

The Enterprising Engineer

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Abstract

This case study details a 3-day event, 'The Enterprising Engineer', which was designed to be of equal benefit to students intending to enter industry and students intending to start up their own business. The event included invited speakers from industry, from Loughborough University and from an external consultancy. Students, working in small groups, developed a new product. They then produced a business plan, a patent application, a model of their product, a poster and a presentation. The event culminated in a 'Dragons' Den' type situation with each group of students trying to obtain funding for their business.

Background

The event was based around material obtained from 'Teaching Entrepreneurship: Resources for Academics', developed by Kevin Byron. The Enterprising Engineer event used this material on day one to set the scene for the following two days and supplemented it with a number of further activities and invited speakers.

With the exception of first year students the event was available to engineering undergraduates and those undertaking a taught postgraduate engineering course. Attendance was free and food and drinks were provided. Students were responsible for organising their own accommodation.

Why run such an event?

With the majority of engineering undergraduates undertaking a work placement and the close links that exist between Loughborough University and industry it was believed that this would be a positive contribution to the student experience and be greeted favourably by future employers.

There is a growing belief that entrepreneurs are not just born and that entrepreneurship can be taught (Rae, 1999:xi-xiii). Employers require graduate employees to have entrepreneurial skills, to be intrapreneurs and to be enterprising (Council for Industry and Higher Education, 2005).

In addition to developing enterprise in the workplace it was also hoped that the time pressures associated with the tasks and working for three days with previously unacquainted students, would give a taste of project work in industry. It was also hoped that the team members would bond and that a competitive spirit between the teams would evolve.

What skills and abilities are enhanced and developed?

The event attracted students from a wide range of departments and year of study. There was also a wide cultural mix of home, European and international students. The group work provided ample opportunity for the development of social, leadership, and time management skills, and the sharing of roles and responsibilities.

As a result of the event, the students explored what is meant by creativity, innovation, enterprise and entrepreneurship, and ways of generating ideas. They investigated the merits of divergent and convergent thinking, creative problem solving and market research.

Topics presented by invited speakers included:

- intellectual property
- patents
- risk management
- mitigating and minimising the effects of a product recall.

Other wider benefits included the opportunity for students to meet with those from industry in a non-interview situation. Embedded in the event was the development of a range of employability skills such as team work and giving oral presentations.

What skills, attitude and attributes do students need to enrol on such an event?

No preparation was required for the event and students did not need to have previously attended any courses on enterprise or entrepreneurship. It was hoped that participating students would be enthusiastic and willing to participate. As participating students had chosen to attend and to do so entailed missing three days of their holiday they were extremely committed to the event.

The role of the facilitator

From the outset, it was very important for the facilitator to provide a non-threatening environment. The students came from a range of cultural backgrounds, courses and years of study and most had not met before. At the commencement, students were put into groups and led through some creative tasks to which they reported back. This worked well and avoided the monotony of, and stress associated with, a traditional introductory ice-breaker activity. The students were initially rather quiet but by mid-morning of day one they were lively and involved in their group work. All the tasks were related to the ultimate goal which was to find and market a new product.

As the first day was a series of presentations interspersed with group work which set the scene for the following two days, this was labour intensive for the presenter. The facilitator needed to be friendly, enthusiastic and encouraging to ensure the participants had a positive learning experience and obtained maximum benefit from the event.

Links with industry

Presentations were given by recent graduates who detailed their own experiences of intrapreneurship within large engineering companies. Another invited speaker had developed his business idea into a company with sales in excess of £5m. He described his entrepreneurial journey from his original concept to overseeing production centres in India as well as in England.

A senior employee from BAE Systems, which has close links with Loughborough University and employs a large number of placement students and graduates was one of the three Dragons who assessed the work of each group and was also available to talk with individual students.

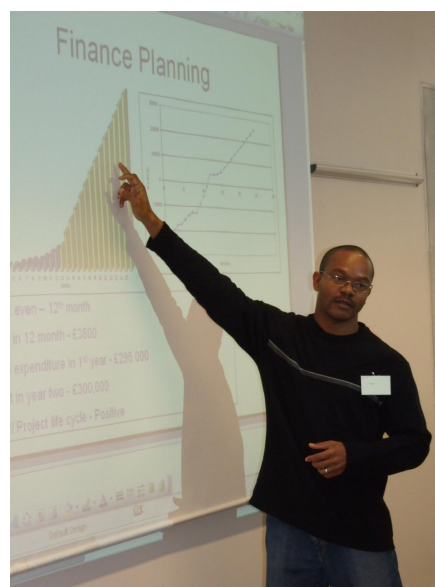
All participants received a certificate of attendance and were encouraged to record their attendance at the event on their curriculum vitae.

How is the event assessed?

The teams were assessed by a panel of three Dragons. The winning group received prize money of £250. This was donated by the Systems Engineering Innovation Centre at Loughborough University.



Question time in the Dragons' Den



Oral Presentation in the Dragons' Den

Considerations and Concerns

One consideration is that an event such as this needs to be held during a university vacation period. This may present difficulties with accommodation for those students living in halls of residence. Another consideration is that the planning of a three day event is also extremely time consuming.

A concern that proved to be unfounded was that students who had registered would fail to attend or fail to commit themselves to the event.

Evidence of Success

There was complete attendance on all three days, other than one student who became unwell. There was a competitive spirit and evidence of bonding in the groups was witnessed. A high level of commitment was demonstrated by groups working in the venue until late evening on the second day. The Dragons were impressed with the quality of the work by all groups and found it difficult to determine the winning team.

All feedback from students and presenters was positive, for example:

Enjoyed it, improved confidence and communication skills. Good networking.

Good event, keep it up. We do not need to wait to be employed. We can be employers.

[I enjoyed most] - Exposure to various concepts and ability to work in group.

It was also mentioned that the event was professional, improved confidence, should be of longer duration and held twice a year to enable a greater number of students to attend. In addition to the comments on the feedback forms and conversations during the event there were numerous thank you messages received from the students after the event.

Reflections and future developments

The event was enjoyed by staff who were involved in the delivery as well as by the students and it is intended that this will be an annual event. It has been decided to allocate a little more time for group work in future events.



The winning team

Acknowledgements

Kevin Byron from the Higher Education Academy Physical Sciences Centre, University of Hull, who developed the material for 'Teaching Entrepreneurship: Resources for Academics' and allowed it to be used prior to it becoming available as a teaching resource.

The Systems Engineering Innovation Centre at Loughborough University for providing the prize money. The speakers, the 'Dragons', and staff who helped at the event.

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Date:	September 2007