EIT Digital Doctoral School

Innovation & Entrepreneurship for Researchers in ICT

"Opportunity Recognition (OR)" course in I&E' education

Seminar of the EIT Digital Doctoral School

22nd– 26th February 2016

CLC Madrid -- IMDEA Software Institute Building

Campus of Montegancedo, UPM

Objectives

The development of a scientific or technological doctoral thesis in the framework of the EIT Digital Doctoral School should also offer the *"opportunity"* to move some results into the market as very innovative products or services; but this opportunity should be successfully *"recognised"* on time according to the market needs in parallel with the thesis development.

Then, the objective of this "**Opportunity Recognition**" (**OR**) seminar is to offer to 1st or 2nd year doctoral candidates the necessary background and skills to develop a business idea on the basis of the results obtained or forecasted for their doctoral thesis. This by:

- Taking participants through an opportunity recognition, initial concept (product, service) design and business modelling process,
- Putting participants in a position to identify value elements in research and relate them to innovation and business solutions answering customer/society/industry problems/needs.

More specifically, several objectives and topics will be covered during the OR seminar:

- To know better the structure of the ICT market and services in Europe and elsewhere.
- To understand why, when, and how the results from the doctoral thesis may be protected and exploited.
- To understand the funding needs (from venture capital firms or from corporate funds) for developing and launching a new ICT product or service in a technology-based start-up.
- To assess the tools for technology watch and diffusion related to the technologies used in the development of the thesis.
- To describe the key components of a business model and the way that the thesis could fit in.

Furthermore, two additional goals will be covered and motivated during the course:

- To meet faculty members, invited experts, and doctoral candidates to be able to exchange ideas about the seminar's topics to complement and enrich their own views.
- To know how thesis are being framed in international R&D projects carried out by the UPM.

The successful participation in the OR course of the DTC will provide doctoral students the knowledge required to participate next year into the "Business Development Laboratory" which constitutes the third step related to I&E in their doctoral training.

Methods

Participants will engage the participants in team collaboration and knowledge sharing. Groups of participants will work on a specific idea for product or service case inspired by entrepreneurs or derived from their own scientific work. It will take them from the opportunity recognition to the business modelling stage. This case study will be complemented with testimonials from entrepreneurs on their business creation experience and with lectures from experts. It will be concluded by a formal presentation in front of a jury, which will stimulate their ability to communicate in a synthetic way the result of their work.

The seminar will be organised during **one week** as a set of formal sessions and individual and teamwork to combine the presentation of general information and specific issues concerning the OR DTC goals.

Formal sessions have been designed to provide students with the necessary knowledge to apply a set of innovation and entrepreneurship techniques in technology-based domains.

This objective will be addressed by providing students with ***updated insights on the evolution of innovation and entrepreneurship in the ICT domain*** from academic and industrial perspectives. Special attention will be paid to the European situation and the coherence between European and national or regional policies.

Faculty members of the UPM but also invited speakers from several tech companies, start-ups or capital risk will complement these views from a more practical setting.

Working sessions will allow registered doctoral candidates in the EIT Digital DTC to understand the logics of the EIT Digital Doctoral School programme and the way that the learning objectives

will be evaluated. It also serves to meet faculty members and other doctoral students and to know better the respective areas of interests.

Within these closed sessions, doctoral candidates will have the opportunity to present how the results of the thesis could be converted in (or feed-up the development of) new products and services. We are well aware that ICT is a huge field and theses' topics differ too much to be able to provide a single path to the market; then, alternatives and trade-offs should be also described.

The OR course will be conducted in a ***highly interactive way where formal and informal interaction is especially pursued***. Then, Q&A sessions should be embedded in the programme's sessions to ensure that students could solve their doubts and interact with faculties and invited speakers. Finally, time to work individually and in groups was also planned.

Learning outcomes

Main outcome of the seminar is to raise the students' awareness on the **innovation potential of their doctoral research for future ICT products and services**.

More specifically, at the end of the seminar, students will have the ability to:

- Identify and analyse digitization trends and their impact on an industry to recognize and assess business opportunities
- Recognize business opportunities by adopting a customer/user-centric perspective
- Apply business modelling (BMC) and fundamental business planning skills (value, costs/revenues analysis, market analysis)
- Conduct a market analysis (including market demand, customer expectations, and customer value).
- Explain the business development process at early stage
- Identify value elements in research and technology and relate them to innovation and business solutions answering customer problems/needs
- Understand the fundamentals of new product/service development stages and processes
- Take into account a technology transfer or open innovation scenario in a business development project
- Demonstrate oral presentation skills

To facilitate the full understanding of the addressed issues, doctoral candidates should complete a set of pre-assignments on innovation, entrepreneurship and EIT Digital.

Selected pre-assignments:

In order to facilitate the development of the seminar, DTC participants should prepare:

- A short description (2-3 pages) of the relevance of the topic chosen for the doctoral thesis from an innovation and commercial perspective.

    It is not the intention to request the development of a market analysis but to give

some hints about the potential applicability of the thesis in terms of digital products or services and its potential advantages for users.

- 5-6 slides to be presented in the seminar (for 6-8 minutes) to the rest of participants about the interest of the doctoral thesis to generate very innovative products or services.

  The slides should be oriented towards the applicability and potential avenues for exploitation of the intended results and main differences with respect to other more conventional approaches.

  It is not necessary to describe technical aspects in detail because the rest of participants could not be experts in the specific topic of the thesis. Open questions could be also introduced to motivate further discussion.

Pre-assignments must be sent to gonzalo.leon@upm.es at least one week before the seminar.

Selected post-assignments

Within two weeks after finishing the course, doctoral candidates should write:

- 200 words opinion about the course programme and execution.
- 1.000 words comment on one of the topics covered by the course
    - relevance and relationship with the future activities of the doctoral thesis
    - set of planned activities to be carried out in 2016

Both post-assignments should be sent to gonzalo.leon@upm.es

Preliminary Programme

Day 1 (22nd February 2016)
9:30 -10:00 Participant Registration

10:00-10:30 Welcome and opening of the course

 Goals, Introducing participants, working methods

  Prof. Carlos Conde (Rector UPM)

  Prof. Gonzalo León (Director Centre for Technology Innovation, Educational Support, EIT Digital)

  Dr. Susana Eiroa (Madrid DTC Lead, EIT Digital)

10:30-11:30 Learn from a case: "From academic research to international company"

  Prof. Jose Carlos González (CEO Sngular)

11:20-12:00 Coffee Break and Networking

12:00-13:00 EIT Digital start-up support: "Steps to the market: research and entrepreneurial context in the EU"

        Prof. Gonzalo León (I&E Coordinator, EIT Digital)

13:00-14:00 EIT acceleration: "Accelerating start-ups in the EIT"

        Dr. Jesús Contreras (Madrid CLC, EIT Digital)

14:00-15:00 Lunch and Networking

15:00-17:30 Students' presentations

> Each participant will describe in 5-8 min the initial opportunities for marketing the results of doctoral theses.

> Students' themes will be clustered to work during the rest of the seminar.

> Target audience: participants and faculty members

18:00 End of 1ˢᵗ Day

Day 2 (23ʳᵈ February 2016)

9:30-10:30 Invited talk: *"Open Future"*

10:30-11:30 Invited talk: "Evolution of Innovation and entrepreneurship strategies in IBM"

> Elisa Martín (**Chief** of Technology and **Innovation**, **IBM)**

11:30-12:00 Coffee Break and Networking

12:00-13:00 Technology watch: "How to select the appropriate technology"

> Prof. Gonzalo Leon (UPM)

> Alberto Tejero (UM)

13:30-14:30 Lunch and Networking

14:30-16:00 "A vision of the risk capital in the EU"

> Risk venture firm (CEO)

> Aristides Senra (UPM) (invited speaker)

16:00-18:00 Seminar: "Funding start-ups"

> Students should work in groups to fill-in a template with information related to their business ideas

> Mentoring from CAIT-UPM team

18:00 End of 2ⁿᵈ Day

Day 3 (24th February 2016)

9:30-11:30 Protection of technology

Patents and other instruments
The protection of software
(ABG patents)

11:30-12:00 Coffee break

12:00-13:30 Seminar: "How to protect the results of doctoral theses"
Experiences from the UPM
(OTRI-UPM)
Students should fill-in a questionnaire related to their respective doctoral theses to check the opportunities and appropriate instruments available for protection.

Mentoring from OTRI UPM team

13:30-14:30 Lunch and Networking

14:30-16:00 "Commercialization of technology-based products"
Experiences from the UPM
Ivan Martinez (Commercialization Director, CAIT-UPM)

16:00-16:30 Coffee break

16:30-18:00   Visit to CAIT business incubator
Round table with 3-4 companies incubated
Q/A session

18:00 End of 3rd Day

Day 4 (25th February 2016)

9:30-11:30 Development of the Business model (I)

The CANVAS model

Aristides Senra (UPM)

11:30-12:00 Coffee break

12:00-13:30 Development of the Business model (II)

Working the CANVAS model: initial views
Aristides Senra (Programmes Director, CAIT-UPM)

13:30-14:30 Lunch and Networking

14:30-16:00 Individual assignment

Students should fill-in a questionnaire related to their respective doctoral theses to check the opportunities and appropriate instruments available for commercializing the results.

Mentoring from Innovatech_UPM team

16:00-16:30 Coffee break

16:30-18:00 Seminar (to be recorded)

How to improve presentations related to business issues (5 minutes elevator pitches). Students will practice on several techniques and they will be recorded to check the presentations made.

(UPM-GATE)

Aristides Senra

18:00 End of 4ᵗʰ Day

Day 5 (26ᵗʰ February 2016)

9:30-11:30 Planning the development of a start-up

Elisa Navarro (Director *actúaupm* programme)

Aristides Senra (UPM)

11:30-12:00 Coffee break

12:00-13:30 Presentation of the Business ideas from doctoral theses

Each participant will describe in 5-8 min. the initial business model based on the results of their doctoral thesis worked out during the OR course.

Students will present it to a jury composed by one group of external experts participating in Spanish entrepreneurship programmes.

13:30-14:00 Closing session

14:00-15:00 Informal lunch