

iCaseChallenge: One way to integrate Technology and Business Knowledge

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Abstract— This paper describes and debates the development and learning results of the first National iCaseChallenge (Case competition) held in Sweden. The case competition has been coordinated and lead by the student project coordinator Lena Rosenberg, from the Lund I-student section, in close collaboration with the other I-sections at the other Engineering Universities (Chalmers, KTH, Linköping, Luleå) in Sweden, the company representatives at Alfa –Laval, Lund and the faculty of Industrial Management and Logistics, Lund. The case final was held in May 18, 2009 at the company Alfa-Laval., Lund resulted in new knowledge and competence development for all the participating and collaborating stakeholders (students, managers and the academic representatives). Hopefully the findings in this paper can be used in the further development and organization of iCaseChallenges in Sweden and globally.

Keywords— Case competition, co-operation with industry, critical and reflective thinking, case learning, engineering school, sponsorship

I. INTRODUCTION

THERE exist a deep knowledge and competence in teaching, learning, writing and measuring with the case method and its various learning effects in higher education, universities and also in industry ([1]- [2]- [3]-[4]-[5]- [6]- [7]-[9]. At the Faculty of Engineering (LTH), Lund University, Sweden we have been working for a long time and extensively with the case learning method in our university courses, in order to promote and enhance deeper learning's for the engineering students. We have also worked with the format and examination method of student written cases [4]. This case method have also been done in close co-operation with Wacra (World Association for Case Research and Application www.wacra.org)

At one of the strategy courses, Strategic Management, we use cases as the main pedagogical format for a long time. Since 2001 we at LTH, as said, have developed our own method of student written cases in a course in Technology strategy [4] - [1] - [5]. in order to address the vital and often necessary alignment between technology- and business strategies. The importance of developing our own cases at LTH is also driven by the fact that we with this case method also get a continuous

input (i.e. flow) of newly produced and short cases on current technological dilemmas that genuinely spark attention and interest among the participating engineering students. Some of these produced cases we use in our courses. The major part (i.e. 100 cases) of these produced cases is confidential and belongs to the participating companies and organizations.

The focus of this paper is to share some experiences in the development and implementation of the first National case competition in Sweden for the Industrial Engineering and Management Universities and their students. This paper is written by one of the founding students Lena Rosenberg (LR) and one of the professors Carl-Johan Asplund (CJA) at LTH. The main objective of this paper is to share and to codify this knowledge in order to both evaluate the experiences we made so far and to propose suggestions for the development of this unique national case competition in the future.

II. PURPOSE

Firstly, to present and evaluate the first National Case competition for Engineering students attending the programme of Engineering and Industrial Management in Sweden. Of special interest is the design of the different local case competition, selection of cases, development of case questions and the working formats of the case competitions and the work format of case jury. This documentation (i.e. codification) will hopefully be use by the student representatives arranging the next iCaseChallenge that will be held at Linköping University in the spring of 2010.

Secondly, to give insight into the different learning objectives and challenges that this case competition addresses and describe how we as a co-operative team (i.e. students, industry representatives and the university faculty) designed and facilitated this “case learning arena” in order to promote the best technology and business case challenges for the Swedish industrial engineering and management students.

Thirdly, to present the main findings from this first national case competition for the engineering students and managers.

III. THE FOUNDING OF THE ICASE CHALLENGE

Early in November 2008, a friend of LR, who at the time were a member of the board in the Industrial Engineering program in Lund, told her that they were looking for a person to be responsible both for a case competition in Lund, and also of managing and leading a group of people with the goal of founding a case learning/solving environment at the Faculty of Engineering, Lund university. In this assignment laid also a

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responsibility of designing, arranging and hosting a local case qualification tournament as well as organizing the first final national case competition in Lund, Sweden. The decision of arranging a national case competition was made during a student conference with the five largest universities, teaching the programme of Industrial Engineering and Management in Sweden.

Linköping University already had a student case group since 2008, and they had conducted a local case competition earlier in the spring of 2009. Now, the four other universities (i.e. Chalmers, KTH Royal Institute of Technology, Luleå University and LTH, Lund University,) were to follow by establishing case solving groups and also to function as hosts for the locally and forthcoming local and national case competitions. The local competitions were to serve as qualification rounds for the case final, which this launching year was held in Lund at the company Alfa-Laval, Lund

The detailed design; content and format, of the local and national case competition, was in early spring not articulated, so this was one of the main challenging tasks for the newly founded case study group in Lund.

The head of program Nina Reistad, at the Industrial Engineering and Management in LTH also actively supported and took part in developing this national case competition in order to promote the case learning method of learning at LTH. KPMG in collaboration with business and management schools in Sweden had already conducted case competitions for a long time (e.g. www.kpmg.se/pages/103045.html), now it was time for the Swedish Engineering Universities to do this by themselves said the I-student sections in Sweden

The students in the Lund student section also felt that this was the right time to form a local case group in order to engage the engineering students more in the case method; with the purpose of both to inform and learn more about the case methods and its potentials, and to also to be an active part of the national annual iCase competition between these universities in Sweden. The programme in Industrial engineering and management helps to create an attractive working force said both Mats R Nilsson and Klas Bertilsson (managers at Alfa-Laval, Lund) and continued with saying that if the engineering students, at both an early stage and onwards in their education, is trained in both foreseeing technology strategies and create doable solutions in authentic business situations better student capabilities can be developed. This is also one of the reasons why Alfa-Laval, this first year, actively were so engaged as well as sponsored the local and national case competitions.

The case learning method [7]-[9] has become increasingly important at universities and companies [2] all around the world, and now was the time for LTH to become an active stakeholder of this development. One of the explicit objectives with arranging the case competition was to integrate (i.e. align) and apply various technical and business knowledge and competences held by the engineering students. Choosing

the format of the National “iCaseChallenge” was also made in order to stimulate the “healthy” competitiveness and co-operation with stakeholders at universities and companies in mainly Sweden. An emergent long time objective was to strategically positioning [8] the qualities of the “educational brand” of the Swedish programme of Industrial Engineering and Management.

A kick-off meeting was held in late November 2008 for all I-students that were interested in being a part of this case group in Lund, and after this first meeting the work of arranging the case competitions as well as forming a local case group started. As soon as the case group was founded, the students started to contact several companies that would be willing to be engaged and perhaps to sponsor the case competition in Lund

. This turned out to as LR said “easier said than done”, considering the current harsh business climate. By chance, LR brought up the idea of case competition with a professor (CJA) in one of her courses (i.e. Technology Strategy). This meeting was held in early February 2009. CJA thought the proposed case competition idea was a very promising initiative and suggested that they together should promptly approach one of participating managers in the course; CTO Mats R Nilsson at Alfa-Laval, Lund, who had since the beginning of the technology strategy course in 2001 been both very interested/engaged in guest lecturing, the promotion of the subject of technology strategy as well as being a host for multiple student case writing projects. A meeting was quickly arranged where Alfa Laval were asked to collaborate, host, and to sponsor both the local case competition as well as the national case final. They agreed willingly to help the student I-section in arranging the iCaseChallenges at Alfa-Laval. Mats R Nilsson and CJA also helped LR to brand the case competition.

The local case qualification was held in April 27th 2009 in Lund, and the final was held in May 18th also in Lund. Participants from four of the five engineering universities participated in the final. In June 2009 the student case participants and the iCase jury was interviewed with a survey and personal interviews with the managers was conducted.

IV. PLANNING AND ORGANIZING THE ICASE CHALLENGE

The work with designing and organizing the case competitions, was done in a core planning group consisting of the following members; LR (+ the I-student local case group), managers Mats R Nilsson and Klas Bertilsson from Alfa-Laval in Lund and CJA. The applied cases as well as the case questions were selected and new questions for both competitions were developed by Ola Alexanderson and CJA, LTH. In the case jury participated, besides the Alfa-Laval managers, faculty members Ola Alexanderson, Carl-Johan Asplund, Eva Berg, Dag Näslund, Per Odenrick and Torgny

Roxå. The other universities were asked to send representatives from both academy and industry to the final in order to give the participating universities a possibility to contribute to the iCaseChallenge. Unfortunately, only representatives from Lund had the possibility to participate as the jury in the final in May 18, 2009. We tried locally, to get a broad and deep competence base as possible, for judging the case teams at the final with including Eva Berg (from Logistics and deep knowledge from working in the industry) and Torgny Roxå (an expert in new pedagogical formats at the pedagogical section "Breakthrough") within LTH and also very skilled in working with collaborative projects including case learning. CJA functioned as head of the jury with articulating together with the members of the jury the case judgement criteria's. Before both the local and the national competitions the various members of the jury read the cases and also the instructors guide. The jury beforehand also discussed the case instructions as well as questions/solutions.

V. THE FORMAT OF THE ICASE CHALLENGE

In brief, the process and pedagogical format of the iCase Challenge final case competition followed seven steps:

1. Invitation and information: The student case teams which had won the local case competitions were informed by the local student I-section about the case final in Lund.
2. iCaseChallenge final @ Alfa-Laval, Lund. All the students teams, which each included 3-4 persons, was welcomed to the company by the managers and the locally organizing I-case team lead by LR. The students were giving an introductory mini-lecture to the company business and technology models incl operations by the managers and then Klas Bertilsson took the case solving teams on a company tour before they were given the case and started the case solving process.
3. Solving the case. Each of the case teams were provided with a new produced case including case questions and a time schedule. The case was about a company and CEO/managers facing important strategic opportunities.
4. Key directions and decisions have to be made for a promising future. The case challenge consisting in analysing the company situation from the macro- and micro levels with developing their own analytical approach/framework and thereby using appropriate models and concepts for reaching a trustworthy solution and recommendation. The case solving time was six hours (including lunch). The case teams started solving the case every 30 minutes. Obs! They were not informed or given the case jury criteria's.
5. Case presentation. Each case team presented their solution before the case jury and student audience using a power point format. They had maximum 20 minutes to their disposal and then this was followed by 10 minutes of questioning from the members of the jury. They were given the opportunity to answer the questions which

were given from multiple perspectives from the jury. Between each case presentation the jury shortly and quickly summarized and debated their individual interpretations of the provided case solutions.

6. Case evaluations: After all the presentations were conducted the jury meet, debated and evaluated the different case solutions. The jury was given the power point presentations in order to better re-capitulate the provided case solutions. After this a proven strategic format used by managers at Alfa-Laval (i.e. "Wisdom of the crowd"). This meant that each of the members in the case jury could only give one point each to two case teams. If two case solutions were given the same points a new vote was conducted and then the winning case team was selected. All the members of the jury had to motivate their choice The participating case teams were given case feedback using the case criteria's.
7. Feedback to the case teams. The student I-federation and the managers summarized the first iCase competition conducted at Alfa-Laval. All the case teams were then given feedback by the jury. After this the second and the winning team was announced. All case teams were given a certificate of participating and gifts from both Alfa-Laval and the local case organizers.

VI. MAIN FINDINGS FROM THE PERSPECTIVES OF THE STUDENTS & MANAGERS

Below is reported some of the main findings we concluded from the answers of the student survey and the interviews with the managers that was conducted with the participants in June 2009. 68% of the student participants replied on the survey. 80 % of these had a prior experience of the case method and solutions.

The first (1) finding that stands out is that organizing a national case competition seemed to be an excellent way to involve the students and the managers in an new learning co-operation format (i.e. the case method) as well as organizing the final case in an interesting business environment in the local community The managers said this was a good and innovative way for the company of engaging themselves in helping the engineering students in the organization of the case competitions and also to build relations with the universities.

The second (2) finding is that arranging the first iCaseChallenge in a close co-operation with the managers at Alfa-Laval made it more real and interesting for all stake holders involved (including the managers themselves), and it also added also a genuine feeling of bringing company life to the academic life. All participants were impressed by the well organized event and creative atmosphere that arose.

The third (3) finding concerns the time frame. Nearly all students said the time frame was right. 10 % of the case participants (often the more experienced ones with the case method) commented that the time frame could be shortened a little.

The fourth (4) finding was that all said that the selected

case and case questions was excellent and served well its purpose. Some students said that using a case about the hosting company e.g. Alfa-Laval could be a good idea for the future with also including comments from the including managers of the business and perhaps solution!

A fifth (5) finding is that the jury consisting of a mixture coming from both the industry (Alfa-Laval) and from the university was well selected. The students said that they also provided good feedback at the end. One student said that there could be even more comments on the economic solutions that was provided. Another student wanted more management consultants in the jury; they (i.e. consultants) often use case solution in their working environment.

VII. MAIN LEARNING'S

The overall learning of this first national iCaseChallenge is that the participating universities should continue with the development of iCase Challenge in close co-operation with interested managers in companies such as Alfa-Laval. In the near future, new technology and business cases could also be written together with the participating companies that are to be engaged in the forthcoming iCaseChallenges in Sweden.

Another main learning is that the assessment work and composition of the case jury should be made even more explicit to the participants. This to ensure and also to promote a lasting quality; i.e. that non-biased jury is put together with bringing multiple perspectives from industry and academy in the case competitions. It is therefore important to stress, even more, that each member of the case jury is well prepared in advance and knows the different facts, core perspectives and issues in the case to be able to judge and ask relevant questions after the students' case teams presentations. This is not to be seen as a critic of the work current jury, but an incentive to promote new challenges for the case assessment.

All the student's participants appreciated the case contest that was held at Alfa-Laval to a very high extent and also the high quality feedback from the case jury afterwards were given very positive remarks.

The local student I-section in Lund gave also suggestions for the future in stating that the students should not be given too much case solving time. The whole idea with a restricted time limit is to add some "healthy pressure" to include and evaluate the students' capabilities to work and adapt with limited time for solving complex company technical and business dilemmas.

Overall the case competitions gave the arranging students sections in Sweden a strong incentive to further work on and to innovate the iCase concept and case competitions format developed. There is finally a huge demand for case learning at the Swedish Engineering Universities, in order to proactively meet the students' needs for transforming theories into practical experience and to also stimulate them in developing more reflective mindsets in understanding and addressing the emerging and challenging business environments .

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