LUBRIZOL

Engaging with Universities to Gain a Fresh Perspective to Understanding Problems

CLASS:
MIDS 420: Design in Management

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EXECUTIVE SUMMARY

Lubrizol, a designer and manufacturer of specialty chemicals for the transportation, industrial and consumer markets, is a leader in many of the markets it serves. Despite their success, Lubrizol is not terribly well known outside their industry. This can pose a dilemma where an organization can risk becoming trapped by their success. As Lubrizol has had the luxury of being able to hire the brightest and best, their perspectives within their areas of specialization can limit these individuals as well. When this occurs, what's needed is a fresh perspective to infuse the organization with new ideas and ways to find and solve problems.

Lubrizol recognizes this risk and has responded to this situation by creating a formal and structured process for problem finding that depends on employees and customers. While this may be an effective approach, its primary limitation is the method relies on the perspective within Lubrizol.

We would like to present our concept, the Lubrizol Challenge, which is designed to build relationships with university students and faculty to gain fresh external perspectives for solving Lubrizol problems.

DESIGN PROBLEM

Background

Lubrizol is a designer and manufacturer of specialty chemicals for the transportation, industrial and consumer markets. Currently, Lubrizol has two main divisions that compose their business: Lubrizol additives (LZA), which creates and manufactures petroleum additives for engines, transmissions, gears, industrial machines, fuels, and other oil products; and Lubrizol Advanced Materials (LZAM), which specializes in polymers, molecules, and chemicals that improve consumer and industrial products such as piping systems, shampoos, and inks. Lubrizol Additives is widely considered the market leader in lubricant additives and controls a plurality of market share in many of its end markets. Lubrizol Advanced Materials was formerly known as Noveon Specialty Chemicals and was acquired by Lubrizol in 2004. Previous to the acquisition by Lubrizol, Noveon was divested from B.F. Goodrich in 2001. Currently, Lubrizol
Advanced Materials plays in many fragmented markets but is growing market share due to acquisitions and new investments in research and development.

In 2011, Lubrizol was acquired by Warren Buffett’s Berkshire Hathaway, Inc. as an expansion of their portfolio. Management was left unchanged at Lubrizol and the company is expected to operate as an independent entity under the Berkshire Hathaway umbrella, as most Berkshire acquisitions do. At the end of 2013, Berkshire Hathaway also acquired Phillips Specialty Products, Inc., the pipeline flow improver business of Phillips 66 (which was formerly part of ConocoPhillips). While the intention is for the company to remain independent in the Berkshire Hathaway portfolio, it is being overseen by James Hambrick, the CEO of Lubrizol; and the company has been renamed Lubrizol Specialty Products, Inc.

This project is primarily designed to address the needs and requests of Lubrizol Advanced Materials and not those Lubrizol Additives, though we believe there is potential for the program to be expanded to or duplicated in Lubrizol Additives as well. Historically, Lubrizol has operated in a with separate organizations for both additives and advanced materials, with various business units responsible the development of their own products and processes; thus, we do not believe that this program should be implemented across both major business divisions, but later expanded if it is successful. From this point forward, please consider “Lubrizol” to mean Lubrizol Advanced Materials and not Lubrizol additives unless otherwise noted.

Core Issue

A challenge that Lubrizol faces stems from their own core competencies in research, design, and problem solving; being trapped somewhat by their own success into a worldview shaped by their relationships and abilities. The corporation as a whole can benefit from enhanced collaboration with university students, bringing additional, fresh perspectives on how to find and solve problems. Lubrizol creates and manufactures high-tech, science and engineering-intensive materials that improve their customer’s products in some way, shape, or form; but most students are unfamiliar with exactly what that means, even though they likely use products each and every day containing Lubrizol chemistry. Part of the challenge with creating these connections with universities will come from a necessary paradigm shift amongst students that helps them to understand the cutting-edge technology and tools that Lubrizol works with daily.

HYPOTHESIS
We have decided to break this down into two parts. The first portion represents what Lubrizol is currently doing to address the issue and the second part is what we’ve added to improve upon the problem provided.

**A. What Lubrizol current does to deal with the problems:**
Lubrizol has responded to this situation in the first instance by creating a formal and structured process for problem finding that depends on employees and customers. While this may be an effective approach, it’s primary limitation is the method relies on the perspective within Lubrizol.

**B. Our idea**
To build relationships with university students and faculty to gain fresh external perspectives for solving Lubrizol problems and to further position Lubrizol as an innovative company.

Both Lubrizol and CWRU possess significant amounts of talent, knowledge, and experience. Bringing the two together to collaborate on new ideas will be valuable for both parties, offering Lubrizol the creativity and fresh perspectives of students while bringing students the knowledge, experience, and opportunity of working with Lubrizol.

Lubrizol will benefit from more perspectives from university students because they possess a sense of creativity that is still new, fresh, and has not been tainted by a corporate culture. This fresh perspective can be applied to various parts within Lubrizol’s business and can help Lubrizol innovate both their products and their markets. Additionally, this allows Lubrizol to recruit and try-out future employees. For the university, there is an improved relationship with Lubrizol, potential new programming opportunities, and opportunities for their students to network and gain experience. Students will gain real world experience and provide them a fuller perspective on their career choice and future endeavors.

**CENTRAL PRODUCT**

**Program Introduction**

Our idea is to create the Lubrizol Challenge. You may be familiar with challenges in other parts of industrial sectors, including, Microsoft’s ImagineCup and NASA’s Mars Vehicle Challenge.

We feel that this would be useful for Lubrizol and help to position and create awareness of Lubrizol within the university community as well as gain fresh perspectives on problem finding and solving.
The Lubrizol Challenge is a two semester long program in which high performing students in the technical disciplines at CWRU gain a closer working relationship with Lubrizol employees on real-world business needs and problems. We have developed the program between CWRU as a pilot, however, we feel that once Lubrizol recognizes the benefits and value, the program can be launched with other local or national institutions.

The program is not intended to be an internship or co-op program, but a collaboration of ideas, skills, and research, which both university students and Lubrizol employees benefit from.

The structure of The Lubrizol Challenge is designed in order to maximize the quality of the students participating in the program while simultaneously generating interest from students through a “trickle-up” structure. There will be three distinct portions of the challenge spread across the school year, and each will have both and internal and external component. It will begin at the start of the semester with short, 30-60 minute challenges in which students participate in small teams. Due to the short amount of time, the objective of the initial challenges will not be to solve a problem, but to create a way in which the problem can be approached. Lubrizol can then take these ideas on how to approach and attack a problem and implement the ones they think will yield the best chance of success or examine the proposed ideas on a deeper level. A winning group of students will be selected and rewarded with a small prize from Lubrizol – either a monetary award or a product that contains Lubrizol chemistry, such as Under Armour® apparel emblazoned with a Lubrizol logo. Lubrizol would sponsor these mini challenges a few times over the first six weeks of the semester, giving busy students more opportunities to participate and develop an interest in the program.

Although this initial contest seems short, there is purpose behind method being used. Speaking with students in both graduate and undergraduate programs at CWRU, we learned that students look to test the waters of a program before they dive in head-first. Knowing this, it is important to build interest in both Lubrizol and The Lubrizol Challenge with a short, succinct experience in which success can be measured rather quickly, and then push the students to delve deeper if they so choose. The other consideration that led to the shorter timespan were comments that detailed how busy students in the STEM subjects are during the week between classes, labs, homework, and study time. A final and important lesson learned from the students was that sometimes they feel that their lives are filled with cold, hard science and engineering; and sometimes they need to take a short time to get away for a while, which led us to suggest that the initial challenges not be concrete and technical, but more abstract and focused on methods that can be used to approach problems and ideas.
In addition to the student side of the challenge, there is an aspect that must be fulfilled internal to Lubrizol as well. Being the sponsor of this challenge, they must provide challenges that the students can work on. At first, this seems like an additional task for employees that are already busy with their daily job responsibilities, but with some tweaks, it can actually be used to save the valuable time of Lubrizol employees. Not only can they leverage students, but by creating a knowledge and idea sharing medium internal to Lubrizol, members of different workgroups can share problems and ideas on projects that have not been undertaken due to ideas being yet undeveloped and possibly adjacent to current Lubrizol business activities. The medium used will be a collaboration website accessible by all Lubrizol employees internally and managed by one person who can determine what problems should stay internal to Lubrizol and which can be pushed out for CWRU students to examine in the initial phase of the Lubrizol Challenge, which is in effect a way for Lubrizol and Lubrizol employees to “outsource” parts of their brainstorming and benefit from the ideas that students can bring in. There will be a small external component to the website that the students will be able to access for the challenges that have been pushed out to them, and they will submit their responses in video so as to best illustrate and articulate how they would go about attacking a problem space or new idea. The Lubrizol employee who coordinates the website will pass on all valuable ideas to the appropriate functional groups or business segments and select the winning team of the challenge.

After the initial challenge generates interest from students, a more advanced challenge will be posed to those students who want to continue on in the program. For conservation of Lubrizol resources, the students who are participating in the more advanced challenge should have competed in at least two of the first-round challenges to demonstrate their true interest. The more advanced challenge would be more time consuming and would take place on a Friday afternoon, when most classes for the week have ended and working space is available in the university’s facilities. The length would be from 2-4 hours rather than 30-60 minutes, and it would consist of tackling an actual problem (possibly ones that were examined in the earlier challenge) and involve creating an innovative solution. Students would work in small groups in order to accomplish more than one person could individually.

This more advanced challenge is designed to be much more concrete in nature rather than conceptual, and involve students using a combination of their problem-solving skills combined with their technical skills that they have learned in their coursework. Lubrizol would provide the problems for the students to work on in the same way they did for the previous challenge, but a key difference would be the availability and more participation of Lubrizol employees in the process. Lubrizol employees who posed the challenge to the internal website could be instructed to provide a video or short presentation on the problem itself and what they are looking for, while also being available for a short period of time for questions by the students. Lubrizol employees would have the opportunity to
‘listen in’ as students work as well in order to determine which students have problem solving, leadership and communications skills that would be best to invite to the final portion of the challenge.

Students will benefit from this more advanced challenge by having the ability to tackle a real, albeit small, problem that Lubrizol faces and gain experience and exposure to Lubrizol employees. It provides the opportunity to practice what they have learned in the classroom, and once the challenge is complete, get feedback on their methods or results. For Lubrizol, it can serve to provide vital insights into student’s work methods, styles, and habits, and may even clue them in on new methods being taught at the university level. It can give Lubrizol the opportunity to display the type of projects they work on, and will allow them to create an open environment of communication between themselves and the university.

The purpose of this more advanced challenge for Lubrizol is to ‘weed out’ all but the best students with the most potential to bring value to Lubrizol in the final component of the Lubrizol Challenge, discussed below. Lubrizol will invite those students who they see fit to the final component, an independent study-style course.

The final component of the Lubrizol Challenge will consist of an independent study course for students working with a Lubrizol employee on the CWRU campus. Together, 1-2 students and a Lubrizol employee will work on real-world business problems in the employee’s domain. The purpose of the collaboration effort for Lubrizol is to gain from the students’ perspectives on their problems, while the students gain valuable experience working on the types of projects they may see in their careers.

As this is an independent study course, the students will work with a professor outside of their time with the Lubrizol employee to discuss their project and gain insights into current research or trends that can be valuable in working on the Lubrizol project. The student can then bring these ideas to their work to improve the overall product, bringing value to Lubrizol while Lubrizol brings value to them.

Earlier, we discussed how students desired shorter-term challenges due to their hectic schedules with classes, homework, labs, and study time. This led us to the design of an independent study-type, for-credit class. The independent study will provide the student a non-textbook based education while only using the time the student would normally spend for one course.

Although this final component may seem lengthy, there is purpose behind method being used. Speaking with students in both graduate and undergraduate programs at CWRU, when committing significant amounts of time to an endeavor they are looking for real-world value in their work. They are not looking for a prize or award, but real experience that they can put on a resume and discuss in a job interview. They are looking to develop and hone their skills to become better in
their area of study and to improve themselves for the future with a sense of satisfaction and achievement. Additionally, the students see value in a close, longer-lasting relationship with Lubrizol as a potential source of recommendations or interviews to start their careers.

Lubrizol can benefit as well, as when students do apply for positions, they will already have a resource who has worked first-hand with some of the applicants and who can make recommendations on whether or not to bring them in for an interview. Lubrizol will also benefit by removing Lubrizol employees from the office for a few hours and placing them in a different environment - a university environment - that can modify the way they think and approach different topics. Finally, Lubrizol will benefit from the help of the students working on Lubrizol projects, while costs for this component consist of travel expenses to campus and the opportunity cost of the Lubrizol employee being away from the office for half a day.

At the end of the independent study, ideally the project the student and Lubrizol employee have been working on will have reached a significant milestone in its development or have been finished entirely and ready to be used in the business. As discussed above, the student wants to feel a sense of achievement or success in their work, and reaching a point at which the project can make an impact will help to reach this goal. The Lubrizol employee should gain a sense of pride in that they will have mentored a student and potential future colleague in their development and helped to develop education that supports their Northeast Ohio community. Once the product is finished and ready to be used, the student should be sent the result of their work in the form of a finished product; if they helped develop a molecule for a plastic, they should be sent the product that uses that plastic with a note or certificate thanking them for their work. This will help to strengthen the emotional bond between the student and Lubrizol, and help them to reflect positively on their experience. Part of this is due to the fact that Lubrizol themselves do not make many consumer products, but to borrow a line from BASF, they “don’t make a lot of the products you buy. [They] make a lot of the products you buy better.” Making the student aware of the magnitude of their work, perhaps with a rather ubiquitous product like an Under Armour® shirt can make them feel a sense of achievement and success while allowing them to inform others of what Lubrizol does and how they contribute to hundreds of products they might be using every day.

**Program Overview:**

**Phase 1:**

These are very short challenges that will take 30 to 60 minutes to complete. There will be several challenge opportunities offered on a Friday afternoon throughout the Fall semester. These are designed to attract students to the
program. The challenges will be to identify a way to approach a problem in a specific problem space that has been provided by Lubrizol.

External - Students:

Students will access the challenge problems via an app and will respond to the requirements of the challenge, often by providing a video submission.

Students enjoy challenges where they can use their knowledge to make a difference on real-world projects. They have limited time, but recognize the value such a challenge can have on their future job marketability. While they might enjoy a challenge, receiving a small token for their efforts, should their submission be successful, will ensure a deeper level of satisfaction with the program.

Internal – Employees:

The problem space that will be provided to students is based on a secure internal website that members of the Lubrizol team can access and post problems that they’re working on where they either don’t have the time to work on or they would like a fresh perspective.

A moderator would have access to the website and identify problems that would be best to push out to the university space for students to work on.

Lubrizol will review the submissions and award the students who provided the best solution with a prize that contains some aspect of Lubrizol chemistry, for example; an UnderArmor shirt that the student will value.

Phase 2:

These are longer challenges that will take two to four hours to complete and will involve more interaction between students and Lubrizol employees. There will be several challenge opportunities offered on a Friday afternoon throughout the Fall semester. These are designed to attract students to the program. The challenges will be to identify a way to approach a problem in a specific problem space that has been provided by Lubrizol.

External - Students:

Students have an opportunity to work on a bigger problem that is closer to their career path and to gain real-world experience.
Internal – Employees:

After employees have received their first round of feedback on the problem space and approaches to solving problems, the Lubrizol can further refine the challenge. They can further narrow down the focus of the problem, which they will present to the students via video chat. This will encourage dialogue between students and employee to ensure that both parties have a mutual understanding of the problem and challenge.

The primary value of this phase is for Lubrizol to be able to “look in” and identify which students are producing the highest quality results. For recruitment this can be very beneficial.

Phase 3:

This will take place in the Spring semester and will consist of one or two students that were selected from the previous rounds and at least one Lubrizol employee.

External - Students:

This is an enhanced independent study that students will receive credit for and will be moderated by a faculty member. Students will meet with the Lubrizol employee to work on problems that directly connect to their mentor employee.

Given the amount of time a student participating at this level will be required to invest and the potential value their work will likely have on Lubrizol, it makes most sense to structure this phase as an independent study.

This is a wonderful opportunity for students to build their resume and establish relationships with a world-leader company. It gives the student a high level of visibility within Lubrizol that will give them an edge when looking for a position.

Internal – Employees:

Employees who participate in this portion of the program will participate on the CWRU campus. It will take them out of their normal workday routine, as they will do enhanced collaboration with the students.

Lubrizol will have an opportunity to work with the brightest and the best students directly on projects. This will help Lubrizol sift through and pre-quality highly competent students familiar with the company, who have a proven track record of quality as well as relevant experience. The long-term benefit of the recruitment
and selection for positions will be continuous each year that the program continues.

RISKS AND BENEFITS

We recognize that there are some risks as well as benefits with a program such as the Lubrizol Challenge.

We feel that the Lubrizol Challenge will offer Lubrizol an opportunity to engage with the university community in a manner that will provide fresh perspectives on problem finding and solving as well as further positioning Lubrizol as an innovative company outside of their current industries served.

On the surface, the Lubrizol Challenge serves to attract students to Lubrizol by showing them the products Lubrizol makes, the work Lubrizol does, and the methods in which Lubrizol does work. It will help to build brand of Lubrizol as a potential employer, producing benefits in attraction and recruitment of the best candidates CWRU can offer for internships and entry-level positions within the company.

Delving deeper, this partnership serves to build a bridge between Lubrizol and CWRU talent, research, and knowledge; producing real benefits through collaboration of ideas, outside perspectives, and student involvement in Lubrizol projects. As a research university, Case is on the cutting edge of research in many areas that may be able to improve the products and processes that the student-employee teams are working on.

Finally, the Lubrizol Challenge effectively brings outside perspectives to Lubrizol, which can enhance their ability to find problems that may be outside of the scope of their formal, structured method. It will help to prevent Lubrizol from being blinded by their own successes in technology and innovation by ensuring that an untainted, outside view of possibilities are represented in their work.

From a cost perspective, this program will minimally impact current budgets. A significant cost that is incurred will be from the creation of the internal system or website that Lubrizol employees use to post and comment on problems. In addition to this website, someone will have to be responsible for maintaining and facilitating the selection of problems for posting out to Lubrizol students engaged in the initial rounds of the Lubrizol Challenge. Employee travel will be a small expense, but there is risk or opportunity cost involved in employees being away from the office for a half day during the independent study. We believe that this program would work best if it were first piloted to test its efficacy at a minimal
cost and scale while ironing out the many details that are involved with such an endeavor.

Although we believe this program will ultimately be accepted inside of Lubrizol by the majority of employees, it may take time to get buy-in from the individual employees who will be responsible for posing problems on the internal website and working with students on the more advanced challenges. We believe there are benefits in helping to find and solve their problems, reducing workload, and connecting with outsiders to bring new perspectives to their work.

We believe that the benefits outweigh the costs. There’s a possibility that the Lubrizol Challenge will encourage interaction within Lubrizol itself and across the areas of specialization. Furthermore, this program will help to create awareness among Lubrizol employees of the value that garnering different perspectives can have on finding and solving problems.

CONCLUSION

To summarize, this is a year-long challenge with three kinds of interactions taking place between Lubrizol and the CWRU students. The recommended pilot program will be between CWRU and Lubrizol, however, this can be launched on a larger scale to include other local and national universities as well.

We feel that the Lubrizol Challenge augment the current formal and structured methods used to find and solve problems at Lubrizol. It will offer an opportunity for Lubrizol to engage with the university community in a manner that will provide fresh perspectives on problem finding and solving as well as further position Lubrizol as an innovative organization.

Internally, this program will help to create awareness among Lubrizol employees of the value that garnering different perspectives can have on finding and solving problems.

In the end, we believe that the Lubrizol Challenge can serve as a thread that binds employees together as part of an organization that works to further support a culture of innovation across and between areas of specialization.
APPENDIX

Please find additional materials that may be useful.

LOGO:

![Lubrizol Challenge Logo]

WEBSITE DETAILS:

These are to illustrate the type of information we see as necessary to include in the proposed website and app.

![Lubrizol.video.com Website Screenshot]