The Challenge Academy: a creative crowdsourcing model for strengthening university-business cooperation

Susanna Correnti, Università degli Studi Guglielmo Marconi, Rome, Italy

ABSTRACT. Crowdsourcing is a “process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community, rather than from traditional employees or suppliers” (Safire 2013). Challenge Academy applies the concept of crowdsourcing by offering an online platform for practicing skills and knowledge of the collective students population to solve business-related challenges. The companies, research centres and universities, share their problems with the academia and therefore professors and students from all Europe can gather innovative solutions for them. Currently in the platform there are registered more than 2000 users among companies, universities, academics and students. The Challenge Academy offers to companies and research centers the chance to select new resources and discover young talent. Academics can benefit from real world cases focusing on a student-centered educational approach using the problem solving. Students, not only compete to gain the challenge award but they have the chance to be in contacts with several companies at European level.

KEYWORDS: Crowdsourcing, Crowdsourcing platform, University-business cooperation, Problem-solving

What is crowdsourcing?

Crowdsourcing is “process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community, rather than from traditional employees or suppliers” (Safire 2013; Merriam-Webster.com). Crowdsourcing is a distributed problem-solving and production model that has emerged in recent years with a range of different,
sometimes conflicting interpretations (Doan et al., 2011; Brabham, 2008; Estellés-Arolas, González-Ladrón-de-Guevara, 2012; Leimeister et al., 2009).

“Crowdsourcing means involving a lot of people in small pieces of a project. In educational and nonprofit outreach, crowdsourcing is a form of engagement, such as participating in an online course, collecting photos of butterflies for a citizen-science project, uploading old photos for a community history project, deciphering sentences from old scanned manuscripts, playing protein folding games to help scientists discover new ways to fight diseases, or participating in online discussions.” (Source: http://www.idea.org/blog/2013/02/19/what-is-crowdsourcing-and-how-does-it-apply-to-outreach/)

“Crowdsourcing is the process of getting work or funding, usually online, from a crowd of people. The word is a combination of the words ‘crowd’ and ‘outsourcing’. The idea is to take work and outsource it to a crowd of workers. Famous Example: Wikipedia. Instead of Wikipedia creating an encyclopedia on their own, hiring writers and editors, they gave a crowd the ability to create the information on their own. The result? The most comprehensive encyclopaedia this world has ever seen. Crowdsourcing & Quality: The principle of crowdsourcing is that more heads are better than one. By canvassing a large crowd of people for ideas, skills, or participation, the quality of content and idea generation will be superior.” (Source: http://dailycrowdsource.com/training/crowdsourcing/what-is-crowdsourcing)

“Despite the jargony name, crowdsourcing is a very real and important business idea. Definitions and terms vary, but the basic idea is to tap into the collective intelligence of the public at large to complete business-related tasks that a company would normally either perform itself or outsource to a third-party provider. Yet free labour is only a narrow part of crowdsourcing’s appeal. More importantly, it enables managers to expand the size of their talent pool while also gaining deeper insight into what customers really want. With the rise of user-generated media such as blogs, Wikipedia, MySpace, and YouTube, it’s clear that traditional distinctions between producers and consumers are becoming blurry. It’s no longer fanciful to speak of the marketplace as having a “collective intelligence”—today that knowledge, passion, creativity, and insight are accessible for all to see. As Time [magazine] explained after choosing the collective “You” as the magazine’s 2006 Person of the Year, “We’re looking at an explosion of productivity and innovation, and it’s just getting started, as millions of minds that would otherwise have drowned in obscurity get backhauled into the global intellectual economy.” (Source: http://www.cbsnews.com/news/what-is-crowdsourcing/)

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One of the most high profile examples of crowdsourcing is Wikipedia. Authored and edited by thousands of individuals around the world this combination of efforts has created the largest (and arguably most accurate) encyclopaedia that has ever existed. By canvassing the experience, knowledge and perspectives of a great many people what is ultimately produced is arguably a superior repository of knowledge.

An overview about companies – universities cooperation

The European Commission established the EU Forum for University-Business Dialogue (http://ec.europa.eu/education/tools/university-business_en.htm) in 2008 to advance and facilitate interactions between the academic and business world. The University-Business Forum provides face-to-face opportunities for discussion, networking, mutual learning and the illustration of good examples. University-Business Thematic Forums are organised in Member States to explore issues which are high both on national and European policy agendas.

In particular, the Thematic Forum in Stockholm (19-20 March 2014) provided an opportunity to explore the socio-economic impacts of university-business partnerships and their effect on innovation. Several themes were debated and among these the link between “social innovation” and “university-business cooperation” arose as pivotal factor and in particular: “In order to make social innovation happen, people’s mind-sets need to be changed and this process includes a component of education and understanding of the users’ needs. Crowdsourcing innovation is an important step forward, along with the need to fully understand the next generation” (Allinson, Jávorka 2014).

The UK’s Association of Business School’s in conjunction with the UK Government recently launched the Small Business Charter (SBC) (Source: http://smallbusinesscharter.org/). The charter sets out to establish a benchmark for university-company collaboration in terms of specific actions that can be undertaken to improve and increase levels of communication. Assessing the scale of engagement with companies by each university involves consideration of several separate actions. Each action is considered to represent leading practice. In particular the following 28 are relevant to institutions across Europe and are worth reflecting upon at a personal and institutional level to consider how on line crowdsourcing can assist universities to work more effectively with companies.

1. Taught undergraduate and postgraduate programmes focus on the growth and development of businesses and/or their managers: programmes may include presentations from business leaders, use relevant problem-based case studies or have curriculum development co-created in consultation with industry.

2. There is provision within the institution of dedicated innovation/accelerator/start-up space: in many cases the major commitment from an institution takes the form of the provision of short-term leasable space. E.g. Manchester Metropolitan University’s InnoSpace (www.innospace.co.uk).

3. Undertake publicly funded business development initiatives: individual countries and the European Union provide a range of funding opportunities to support small business. Many require collaboration of the company and a knowledge partner (university).
4. A dedicated facility with the capability and capacity to respond to the needs of small businesses: University’s respond in different ways to the needs of local small businesses. However, the key issue for small businesses is to navigate the hierarchy and complex communications of universities to find the right relevant people to work with.

5. Actively engage alumni through mentoring, peer support, awareness raising and role modelling activities: managing an alumni network for a wider range of purposes beyond fundraising produces productive engagement in both directions and encourages alumni to support the university ‘in kind’. Alumni also obtain direct access to a continuous supply of prospective talent.

6. Offer opportunities to undertake projects and placements with a small business/enterprise focus: students struggle to individually access small businesses outside the realm of the direct experience. The university offers the opportunity to act as a broker in the developing relationships between businesses and students.

7. Provide support to small businesses/enterprises that has impact.

8. Enterprise and SME development is part of the mission of the institution.

9. Research conducted within the institution supports and theories enterprise/small business activity.

10. Small business is involved the governance of the institution: this form of input generally comes in the form of participation on a School advisory board and external advisory input into course and project developments.

11. There are long-term University-company collaboration(s).

12. The institution participates in regional networks of entrepreneurs or small business

13. Small businesses are engaged as suppliers by the university for various services.

14. Relationships with private sector providers and professionals to offer specialist advice to small businesses.

15. Working with small business support agencies.

16. The school is a source of advice and support for small businesses and enterprises.

17. Working with bodies that represent small business and enterprise e.g. Chambers of Commerce.

18. Engagement with local authorities on business support strategy and the national agendas for growth.

19. Dedicated start-up space for students within the institution e.g. incubators.

20. Opportunities for students to participate in business start-up programmes.

21. Student support offered post-graduation with employment opportunities in small businesses

22. Internships in small businesses embedded within a student’s course or programme.

23. Placements in small businesses embedded within a student’s course or programme.

24. Small businesses mentoring of students by experienced entrepreneurs embedded within programmes.

25. Entrepreneurship society integrated into the mission and work of the institution.

26. Dedicated Small Business/Enterprise/Entrepreneurship faculty that deliver programmes with appropriate expertise, research knowledge and underpinnings.

27. Enterprise modules that include contributions from practicing small business managers.

28. Availability of enterprise modules for students.
The Challenge Academy opportunities

The Challenge Academy (http://challengeacademy.eu/) is a crowdsourcing platform, developed in the framework of UC-CROWD European project (http://uc-crowd.iscte-iul.pt/) (October 2013 – October 2015). It is supported by the Lifelong Learning Programme of the European Commission and includes 13 partners across Europe among Higher Education Institutions (Università degli Studi Guglielmo Marconi as Italian university), Companies and Research Centre. The project aims to strengthen links between companies and Higher Education Institutions (HEI) by creating a bridge between two different worlds applying the crowdsourcing problem-solving model.

There are several types of crowdsourcing: Open Innovation, Community Building, Collective Creativity, Civic Engagement, Collective Knowledge, Crowdfunding and Cloud Labor. Of these, the most relevant according to the Challenge Academy purpose are: Collective Knowledge, which consist of development of knowledge assets or information resources from a distributed pool of contributors; Collective Creativity taps into creative talent pools to design and develop original art, media or content. This can mean new creative works by professionals, or non-professional.

In particular, Challenge Academy applies the concept of crowdsourcing by offering an online platform to put in practice the skills and knowledge of the collective students population to solve business critical challenges. The companies share their problems with the academia and professors and students from all around Europe are invited to find innovative solutions to solve them. Universities and Higher Education institutions, in a general way, have the chance to be innovative and to help companies to find new solutions to be more competitive. The Challenge Academy platform matches companies needs and academia projects.

In particular the main actors of the Challenge Academy platform are:

- **Seekers**: private and public institutions, registered at the platform, who want to find new ideas for their business or to recruit graduates who best fit in their needs. These institutions present a challenge at the platform, hoping to find new ideas or new people.
- **Solvers**: students and academics from higher education institutions and research centres of any region of the world, interested in present solutions to the challenges presented by the institutions.

The challenge could be an organization problem to solve or an innovative idea to every day company business issue or research trials.

Challenge Academy brings a range of benefits to different users (source: http://blogs.salford.ac.uk/business-school/crowdsourcing/), as follow:

**Benefits for academics:**

- increase collaboration with companies and public or non-profit organizations partners
- focus on real life research problems that are currently faced by companies and organizations
- bring real world insight into teaching materials
- help students to recognise the current needs of companies and public or non-profit organizations
Benefits for companies and public/non-profit organizations:

- find potential solutions to non-mission critical business challenges
- gain inspiration from the answers and solutions that are pitched
- identify potential employees – employ the person who created the solution, benefit from their skills and develop their knowledge
- develop closer links with higher education institutions locally and internationally

Benefits for students:

- find a dissertation topic or an open case study assignment; Challenge Academy can offer inspiration and guidance for topics needed by companies and public or non-profit organizations
- showcase solutions to challenges
- see how others have already solved similar problems
- identify future employers – if they like your solution they will probably like you too
- start a business inspired by a challenge that you have worked on

The Challenge Academy platform in brief

It is possible to register to the Challenge Academy platform (http://challengeacademy.eu/) by choosing a profile directly from the home page (Figure 1 and 2).

Figure 1. Challenge Academy home page
figure 2. Challenge Academy profiles

Each profile has specific functionalities within the platform, as follow:

**Higher Education Institutions (HEI)/Research Centres (RC):** Present Dissertations, Receive notifications of new challenges.

Figure 3. Higher Education Institutions (HEI)/Research Centres (RC) form to register to the platform
Companies: present challenges

Welcome to

Challenge Academy

Private companies, Public or Non-Profit Organizations

General information
Profile picture

Select your image (max. 3MB)
(example-image.png) Choose file

Name of organization
Website
Country
Sector of Activity

Personal information
Person who legally represents the organization in issues related with the Challenge Academy

Title
select from the current list

Name
Surname
Role in the organization
E-mail

(You will receive an email with the password)

Phone Number
(examples: +33 27 505 037

Are you Alumni from any HEI named below
select from the current list

Create my account

Figure 4. Companies form to register to the platform

Academic/Teacher: Present Dissertations, Answer Challenges, Receive notifications of new challenges, Create teams, public profile, Be published in the search.

Welcome to

Challenge Academy

Academic

Personal information
Profile picture

Select your image (max. 3MB)
(example-image.png) Choose file

Title
select from the current list

Name
Surname

Knowledge area / Study area

Accounting
Additive Manufacturing
Administration
Aeronautics

Don’t find your area? Add here

Country
select from the current list

Are you Alumni from any HEI named below
select from the current list

Create my account

Figure 5. Academic/Teacher form to register to the platform
Student/Alumni: Answer Challenges, Receive notifications of new challenges, Create teams, public profile, Be published in the search.

Figure 6. Student/Alumni form to register to the platform

All the challenges published on line are available from the platform home page with highlighted title of the challenge, companies or Higher Education Institutions (HEI) / Research Centres (RC) that posted it, area of interest, deadline. In order to check more details of each challenge or answer it, it is necessary to be registered to the platform and click on “view more details”.
Figure 7. Challenges list Companies, public or non-profit organizations, Higher Education Institutions (HEI) / Research Centres (RC) can publish a challenge by filling in a very simple form ("Create new challenge").

Figure 8: Form to fill in order to create a new challenge.
The Challenge Academy results and Marconi University participation

Currently in the Challenge Academy crowdsourcing platform includes more than 2000 users among companies, Research Centers, universities, academics and students in several European Countries. The majority of users are from UK, Portugal, Slovenia, Poland, Italy, Bulgaria and Belgium. Other countries are Croatia, France, Germany, Greece, Latvia, Netherlands, Spain, Sweden, Turkey. The users are continuously in growth with daily new registered users. In particular the table below summaries the platform participation (in date 12/10/2015) in term of number of users per category:

<table>
<thead>
<tr>
<th>Companies/Research Centers</th>
<th>Universities</th>
<th>Professors</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>68</td>
<td>245</td>
<td>1623</td>
</tr>
</tbody>
</table>

Table 1. Challenge Academy platform results (12/10/2015)

In Italy the following users are registered in the Challenge Academy platform: n. 8 companies, n. 13 universities and research centres, n. 288 students (most of them from Marconi University).

Università degli Studi Guglielmo Marconi has participated in the project in collaboration with Enertecna, an Italian SME in the field of innovative renewable power plants. Università degli studi Guglielmo Marconi and Enertecna have published the following five challenges in the field of renewable energy, engineering and physic, humanities:

1. Thermal design of mu2e calorimeter (published by Marconi university and solved by a Marconi university student)
2. Solar powered trigeneration system (published by Enertecna)
3. Syngas feeding to internal combustion engine (published by Enertecna and solved by a USGM student),
4. Small scale biomass gasifications power plants (published by Enertecna Enertecna)
5. Call for paper: multimedia and digital contents for the education and cultural heritage promotion (published by Marconi university)

Two Marconi University students won a challenge having the chance to complete their academic path with an original and very specific work used also for their thesis and they have won an internship respectively in Enertecna and INFN (Italian National Nuclear Physics).

The Marconi challenge involved a last year bachelor student which role, finalized to the preparation of thesis, was the simulation of the heat dissipation in the calorimeter coming from front-end electronic. At INFN (Italian National Nuclear Physics) an Italian group in collaboration with Marconi University academic staff are working on “Thermal design of mu2e calorimeter”.

During September 2015 the Marconi University student spent two weeks in Fermi National Accelerator Laboratory in Batavia (Illinois, U.S.A.) together with professor Marconi University professors Matteo Martini and an Italian group of students, researchers and engineers. During his stays he had the possibility to collaborate in the project of the experiment and his work has been
widely appreciated both by Italian group such as by US experiment leaders. As a conclusion of his activity in USA, The Marconi University student has presented his work in a mu2e collaboration meeting giving an important help in the definition of specific parts of the detector. Thanks to challenge academy, this student had the possibility to complete his study course with an original and very specific work used also for his thesis. On the contrary, Guglielmo Marconi University and the Italian Institute of Nuclear Physics had the possibility to include into their groups young and brilliant students that strongly push up the project.

Conclusions

In conclusion, we believe that an online platform that matches academics and companies needs could a way to support both world of education and the world of business in charge of tackling the several and different challenges necessaries in order to remain innovative, improve quality, reduce costs and risks. An on line platform between universities and companies, such as the Challenge Academy, could be way for companies and research organizations to select new resources and discover young talent. Moreover, mainly for Small and Medium Enterprises, the research activities, even if it could be a pivotal way to improve the company core knowledge and business, can be an unsustainable cost. From the other side universities and academics can benefit from real world cases and problems as educational material for the students training path allowing the academics to focus the teaching methodology on the educational on the problem solving approach to be applying on practical examples. Students, not only compete to gain the challenge award but they have the chance to be in contacts with several companies at European level. Nevertheless, the platform need to be further improved to answer different users’ specific needs. For example could it be easier and more efficient to organize the platform according to specific business sectors or fields of interest where all interested users, both from academic and business world, can publish challenge, find innovative solution and in general cooperate and share ideas. A more massive communication and advertisement campaign should be arranged to promote the users engagement and to involve them in answering the challenges. In fact, compared to the significant numbers of users registered in the platform, the students active involvement in answering and solving the challenges is relatively low.
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