off both shores of the U.S. and Canada (and expanding into Africa should the team desire) we will look to identify the industries that are best suited to handle the harvest, its variability, volume and price point necessary to grow the Blue Economy.

Underpinning this, Changing Tastes has completed an unprecedented survey of consumer and purchasing decision maker attitudes about seaweed as food for people and also has industry contacts with the handful of innovative companies leading technical development of seaweed farming.

Project 2: Certifications: Do They Create or Destroy Progress and Value?

Should food companies and brands use certifications to back up their sustainability claims? Does it lead to better business outcomes and create financial value, and does it also result in actual improvement and benefit to the environment? And is it still a preferred practice now that block-chain traceability is growing in implementation?

Third party verifications of food have a long history in the U.S. going back to the creation of kosher certification by the sheriff and rabbi of New Amsterdam (now Manhattan) almost 500 years ago. Halal followed the same path on an accelerated basis with Malaysia now being a center for global trade in halal certified foods.

In more recent decades, the US congress and the USDA set a national standard for organic which grew an industry with a market of US$ tens of billions while with the EU also established national and global standards for organic certification and the EU created a host of others. Third party standards like Fair Trade, Rainforest Alliance, Utz, Certified

Hume and a host of others have grown in marketplace presence and more recently the Marine Stewardship Council and a handful of others are now certifying fish and seafood and reaching into the ocean.

Of interest, independent standards like MSC are also independent businesses and have granted "exceptions" to compliance in order to secure market presence with key producers while other standards, like Kosher and Halal, are "black and white" about meeting them.

So here are the questions:

1. When a business relies on a third-party standard, does it result in better business outcomes? Does it help market entry, acceptance, sales, etc.? Does it affect brand value (do you trust the brand or the mark of the certifier), etc.

2. When they do so, does it drive improvement in environmental, animal welfare or other relevant areas of performance? Or are the standards more likely to confirm current practices.

3. Is there a model that works better than others (such as government managed, independent, etc.) in achieving sustainability outcomes?

Project 3: Where Should We Eat? How Will the Long-Term Effects of COVID19 Reshape the Consumer Food Marketplace in the U.S.?

The U.S. consumer food market is in the midst of a long term transition, which has been disrupted by our responses to COVID over the past several years and the incipient inflationary forces now in full bloom. For more than twenty years, Americans have spent an increasing share of all consumer food dollars on meals prepared by professionals, either in restaurants or ready to eat from grocery stores, and to do less cooking of recipes and purchase of individual ingredients. Before COVID, we had reached a point where over half our "food dollars" were spent on food cooked by professionals.

Then COVID 19 changed it all. Over 30,000 independent restaurants closed and many fear that more will close with each variant and wave of reduced occupancy or diner hesitancy. Whenever restrictions are lifted, Americans are again flocking back to restaurants, but labor shortages and supply chain disruptions have curtailed innovation in favor of "simpler menus."

Grocery shopping also changed, with prepared food counters, "grab and go" ready to meat meals, salad bars and much else closing due to safety concerns and dealing with supply chain issues as they work harder to keep existing products on shelves more than ever, leaving less capacity for new product innovation. There's also no sticking your hand into a tray of food at the grocery store and inventory management has taken a priority over finding shelf space for new items.

On-line grocery shopping is another COVID release valve, that so record growth during the spring of 2021 followed by sharp declines as restrictions were lifted during the summer of 2021. Few have stuck by their initial enthusiasm for online grocery shopping.

COVID also has accelerated a demographic change that supports these transitions. The Baby Boomer generation, which was most likely to cook at home, is no longer the largest by number or purchasing power. All generations decline, but the Boomers suffered more from COVID than other generations

This begs the question: over the next 3-5 years, where will we eat and who will do the cooking? And, based on that, what shall we eat? Or how are new foods successfully introduced?

For decades, the playbook for introducing new foods, producers, cuisines and other kinds of eating habits in the U.S.: have chefs at independent restaurants put something new on the menu, if it works, larger corporate restaurants copy them and offer it to millions of diners in a low risk environment: order it, see how its cooked and see if you like it. Then buy it and make it at home. In store sampling in grocery stores also helped with more familiar foods, such as items with new flavors.

With the impact of COVID how will new food products successfully enter the market, or "tastes be changed," in the post-COVID era? And what channels or market segments should new food entrants work with to introduce their products.

That's what this project will answer.

We have plenty of data about customer traffic and spending during COVID, and forecasts about the future of the consumer marketplace after COVID along with your best ideas and insights. We expect that by accessing third party databases like Crunchbase through UW, the team also can look at the launches by big and small food companies since March 2020, some of which "broke through" from on-line to bricks and mortar grocery stores and all which can be evaluated, as well as looking at parallels in other industries that relied on small retailers and "foot traffic" as the gateway to change.

Teams may select from these three projects!

Changing Tastes in an Alumni firm of the ACL!!!

UW Athletics
Beach Volleyball
Sports Analytics

Description

We record every point during a match into different categories depending on how the point was earned. From there we can use that data to show percentages in important areas as well as show how we compare to our opponents in 3 categories. These are important because every point within a volleyball match falls into one of these 3 categories.

1. Terminal Serving (TS)
2. First Ball (FB)
3. Transition (Tr)

Each team will have a score for each category that will explain how they did compare to their opponents.

For example:

School	Athlete 1	Athlete 2	TS	FB	Tr	Result	TS	FB	Tr
UW	Loreen	Robinson	4	10	7	W 21	+2	+2	-1
UCLA	#11	#14	2	8	8	L 18	-2	-2	+1

Some questions that we would love to have answered are:

Objectives

1. Identify a particular teams' strengths and weaknesses.
2. Identify trends that might reflect the impact of training on these categories.
3. Identify standards at each pair (1-5) that show a significance in a team winning or losing.
   The team will work directly with the UW Beach Volleyball coach and real team data!

UW Athletics is an Alumni Firm of the ACL!!!

Element Bars

www.elementbars.com
Health Bars, Production Analysis

In the food industry, the FDA sets a standard maximum allowable variance (MAV) for how much the actual net weight of a product is permitted to be under the declared label weight. Typical MAV for a product is around 9%. Food manufactures work to find an optimal balance to safely avoiding falling under this weight, while also producing the most output possible. As a food bar manufacturer, the initial goal would be to identify the mean of four of our most popular bars (listed below) vs the declared label weight of 26gs. Internal records of the daily baked averages for each bar can be used to sample the population and estimate the mean. Provide confidence intervals to show the range of the true mean. The estimated means and data provided can be used to find trends in yield and profit, and reveal opportunities for improvement. Data for the four food bars that will be provided: final production yields, daily baked averages, ingredient cost, rate, water activity

Legacy	Expansion
Apple Spinach	Blueberry Oatmeal
Banana Carrot	Banana Strawberry Sun butter

Some questions to consider:
How do the means of the different bars vary?
Is there a correlation to yield quantity based on what bar is being produced? How does that relate to the mean? Use production yield data to help calculate.
What bars generate the most profit based on ingredient cost, rate, yield, labor cost?
The four bars can be placed in to two separate categories, Legacy and Expansion. The most notable difference between legacy bars and expansion is the expansion bars have puree in them and the legacy do not. Water activity is historically higher in the bars containing puree. Are there noticeable trends in the data between the two categories?
Element Bars in an Alumni firm of the ACL!!!

Founder, Jonathan Miller, is a Shark Tank Winner – check him out!

Philips HealthCare
HealthCare Analytics

About Philips:

Philips is a global leader in healthcare, with businesses that touch patients throughout the care cycle. With a goal of positively impacting more than 3 billion lives over the next 5 years, Philips is committed to making the world a better place. Additionally, Philips continues to rank as one of the most sustainable and most innovative companies within the healthcare industry.

Overall project objective:

The objective of this project is to identify both micro and macro trends within the diagnostic imaging portion of Philips's portfolio. Specifically, you will have the opportunity to focus on CT procedure volumes in order to identify possibly inflection points or catalysts for future growth or decline. This information can be used to predict changes in the market and enable both improved positioning of current products and refinement of the product roadmap.

Note: the focus of this analysis is on CT procedures, though data will be available for other modalities and should also be used.

Expected outcome:

For this project, we are looking for a perspective on what drives a shift in CT procedure volumes. This will allow us to be more responsive and more consultative in our discussions with customers. It will also allow us to more proactively plan our roadmaps. A successful project will identify some procedures that grew or declined outside the expected value, and trace back the driver for that change. And/or, it will help to identify facilities or facility types that have experienced volume changes and focus on the drivers for these facilities.

Note: Given the timeline, it may only be feasible to target the micro or the macro questions. As such, it would be possible to split this into two projects for two different teams, or to select that one area that is of most interest.

Opportunities for students:

In addition to working through data and providing direction that could be incorporated into future strategy, students will have the opportunity to receive mentorship/guidance/information from a Foster MBA alumni. There will also be an opportunity to interact with other Director-level individuals within Philips through

interviews and presentations. Finally, for those that are interested in pursuing a career in healthcare, this will create an opportunity to build connections.

Data background:

In the United States healthcare system, in most cases hospitals and health systems are reimbursed for procedures and tests by an insurance provider (either public or private). To facilitate the reimbursement, the healthcare system will submit using either an inpatient or outpatient payment system (more details will be provided as relevant). The reimbursements are linked to a specific code that tells the payer exactly what the procedure was, and in what setting it took place.

Data overview:

For this project, we are able to provide data covering the past 5 years for all hospitals that are an approved CMS (Centers for Medicare and Medicaid) facility. This covers the majority of hospitals and health systems within the United States. In addition, we can provide the relevant procedure codes, and a backgrounder on the data itself. It will be provided in a .CSV format. Additional data can be requested and will be provided if available such as installed base information for Philips customers.

Questions to explore during the project:

We are looking for perspectives at both a macro (US Healthcare system) and micro (individual hospitals or health systems) level.

Macro questions could include:

· What procedures (by code) saw a significant increase or decrease vs. expected trends? What drove those changes?

· What are the impacts of medical society recommendations and guidelines on procedure volumes? At what point do we see widespread behavior change?

· What impact does CMS level reimbursement change have on procedure volumes?

· What has been the impact of Covid on procedure volumes, and what are the subsequent trends that are beginning to emerge?

· What are the catalysts for change in procedure volumes (e.g., growth/decline in parallel modalities (MR/Nuclear Medicine), clinical guidelines, regulation, M&A)?

· How do changes in other modalities (e.g., Nuclear Medicine, MRI) impact CT volumes?

Micro questions could include:

· What type of facility is most likely to be on the leading edge of adoption of new guidelines? What type is on the trailing edge?

· What is the impact of reimbursement changes on different types of facilities (e.g., National for profit IDN vs. critical access hospital)?

· What is the impact of acquiring new technology?

· What is the impact on procedure volumes when a hospital is acquired? Both for the hospital that was acquired and other hospitals in the same region?

The Philips Team includes multiple Foster MBA alumni and UW alumni. They are excited with work with ACL!! Philips is also an alumni firm of the ACL!

San Antonio Spurs Sports & Entertainment

Sports Operations Management

Company Background- Spurs Sports & Entertainment (SS&E) is a value-based and community-centric sports and entertainment company that provides premier live and global digital experiences for fans across a portfolio of three teams and two venues – all supported by a passionate staff of more than 1,000 full and part-time employees. SS&E owns and operates the San Antonio Spurs (NBA), Austin Spurs (NBA G League), and San Antonio FC (USL), as well as manages the day-to-day operations of the AT&T Center, Toyota Field and STAR Complex.

Project Background - For this particular assignment, we will be focusing on the need for event based part time staff at the AT&T Center. There are upwards of 650 part time staff that assist in the event day operations for all San Antonio Spurs home games and all concerts/shows at the arena. Events can be held every day of the week and are usually in the late afternoon or evening/night timeframes.

Part time staff positions include:

- Box Office staff
- Security personnel (bag check and in-arena positions)
- Ticket scanners/greeters
- Guest Service staff
- Ushers

Note – Parking lot attendants, concession workers and retail staff are also part time positions but are staffed by 3ʳᵈ party partner entities. Although they are not hired by SS&E, they are essential to gameday operations and fan experiences. The 650 part time staff mentioned above, is just for SS&E.

Scope of Work - The end goal for this project is to get a deeper, more wholistic understanding of our part time staffing needs and to be able to operate those positions in the most efficient way during events. The Fan, and their experience at the arena, should be at the center of all work, proposals and decisions.

Questions to consider:

- How do changes to part time staffing positions/needs affect the fan experience?

- Are the current staffing levels appropriate?
- What are the opportunities/constraints for part time labor seekers and the part time labor market?
- Could resources be better allocated? (Process automations, AI, etc.)
- What opportunities exist for hiring and retaining part time labor?

The San Antonio Spurs come to the ACL via a Foster MBA and ACL alumnus. They are excited to meet more Foster MBAs!!!

Lawrence and Scott

Marketing Analytics: Selling High-end Luxury Items On-line

Project description:

Lawrence & Scott is one of the longest-running Seattle original high-end luxury brand for home decor and lighting products "to-the-trade" since 1961 ("To-the-trade" means selling exclusively through interior designers). The new ownership acquired the business in 2019 and is looking to revitalize the business, and bring it up to 21st century. While the end-user clients "write the checks", most of the design decisions are made by the clients' interior designers. To raise awareness among designers, Lawrence & Scott has been doing in-person marketing and online advertising through Google Ads (to increase brand awareness) and Instagram/Facebook ads (to generate leads and sales). The project will identify the optimal mix of marketing methodology, based on previous Ads data, and includes market research to "crack the code" of this quickly changing market.

Impressively, Lawrence and Scott was named a top luxury retailer by Chairish in 2021 and 2020.

Leo Lam, PhD is the owner and is a UW and Foster alumnus! Lawrence an Scott is a alumni firm of the ACL!!!

Project Description for the Analytical Consulting Lab

After years of tireless efforts to get kids interested and engaged in math classes, Tracy, a passionate math teacher, was frustrated with the lack of field trip opportunities for her students: "Why do my colleagues have the opportunity to take kids to the art, history, natural history, and science museums, but I have nowhere to take my kids to play and experiment with math?? How are we supposed to help our kids appreciate the universal applications of math if there is no place that makes math fun, accessible, and engaging?"

Summ years later, Tracy Drinkwater founded Seattle Universal Math Museum (SUMM) – a nonprofit organization that has a mission to spark each and every person to love math. With such a mission, it was not hard to find passionate supporters, build a board of directors, and enlist volunteers. Now, all together, we are building a math museum – to create a better future where kids can become anything they want through math.

What have we done so far?

- We found over 30 passionate and talented individuals who comprise our board of directors, our advisory board, and a pool of volunteers who work on multiple committees, including exhibits, programs, and communications committees;
- We launched a Lunch + Learn bi-weekly virtual series where our founder, Tracy Drinkwater, tells our story, shares our progress, and spreads the passion for SUMM with the community;
- We started our seed fundraising stage at the end of the summer with the goal to raise $150,000, and are already more than one third into the goal;
- We curated and displayed an exhibit of mathematically-inspired art at a local gallery and ran our first awareness and fundraising event at the exhibition;
- We partnered with several local organizations, such as, e.g., Prime Factor Math Circle, and ran and planned summ joint programs to raise awareness about SUMM and raise funds;
- We started working with a design strategy consulting firm and completed our first workshop, where we created a project timeline, built an understanding of what it takes to build a museum (in sq. f. and $), and put together our preliminary project program.

What's next?

As we are working on the exhibit and concept development, we need help forming our strategy, business model, and business plan. In particular, should we focus on static physical presence, or should we supplement it with traveling exhibits, outdoor exhibits, museum van, etc.? How can we take advantage of what we've all learned and grown accustomed to during the pandemic, and create a hybrid model, such that the museum offers virtual tours, virtual programs, etc? What should be the revenue model (e.g. % fundraised, % from revenue-generating programs, rental, etc)? What is an effective outreach and marketing plan? What programs should we offer? What data should we collect and what KPIs should we use to help us make these decisions? For example, we have a good relationship with MoMATH, the only other math museum in the country, and they are willing to share data with us - if you formulate a data request, we should be able to get the requested data. Finally, what are the philanthropic opportunities (foundations, family offices, individuals, corporations) we should target and how our strategy can be supported by fundraising (which we perceive to be the main revenue source).

There are many questions that need to be answered and we will work with you to formulate the project scope with your interest in mind during the initial meeting. Dr. Masha Shunko, Associate Professor of Operations Management at Foster School of Business, is one of the board members at SUMM, and will be happy to talk to you about any questions you have about the project and SUMM. The project team will be invited to and encouraged to participate in SUMM events (next one scheduled Nov 5). The outcome of the project will be a presentation to the Board with key recommendations and reference materials.