Marketing Plan

for

Year 4 of Challenge X

from

The University of Tulsa

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University of Tulsa
Challenge X Marketing Plan

I. Executive Summary

The University of Tulsa (TU) Challenge X team has redesigned a stock 2005 Chevy Equinox as a parallel-through-the-road hybrid vehicle. The front wheels are powered by a GM 1.9-L diesel engine, and the rear wheels are powered by a Siemens electric motor. The removable H_{TU}Go skid uses Ballard Nexa hydrogen fuel cells to provide additional power. The vehicle can be operated in diesel-only mode, electric-only mode, or hybrid mode to minimize fuel consumption and emissions. The car has a six-speed manual transmission. When operating in electric-only or hybrid modes, the vehicle behaves more like an automatic transmission at low speeds. It has a touch panel computer that has live information about the status of the car. The vehicle has all the standard features, but has been modified to be more environmentally friendly.

The marketing goal is to hasten the public acceptance of renewable fuels in a comprehensive energy market. To do this we plan to educate potential consumers with the greatest influence in our communities. To guarantee long-term success of our goals, we will also target K-12 audiences.

The strategy is to tie this in with the Oklahoma centennial celebration. Our mission statement is: "Oklahoma's first century was fed by petroleum. We are seeking a more varied diet for the next 100 years." This also relates to the Tulsa mayor's current campaign to seek out renewable sources of energy for city vehicles and buildings.

Opportunities to reach the decision makers and other influential individuals will be sought out. We plan to schedule appearances at public events and request opportunities to speak to civic groups and professional societies. To educate K-12 students we will plan fun hands-on classes that help them understand what sustainable mobility is, and the importance of new technologies. We will promote our online educational games through local teachers, Girl Scouts and Boy Scouts. We will issue press releases to seek out media coverage, so that the general population can learn about the project and the importance of reducing emissions and fuel consumption. By educating this group of people, hopefully our nation will start leaning towards this new technology to improve the future of our environment.

The University of Tulsa team recognizes the growing influence of the Hispanic population. Therefore, our team website will be available in both English and Spanish so that the community can have access to more information about what we are doing. Media releases will be in English as well as in Spanish to reach the growing population of non-English speaking residents.

II. Team Description

The University of Tulsa is a small, private university located in Tulsa, Oklahoma. Our team ranges from freshmen to graduate students and is made up of mostly engineering majors, with a few English and business majors . The team is unique among the Challenge X teams in that there are nearly as many female team members as male team members.

III. Team Objectives

Mission statement: Oklahoma's first century was fed by petroleum. We are seeking a more varied diet for the next 100 years.

Marketing objectives: Educating adults that shape the opinions and trends in society will have the greatest impact on future acceptance of renewable fuels. Emphasizing the advantages of having a variety of energy sources will promote the team's goals. To ensure long-term acceptance of our goals and to encourage talented individuals to study engineering in the future, the Tulsa team will also reach out to K-12 students. Educating students by hosting fun, hands-on classes at TU and by hosting events for groups like Girl Scouts will help promote the message and idea of sustainable mobility. Using various forms of media, like the newspaper and local news stations, information about the project, and its objectives will be spread. Utilizing the growing population of non-English speaking residents, our website and most material will be available in Spanish.

IV. Environmental Scan and Situational Analysis

a) Vehicle Analysis (SWOT)

Strengths: The University of Tulsa team is fueled with B20 and hydrogen. The B20 fuel is a blend of traditional petroleum diesel with 20% biodiesel. This renewable fuel can be created from crops such as soybeans. Diesel vehicles maintain the power that consumers desire with a lower fuel consumption than traditional gasoline engines. With a urea-injection system for scrubbing the exhaust, the emissions from a diesel vehicle may be significantly lower than traditional gasoline engines.

The vehicle also uses gaseous hydrogen in a removable H_{TU}Go fuel cell skid to provide clean electrical power. Fuel cells convert hydrogen to electric power more efficiently than engines produce power. The only exhaust from a fuel cell is water. Since there are few moving parts, maintenance is minimal.

Another feature of the car is the "city-standard" feature meaning that while driving in stop and go traffic, the car drives like an automatic, so the vehicle does the clutching. The car is equipped with a touch panel, known as the "TUCX panel" which gives live information about the car. Painted in the school colors of gold and blue, the Equinox is quite the head turner, and comes

equipped with satellite radio and OnStar. Performance and safety have not been sacrificed for the sake of the environment.

Weaknesses: Biodiesel is slowly becoming available in Oklahoma, but it is not universally available. Hydrogen, which has a lower energy density than liquid fuels, is not available to consumers in the state of Oklahoma. Fuel cell technology is not well-known, which may create skepticism among potential consumers. Also, the H_{TU}Go skid takes up much of the cargo space. This hydrogen system uses in-development technologies and, therefore, is quite expensive. Our vehicle, if on the market, would be more expensive than its counterpart, the regular Chevy Equinox, because of the additional powertrain equipment.

Opportunities: As gasoline prices continue to rise and more gas stations are introducing ethanol and biodiesel blends at the pump, public interest in alternative fuels has increased. Our vehicle uses traditional petroleum-based fuels in combination with a renewable plant-based fuel and clean hydrogen. Ongoing research is searching for ways to reform liquid fuels such as ethanol into hydrogen on board the vehicle. This would eliminate the need for hydrogen filling stations. Since the removable fuel cell skid produces 120 VAC electricity, it may be used to power household electronics. The flexibility of the TUCX Equinox gives the team opportunities to introduce a wide range of fuel options and inform the public about fuel cell technologies.

Threats: Without supporting hydrogen infrastructure in Oklahoma, the H_{TU}Go skid becomes a liability. Although the system is very safe, the public still envisions the Hindenburg whenever hydrogen gas is mentioned. Overcoming these obstacles will be challenging.

b) Issue analysis

Hybrid vehicles are generally more expensive to purchase than a regular vehicle, but in the end, the because the extra money spent in the initial purchase is eventually exceeded by the amount saved for every gallon of gas bought.. Emissions are lowered because the car is not always using the gas-powered engine, and therefore, it is better for the environment. Even though biodiesel and hydrogen are hard to find in Oklahoma, the car can run on regular diesel fuel and can run without the hydrogen system. Removing the optional hydrogen system creates instant cargo room.

c) Industry analysis

Increased fuel prices and environmental regulations are the driving forces behind the vehicular improvements generated by the Challenge X project. Oil prices are at record high levels. Corn production is also at an all time high as prices for corn have increased with the emerging biofuel demand. As more ethanol plants are being constructed, the price of bio-fuels will continue to drop as oil prices are increasing.

General Motors has a new solar-powered hydrogen production facility that uses renewable solar energy and water to create clean hydrogen gas. If this proves successful, it will mean that clean hydrogen fuels may become available in Oklahoma in the near future. Ethanol and biodiesel are both used in automotive fuels today.

d) Customer analysis

Automotive customers want quality, safety and reliability at a reasonable price. A survey is currently available through the University of Tulsa network and on the TU Challenge X website to gather more data for analysis of the Tulsa market.

The target audience for our marketing efforts come from two groups: influential adults and students ranging in age from 5-18. Marketing surveys by Roper have shown that influential adults tend to be more environmentally-conscious than the general public. In fact, 9 out of 10 take an active stance on environmental issues. These individuals should be receptive to our message. Besides informing them of the energy alternatives available for today's vehicles, we also aim to emphasize that hydrogen is a safe fuel when the proper safeguards are in place. The majority of our young target audience do not yet drive and are not in position to purchase a new vehicle today. The information we provide should assist them in making environmentally responsible choices when they begin purchasing their first vehicles.

V. Market-Product Focus

a) Marketing and Product Objectives

Our objective is to create a new generation of environmentally conscious youth who will be the customers of tomorrow. Informing students is important because they will be the consumers in the coming decades. By educating and informing policy makers as well, they can help establish a norm, and influence legislation to demand that manufacturers make products that are more environmentally friendly.

b) Target Markets

First,"public-opinion-makers" (dubbed the "Influentials" by Roper pollsters) are a group with the power to impact legislation to assist in the implementation of sustainable mobility. Second, young students are also targeted because they are the future. They will be the customer in future decades. The last segment is the non-English speaking market, the portion of the U.S. population likely to experience the most growth.

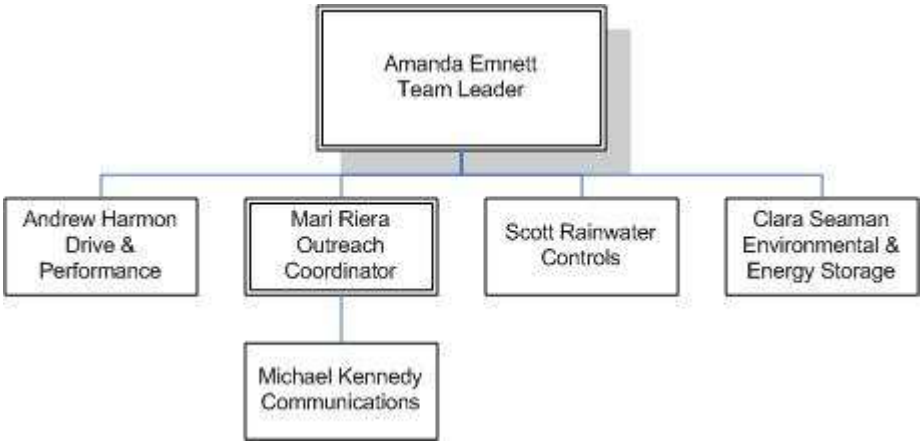
VI. Marketing Program

We will seek opportunities to address groups where "public-opinion-makers' congregate. These may be technical societies, public events such as those organized by Challenge X, a Tulsa Earth Day event, meetings with political parties, or local civic groups. These presentations need to be informative and dynamic. We need to show the types of projects we are working on so that they can make a more informed decision on hybrids and renewable fuel vehicles.

Additionally, we aim to find opportunities to talk to K-12 audiences. The technologies we are working on should appear normal to them by the time they become automotive consumers. These presentations need to be hands-on and fun, but also educational. Classroom presentations, Girl Scout activities, and Cub Scout pack meetings have been successful for TU in the past. Our computer-based educational games are another way of reaching these markets. Business cards with our website are distributed to all youth and their teachers that we work with.

By sending press releases to and by talking to representatives from Spanish-language newspaper, radio and television stations, the non-English speaking audience can be informed, as well. We plan to send information about our project to local Hispanic newspapers and news programs as well as to Univision. Informing the Hispanic community about our message will also be accomplished through our website which is available in both English and Spanish.

VII. Team Organization



The TU team consists of approximately 30 undergraduate and 1 graduate student who are split into four teams. Three of these teams relate to the performance of the vehicle. The fourth team is our Outreach team. This team has 4 dedicated members, but all TU Challenge X team members assist with outreach activities throughout the year.

The TU Outreach Coordinator is Mari Riera. She sets up interviews, press releases, and interaction with the media. She is responsible for implementation of our marketing strategies and Spanish relations.

The TU Communications Director and Webmaster is Michael Kennedy. He has redesigned our website and continues to keep it updated with Isabella's Blog (a first person blog from the point of view of the vehicle), video blogs, and other updates on team activities.

VIII. Budget

Brochure (3000 tri-fold, full color, high gloss in English & Spanish)	$600
Video Editing (2 minute "commercial" for website/YouTube)	$500
†Team uniforms for outreach events	$800
*Parade entry fees (4)	$400
†Dashboard Mat promotional giveaways (1000)	$2200
*eWeek and educational activity supplies	$500
Total	$5000

*The starred items will be funded only if adequate Outreach funding is available.

†These items will be done to a smaller extent if the team only receives $2500 in Outreach funding.

IX. Implementation Plan

The car will be ready for public display by November 15. At that time we will begin seeking out opportunities for public outreach. In particular we will:

- Enter parades such as Tulsa's Martin Luther King, Jr. Day parade;
- Exhibit our vehicle at national events such as those planned for December 2007 and May 2008 by the Challenge X organizers;
- Exhibit our vehicle at local events such as the Tulsa Zoo's Earth Day celebration;
- Speak at meetings of organizations such as Tulsa Engineering Foundation, Oklahoma Society of Professional Engineers, Rotary International, Sustainable Tulsa, and Partners for A Clean Environment;
- Speak with city and state government officials to coordinate with them in their efforts to improve energy efficiency and environmentally-friendly outlook in our community;
- Post a professionally-edited video on our website and, later, submit it to YouTube;
- Create a fourth educational computer game to post on our website and to have available at display events;
- Advertise our computer games to public school teachers for inclusion in their curricula. In particular we will target 4th grade teachers for their Energy and Motion curriculum component and high school teachers of Environmental Science and of Introduction to Engineering courses;
- Seek out opportunities to visit local public and private schools and local homeschool groups to teach them about renewable fuels for vehicles;
- Work with Girl Scouts and Boy Scouts to host workshops and visit troops and packs for hands-on activities and presentations;

- Create a new e-Week activity on the University of Tulsa campus for visiting K-12 students;
- Make our website accessible to both English-speaking and Spanish-speaking visitors;
- Seek publicity by issuing press releases about upcoming events.

X. Performance Evaluation

The team goal is to make presentations to a minimum of one thousand adults and do hands-on activity sessions with at least one thousand K-12 students prior to May 20, 2008. We hope to have at least two thousand hits to our website during the year. We plan to have two or more print article in a public venue and four or more print articles in targeted publications such as the TU alumni magazine and professional society newsletters. We plan to have at least five television/radio stories during the year (above and beyond the news coverage we had during the summer after the Year 3 competition).