

A Student's Perspective on Working with Industry Through Formula Student

Steven Walker, MEng undergraduate,
Department of Aeronautical and Automotive Engineering, Loughborough
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This case study highlights the interaction between a student and an industrial partner on the business proposal for Loughborough University's Formula Student team.

Reasons for engagement

Formula Student is a competition organised by the Institution of Mechanical Engineers, (IMechE) in partnership with a large number of sponsors. The challenge is to design, build, develop, market and compete by producing a single seat race car to a comprehensive set of regulations.

Within the department there is a faculty adviser for the team, however their role is to make sure everything is run safely and to organise purchasing, rather than being directly involved in designing and making the car. Formula student is also supported by a final year MEng automotive module, which completes a large amount of design work for the team. However, this work is only taken on by the team for final design stages and manufacturing if they think the work is of a satisfactory standard and the budget allows it.

The UK competition, held annually at Silverstone race circuit attracts competitors from across the world to include mainland Europe, the Americas, Asia and Australasia. There are also further events throughout the year in the US, Germany, Italy, Brazil and Australia. As a team LU Motorsport competes annually in both the UK and Germany.

During each event, students are challenged in a number of key areas, to include; a design presentation, cost analysis and business plan. Furthermore, the prototype is tested dynamically in a 75 metre acceleration, a figure of eight handling test, an autocross (a single sprint lap of a circuit) and an endurance race (which is 22km in length and incorporates a driver change).

Within the business event presentation, each team must indicate a comprehensive knowledge of the cars commercial viability, to include the market research from which the vehicle was developed, a manufacturing plan, marketing strategy and the financial projections. This is then pitched to a panel of judges, who play the role of a manufacturing company interested in supporting such a project. Overall this element of the competition represents 75 out of 1000 possible points, a significant amount when considering 10 points can separate 4-5 teams

As LU Motorsport currently consists of entirely engineering students, experience in business strategies is very limited. Consequently, finding an industrial partner with such knowledge would clearly benefit the team.

The engagement

Ultimately, a relationship was developed through the Loughborough University Development Trust with leading financial consultants, Deloitte. Such a relationship is mutually beneficial; Deloitte are one of the largest recruiters of graduates within the UK, with a particular interest in the skills of engineers.

The relationship began with a meeting at the University. This formed a brain storming session to look at possible ideas for the project which was attended by three members of the FS team and a Deloitte employee, himself formally a Loughborough University student. Starting with the previous year's business plan, a large number of ideas were developed where key areas for improvement were indicated. It was then the team's responsibility to draft a new business proposal. Throughout the writing process, contact via both email and telephone ensued, where advice was offered.

Following the completion of writing the business proposal, it was arranged for the team members involved to travel to Deloitte's office in Birmingham. During this time, the presentation was given to a number of employees, including a Partner, who holds responsibility for an entire function within the Midlands region. Further feedback was provided, not only into the content, but also the style of delivery.

In return for such support, Deloitte's company logo is in a prominent position on the 2008 car's nosecone. Furthermore, arrangements are being made for the car to be available for their graduate recruitment events in Loughborough at the start of the 08/09 academic year.

Issues

Throughout the partnership to date, there have not been any issues. Sometimes it can be frustrating waiting for email replies, but this is inevitable. However, having

a consistent contact helped so that the advice received was consistent throughout. At times, pressures from car construction provided small delays as naturally the priority of engineering students is always with the vehicle.

Benefits

The benefits to the team are quite clear, sound and professional advice into the content and structure of a business plan prior to the event. It also increased motivation in the project and ensured that all preparation was completed within the required time frame.

Unintended outcomes

Although originally Deloitte's involvement with LU Motorsport was to offer advice and assistance when compiling the business plan, the relationship has further developed to them offering financial support. Subsequently this helps fund the manufacturing of outsourced components for the vehicle.

Student perspective

This opportunity offered access to invaluable advice, broadening knowledge of the business side of an engineering company. Their involvement also seems to make logical sense, in an effort to make engineering students aware of opportunities in other industries whilst also advertising the Deloitte brand.

Reflections

Overall the project worked well, however results at the event didn't quite match the teams expectations. However, this broke down to the difference between the perspective given by the Deloitte personnel and the judges. At the event, all the judges are from engineering backgrounds so were looking for slightly more details about the vehicle and the manufacturing plan than provided. Following such criticism small changes were made for the German event

which is one month after Formula Student UK, where the result was significantly improved.

Context

Steven Walker is currently a final year undergraduate student at Loughborough University, studying Automotive Engineering, (MEng). As a part of the degree course he completed a year working in industry for Nissan cars at their European Technical Centre in Cranfield, Bedfordshire. Working in Upper Body Design department, he held responsibility for all internal components on the back door of a new vehicle through its digital design phases.

Throughout Steve's time at University, (since Sept 2004,) he has been involved in Formula Student. Within this time he has progressed through the team, from general manufacturing, to a component designer which included the pedal box for the 2006 car, to finally become the chief designer in 2008.

Prior to joining University he also competed as a design engineer in the Jaguar sponsored F1 In School competition, with his team winning the national post 16 award in 2004 along with three regional titles.

