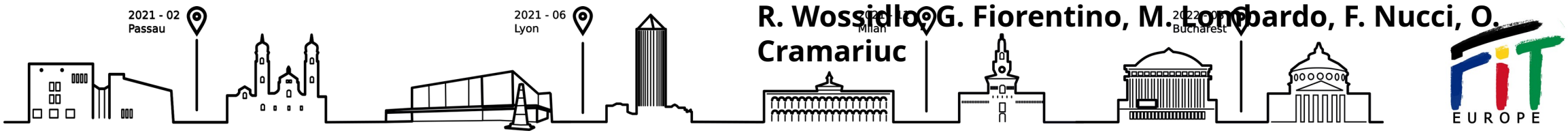
Fostering Student Entrepreneurship Mindset through the Embedding of International Student Teams into Start-ups and the Study of Company-Driven Open Questions

L. Brunie, S. Ben Mokhtar, D. Brac de la Perrière, D. Fabrègue,
L. Tondu, A. Cordier, V. Delplanque, A. Bertrand, O. Coueffe,
H. Kosch, E. Damiani, S. Cimato, A. Awada, A. Olaru, R. Wossidlo, G. Fiorentino, M. Lombardo, F. Nucci, O. Cramariuc



Co-funded by the Erasmus+ Programme of the European Union

Co-funded by the Erasmus+ Programme of the European Union

FIT-Europe

- FIT-Europe: Future IT Leaders for a Multicultural Digital Europe
- Strategic Partnerships for higher education action of the ERASMUS+ program
- FIT-Europe consortium
  - 4 leading universities from France, Germany, Italy, and Romania: INSA Lyon, Univ. of Passau, Univ. of Milan, University Politehnica of Bucharest
  - 4 “deep tech” corporate partners: La French Tech One Lyon Saint-Etienne, Atos International Germany GmbH, Engineering Ingegneria Informatica, Centrul IT pentru Stiinta si Tehnologie
- Audience : high level students from IT and computer science master programs

FIT-Europe 4 Pillars

- Develop high-level scientific and technical skills in 4 leading IT techs: AI/ML/Big Data, Blockchain, Internet of Things, Robotics

- Study the societal and ethical impacts of these technologies e.g., ethics, privacy, cybersecurity, climate change, digital democracy, assistive living, digital inclusiveness, entrepreneurship…

- Involve academic researchers and industry experts, and allow students feel/experience R&D process through team projects

- Strengthen intercultural and soft skills through a unique international experience (team projects, round tables, societal questions, exchanges…) and provide a global European vision on the target technologies, their impacts, the opportunities they raise

Co-funded by the Erasmus+ Programme of the European Union

Co-funded by the Erasmus+ Programme of the European Union

Lyon Seminar: Blockchain and Entrepreneurship/Start-up Creation

- Target technology: Blockchain

- Joint organization
  - National Institute of Applied Science of Lyon, France
    - Department of Computer Science and Information Technology
  - La French Tech One Lyon Saint-Etienne association
    - Start-ups, scale-ups, and innovative SMEs of Lyon-Saint-Etienne region
    - Entrepreneurs, investors, policy makers, community builders and governments
    - Promotes the creation, growth and internationalization of start-ups

- 20 students from the 4 academic partners

- Companion paper (Milan seminar): “Training Future IT Leaders in a Collaborative and Multicultural Setting”

Co-funded by the Erasmus+ Programme of the European Union

A 6-phase Methodological Approach

1. Select innovative start-ups involved in the blockchain ecosystem and volunteer to each collaborate with a student team
2. Make a survey of the expectations of these start-ups regarding future graduates in terms of skills and competences
3. Build a pedagogic team composed both of industry experts and academic researchers, all with a strong experience and background in blockchain so as to cover blockchain scientific and technological foundations, its applications, and its societal impacts. Design the program composed of lectures, team projects, round tables/discussions (and social activities!)
4. Collect, from the start-ups, proposals of projects to be performed by a student team in tight collaboration with the start-up staff
5. Select students from high-level master programs, considering their academic record and their motivation for the topic and the philosophy developed in the seminar (5 students per academic institution)
6. Compose the international student teams, considering their background and personal record

Co-funded by the Erasmus+ Programme of the European Union

Expectations of blockchain start-ups regarding future graduates' skills and competences

15 competences and skills, esp.

- strong learning ability, constant technological watch
- fundamental scientific and technological competences
- critical thinking
- ability to understand strong trends, ability to understand weak signals, curiosity
- global and transversal understanding
- ability to work in a team
- flexibility and agility
- being resourceful

Co-funded by the Erasmus+ Programme of the European Union

Embedding Student Teams into Start-ups (1/2)

- 1 student team – 1 start-up
- Experience the life of a start-up
- Contribute to the development strategy and the technological choices actually faced by the start-up (note: do not run yet another hackathon)
- Benefits
  - for the start-up, get feedback from the students
  - for the students
    - be in touch and work on actual issues faced by the start-up
    - collaborate with the start-up staff
    - improve their skills and competences
    - bring their own added-value

Co-funded by the Erasmus+ Programme of the European Union

Embedding Student Teams into Start-ups (2/2 - Projects)

- Assess how Distributed Ledger Technology (DLT) can be leveraged in order to secure and trace the exchange of data and information between authorities and contractors, and compare and assess existing solutions (proposed by AITenders)

- Study the relevance of blockchain technology to support the management of invoices and payments and, more generally, the financial relationship between a customer and a supplier, and propose a target support infrastructure (Kresus)

- Study how blockchain technology can be used to model and operate IoT-based sensitive applications (iExec)

- Elaborate a benchmark of blockchain-based decentralized exchange architectures for securing and tracing financial transactions (Equisafe)

Co-funded by the Erasmus+ Programme of the European Union

Embedding Student Teams into Start-ups (From Face-to-Face to Distance Learning)

- And the Covid emerged…

- Develop a program of online social activities (online challenges, quizz, games…)
- Leveraged the collaboration tools and features proposed by Glowbl, a Lyon start-up
- Rearranged the schedule of the seminar so as to dedicate regular time slots to the exchanges between the start-up staff and the student team

Co-funded by the Erasmus+ Programme of the European Union

Output

- Very positive feedback from the students, the start-ups, the keynote speakers
- Strong motivation throughout the seminar
- 50% of the students plan to create a (mostly deeptech) start-up in the next 5 years
- However, distance has a strong negative effect (and some good features)

Lessons Learnt (1/2)

- Leveraging skills and experience of both industry experts and academic researchers for designing and implementing high-level technological curricula/address cutting-edge technologies

- Embedding student teams into start-up to raise their awareness of entrepreneurship: entrepreneurship is not a theoretical question!

- Addressing at the same time (i.e., in the same seminar) the foundations of a technology, the business and application opportunities it offers, and the societal and environmental issues it raises

Co-funded by the Erasmus+ Programme of the European Union

Co-funded by the Erasmus+ Programme of the European Union

Lessons Learnt (2/2)

- Organizing one-week or longer thematic seminars to create an active “community of advanced knowledge and expertise” among all the stakeholders
- Developing intercultural skills and promoting a global vision through international lecturer and student teams
- Leveraging opportunities offered by online tools
  - Before the seminar: to build the seminar community and student teams, and to allow all students to get the prerequisites
  - After the seminar: to maintain the link between the participants
- FIT Europe multi-media library (material of the four seminars): https://library.fit-europe.eu/