

Beehive challenges to reinforce Asian University entrepreneurship

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ABSTRACT. Two significant National Reports (Indonesia and Philippines) came out from the documentary and field work researches that had actively involved Asian academic clusters within the international venture Beehive. Feedback received witnesses that University entrepreneurship is certainly considered important in both clusters even if it is evident that there is no a unique model or strategy for the University to embed entrepreneurial approach into the academic management and learning offer. The initiative, guided by the University of Varna, has been funded by the European programme Erasmus + KA2 - Cooperation for innovation and the exchange of good practices (Capacity Building in Higher Education). The project aims at building sustainable university-based entrepreneurial ecosystems in Asian Higher Education Institutions to enhance students' and graduates' entrepreneurial and innovation skills and then ability to create jobs. Partners during the project life will build up sustainable entrepreneurial university ecosystems by establishing and embedding start-up accelerators with a business start-up support services for students. Finally, the involved universities will be committed to achieve a specific quality label certifying the excellence and efficiency of their entrepreneurial ecosystems. Beehive core mission is then coherent with the last trends of the European Commission Industry Strategy since the presence of entrepreneurial education offer and services in academia environments will contribute to reinforce the linkages between information technology last innovations, business actors and academic research representatives.

KEYWORDS: *Asian academia, Baseline research, Entrepreneurial ecosystems, Industry 4.0, Start-up project*

Core mission

Beehive is an international project primarily focused on building entrepreneurial ecosystems to enhance Higher Education quality and consequently contribute to a better graduate employability. Beehive

core mission is coherent with the last trends of the European Commission Industry Strategy since entrepreneurial education offer and services in University environments will contribute to reinforce the linkages between information and communication technology innovativeness, business actors and academic research representatives. As Vice-President for Jobs, Growth, Investment and Competitiveness Jyrki Katainen said: "By embracing technological change, converting research investments into innovative business ideas, and continuing to pioneer the low-carbon and circular economy we will pave the way for a smart, innovative and sustainable industry in Europe" (European Commission Press, 2017). Beehive has been funded by the European funding programme Erasmus + KA2 - Cooperation for innovation and the exchange of good practices - Capacity Building in Higher Education. Since the kick off project, it has benefited from eleven partner institutions sited in five European countries, in Indonesia and in the Philippines.



Figure 1. Beehive and Erasmus Plus project logos

Since the beginning the strategic partnership coming from Bulgaria, Greece, Italy, Iceland, Ireland, Indonesia and Philippines had positively impacted on project kick off actions.

The project aims at building sustainable university entrepreneurial ecosystems in Higher Education Institutions (HEI) to enhance students' and graduates' entrepreneurial skills and abilities creating more qualified jobs. The project's core aim is to support HEIs' transformation into entrepreneurial university. In the long run it will contribute to the development of knowledge-based societies/economies. One of the core and propaedeutic planned action was to identify an exhaustive research background to compare the Asian Universities' entrepreneurship adoption. Baseline research was embedded in the Workpackage 2 *Towards the Entrepreneurial University National Benchmarking*. Two different clusters, one for Indonesia and one for Philippines were built up allowing the partnership to identify how many universities could be defined as entrepreneurial ones, how many university entrepreneurial ecosystems were active and the eventual gaps/shortages or strengths. Partners mapped out the status of partners' universities to identify gaps as well as areas of strengths and accomplishments of the existing university entrepreneurial ecosystems. In the three years project, Universities and business actors will increase awareness in academic settings of students through start-up initiatives', game changing role in both job creation and students' personal development. Partnership will build up sustainable entrepreneurial university ecosystems by establishing and embedding start-up accelerators with a business start-up assistance services for students.

Since the beginning of the project, each organization has assumed a precise role coherently with its expertise in order to effectively achieve core project goals, share knowledge and practices in the field of entrepreneurship. That effective synergy has been focused on achieving Beehive core aims, in particular overcoming Asian academic constraints and boundaries and move forward to future conceptual models. Nowadays, Higher Education Institutions need to urgently cope with the social and economic needs of society, a "deep, radical and urgent transformation" is definitely requested (Barber et al., 2013), Traditional conceptual and organizational models have to be revised. Higher

Education needs to be integrated by entrepreneurship, one of the core challenges of next Academia. The pressing requests coming from the new labour market are quickly evolving and employees should be prepared in "business and customer awareness, problem solving, team-work, communication and literacy, application of numeracy and information technology, and need to demonstrate a 'can-do' approach as well as openness to new ideas and the drive to create value from these" (EU-OECD, 2017). An entrepreneurial Higher Education Institution coherently with the recent and forthcoming labour market and society changes should respond to such request. All over the world, it is possible to observe that there is no a "unique" model, but different strategies in which higher education institutions support entrepreneurship. In Beehive baseline analysis project phase, it was highlighted that Universities promote entrepreneurship in different ways, for example they involve external stakeholders in management and leadership or/and they create synergies between education/training, research and business worlds. They either support entrepreneurship business start-up initiatives, knowledge exchange process, as well as they enhance the innovativeness of existing firms: "Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterized by high levels of uncertainty and complexity and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery and exchange with all stakeholders in society - local, national and international....." (Gibb, 2013).

The scenario has thus changed moving from the discussion on 'why' academia should promote entrepreneurship to the analysis of 'how' it should to be planned and managed. New entrepreneurship features should to be taken in serious consideration by universities' management board, professors and students, they need to be effectively integrated in the University environment and, at the same time, they need to continue to allow fulfilling the traditional academic requirements.

Therefore, one of the core action of Beehive was to set out an exhaustive research background to outline and assess the Asian Universities entrepreneurship. In order to proceed with the analysis, two clusters were built up, one for Indonesia and one for Philippines. Research was embedded in the Workpackage (WVP) number 2 *Towards the Entrepreneurial University National Benchmarking* and two quite interesting National Reports (Indonesia and Philippines) came out from the documentary and field work researches which has actively involved both Asian academic clusters. Research objectives were first to explore in detail the progress of universities in Indonesia and the Philippines outlining the recent trends compared with the entrepreneurial university concept, then, identifying how many universities in Indonesia and the Philippines could be defined as entrepreneurial ones, and finally investigating the current university entrepreneurial ecosystems to identify the existing gaps/shortages and areas of strengths.

A brief screenshot of the questionnaire is available in the Annex A.

The questionnaire was designed to investigate key aspects of the entrepreneurial features in the universities, in particular:

- entrepreneurial approaches and attitudes applied in the governance of the universities in Indonesia and the Philippines including organisation design, decision making mechanisms, existing opportunities for leveraging external funding

- stakeholder management mechanisms at the universities in Indonesia and the Philippines including regional and local partnerships, business links, alumni engagement, social enterprises, student engagement and student ownership
- knowledge transfer including spin-offs, incubators and intellectual property policies in place in the universities; entrepreneurship education provided at the universities including pedagogy, staff development, cross campus initiatives, student start-up examples
- internationalization of the academic communities and internationalization of academic content and programmes

Research findings in Indonesia

Interesting findings came out from the field and documentary researches explored in Indonesia. A first clear state of art with regard to the transition of Indonesia Higher Education Institutions (HEIs) towards the “entrepreneurial university” concept was introduced still in the first draft of the report we have presented in a snapshot.

Baseline research has represented an essential propaedeutic activity for Beehive project. In fact, it is aimed to build sustainable university-based entrepreneurial ecosystems in Higher Education Institutions to enhance students’ and graduates’ entrepreneurial skills to create new jobs and respond to the request of the labour market. The project’s core aim will be then to support HEIs’ transformation into entrepreneurial universities which in the long run will contribute to the development of knowledge-based societies/economies. Research has allowed to point out a precise background and then to define a possible strategy for the future.

Research results, according to the responses provided by the interviewed universities highlighted that, it is clear that entrepreneurship was very important for almost all of them (90%) and it was even formally incorporated (one way or another) into the university vision/mission statement. The same number of HEIs had a systematic approach to identify and deal with challenges and opportunities in society, while a somewhat smaller number applied a model to coordinate entrepreneurial activities across all levels.

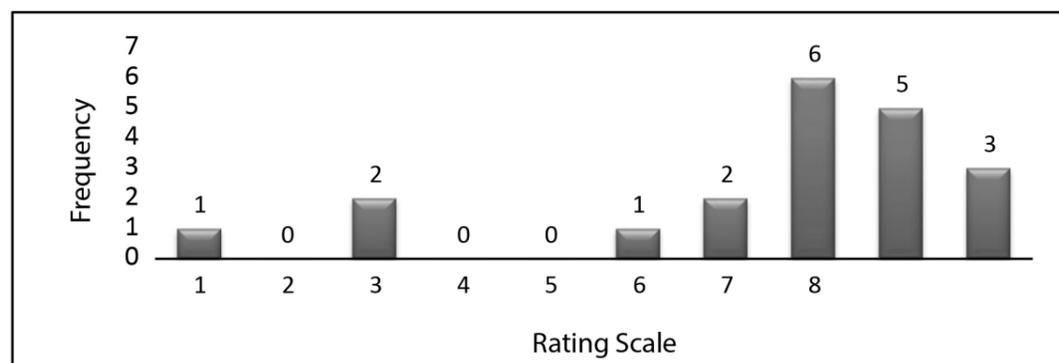


Figure 2. Is innovation in broader sense seen as central to the university work?

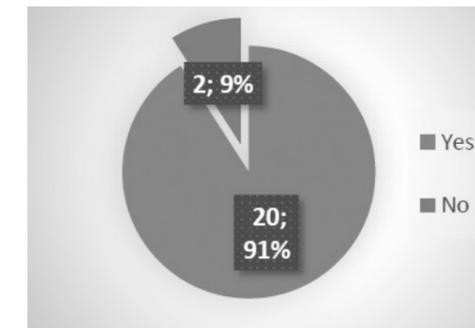


Figure 3. Is entrepreneurship a major part of your university's Strategy?

A similar context has been registered from the side of organization, human resources and incentives. In terms of organizational capacity, most HEIs (to a percentage that exceeds 75%) have a structure that facilitated bottom-up approaches, have a degree of autonomy when it comes to faculties and units making decisions and apply decentralized decision-making. About 60% of the universities consider themselves a driving force for entrepreneurship and innovation in regional, social and community development. This seems to be true at local level where the HEIs affect their immediate environment, but becomes less relevant as the spatial scale increases.

In terms of managing and utilizing human resources, the majority of the universities invest in staff to promote their entrepreneurial agenda (more than 70%). They recruit or are open to recruiting people with an entrepreneurial mind set (86%). Furthermore, they encourage their staff and students to act entrepreneurially (72%) and more than half of the asked university (59%) provide incentives (financial or otherwise) to reward entrepreneurial behaviours. Additionally, more than 75% of the surveyed HEIs have some sort of dedicated alumni office/unit and involve their alumni in a series of relevant activities.

At the financial level, slightly more than half of the universities allocate resources towards achieving their entrepreneurial agenda. On the other hand, more than 72% are actively seeking sources of revenue that are not related to fees or traditional public funding. It must be noted that due to the differences in funding among participating HEIs (which range from exclusively public to exclusively private funding) some restrictions are in place that make actual comparison in terms of funding problematic. Very few HEIs have an IP and patent support structure in operation. As a result, the number of patents, licenses and royalties among them is very limited (with only one exception).

As far as entrepreneurship education is concerned, all surveyed universities provide entrepreneurship courses and these courses are embedded in each department's curriculum (86%). The majority have an entrepreneurship structure/unit in place (77%) and in 63% of the HEIs entrepreneurship education is offered beyond the business and economics departments. Entrepreneurs and professionals outside the university are highly involved in most cases (higher than 75%), both in implementation and in curriculum development.

When it comes to more specific actions (rather than policy or strategy) the numbers start to drop a little: 59% of the 22 surveyed HEIs report on some kind of social entrepreneurship activity, while slightly more than half of the universities provide accelerator/incubator services or have external links to incubators, science parks etc. Exactly half provide support for spin-offs, while 59% provide some access to external sources of funding for business creation.

Internationalization and cooperation are important and have high scores in the relevant questions with the highest scores observed in education and training cooperation. In terms of measuring impact however, the numbers are not as high. A little more than half of the universities assess the impact of their entrepreneurial agenda, while only 40% measure the effectiveness of start-up support. A higher percentage (63%) regularly evaluate knowledge exchange and collaboration. In terms of actual cooperation projects, few of the HEIs provided real life cases.

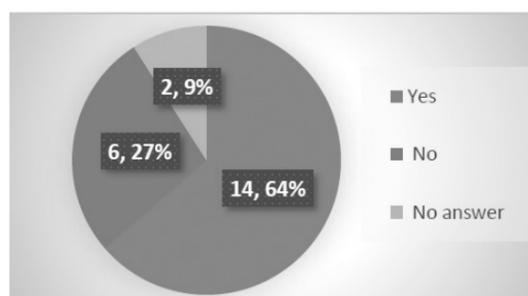


Figure 4. Are the processes of “internationalization at home” stimulated at your university?

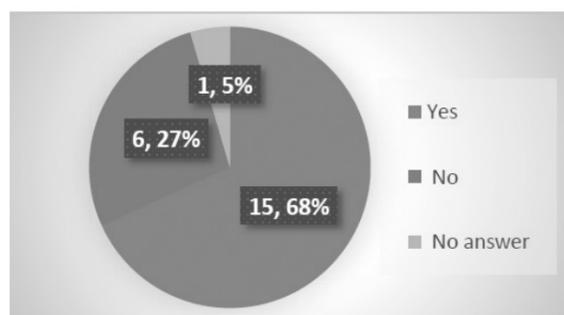


Figure 5. Does the university, its departments and faculties actively participate in international networks?

It is clear that entrepreneurship as an education subject and entrepreneurial values and activities as a source of funding is becoming very important to HEIs in Indonesia. In terms of entrepreneurship education, while it is considered a subject that must be taught in all universities, the approaches differ and the necessary support structures and models seem to be a bit lacking. This is the case especially when it comes to providing support to get from idea to business generation, allowing for the fact that some of the provided support is informal or based on individual arrangements.

In terms of adopting entrepreneurial behaviors and implementing entrepreneurial activities for their operation and for securing additional funds, again there is great variation among universities ranging from considering appropriate approaches to actually generating significant revenue. Of course, depending on the nature of each university, the varying degree of entrepreneurial behavior is not surprising, since there are many differences and many restrictions/requirements among them depending on their source of main funding, their affiliations, goals and mission, etc.

In line with the previous observations, it is important that some kind of framework is developed, in order to improve on the ability of the universities to design and implement entrepreneurial activities and entrepreneurship education. Regarding organizational capacity, steps could be taken in order for HEIs to evaluate and implement entrepreneurial initiatives in a systematic way. This also means that some kind of monitoring and assessment model should be in place and that institutional changes are introduced to avoid legal challenges (e.g. adoption of patent policies, royalties etc.).

The current National Benchmarking Report for Indonesia shall be used as a starting point for the design, development, dissemination and use of the Massive Open Online Course (MOOC) planned for the next phase of the BEEHIVE project.

In addition, it will facilitate the establishment and implementation of acceleration programmes in the setup of accelerators for the BEEHIVE project as well as the design and award of BEEHIVE Label. The latter will be introduced towards the final project stage and will aim to identify and promote excellence and efficiency of existing university ecosystems (National Benchmarking Report for Indonesia, 2017).

Research findings in Philippines

The HEIs considered themselves as the driving force in regional and community development. Hence, extension services of these HEIs, which derive from research and innovation activities and applied to communities play a significant role in community and regional development. Therefore, internal and external financial support as well as competent personnel structure is necessary. There are prominent signs recognizing the importance of entrepreneurship and entrepreneurial thinking as a way to drive innovation in the respective institutions as well as open up new opportunities for its students. Capacity building is among the activities necessary to achieve a university-entrepreneurial ecosystem. The National Benchmarking Report for the Philippines illustrates that HEIs are at the point of emergence in the track towards an entrepreneurial ecosystem. The building up of soft and hard infrastructure, including the university-based Innovation and Technology Support Offices and Centres related to entrepreneurship by the HEIs, to support the needs of their students, teaching and non-teaching personnel, and alumni, are indicators leading to achieving the goals of a university entrepreneurial ecosystem. It is worth noting that after this study was conducted a number of the participating universities have made initiatives such as building an innovation centre or an incubator. Given the collective HEI input on existing initiatives to support these entrepreneurial initiatives, there is a validated need to bolster support and capabilities of HEIs to enable and sustain entrepreneurial activity on different fronts.

The assessment advised that HEIs take the following next step:

- (1) create opportunities to build more partnerships with investors
- (2) establish joint ventures
- (3) address the need for guidance on engaging in new business models and
- (4) strengthen industry engagement to craft relevant programmes and opportunities for students.

To optimize the benefits of open innovation, it is also recommended to focus on designing organizational structures for HEIs to have fair representations on bottoms-up approaches. There have been good case studies cited as far as leveraging on student input as sources of innovation. It is recommended to scale this best practice, as well as for HEIs to provide clear next steps for students venturing into entrepreneurial activities in order to progress with their respective businesses.

There are challenges cited by certain HEIs regarding procurement and funding. This certainly presents a relevant call to action on reviewing current procurement policies and considering a more optimized process to procure materials needed for the creation of products and fast prototyping. While there are available funding mechanisms for business investment in the Philippines, a gap is seen between businesses in the pre-commercialization stage and commercialized businesses that have achieved significant revenue targets. As HEIs are great platforms to explore business possibilities and launch them, funding gaps between these segments can possibly be mitigated via bolstering the relations of alumni to potentially support businesses that are already technically supported internally in the HEI and may just need market exposure support, connections, and seed funding to get off the ground.

The data gathered by this assessment serves as good input into the design, development, dissemination and use of the Massive Open Online Course (MOOC) planned for the next phase of the BEEHIVE project. In addition, it will facilitate the establishment and implementation of acceleration programmes in the setup of accelerators for the BEEHIVE project as well as the design and award of BEEHIVE Label. The latter will be introduced towards the final project stage and will aim to identify and promote excellence and efficiency of existing university ecosystems.

It is worth noting that leveraging on collaborative endeavours with different institutions and key individuals serve as keys to optimize positive entrepreneurial impact of these accelerators. One such form of collaboration is the establishment of a framework and mechanisms to measure the impact and evaluate how these HEIs perform on their entrepreneurial initiatives. A mechanism for benchmarking would allow continuous involvement and opportunities for collaboration among Philippine HEIs even long after the BEEHIVE project is completed (National Benchmarking Report for Philippines, 2017).

ANNEX A. Benchmarking tool



Co-funded by the
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BENCHMARKING TOOL

A. LEADERSHIP AND GOVERNANCE

1. Entrepreneurial approaches and attitudes applied in the leadership and governance of the University, including organization design, decision making mechanisms, existing opportunities for leveraging external funding.

1.1. Is entrepreneurship a major part of your University's Strategy (mission statement, vision, indicators?)

1.2. Is this Strategy articulated in a formal way?

1.3. Is innovation in broader sense seen as central to the University work?

1.4. Does your University have strategic and practical directions vis-a-vis challenges and opportunities in the society?

1.5. Does your University have a model for coordinating and integrating entrepreneurial activities across all levels?

B. ORGANIZATION CAPACITY, PEOPLE AND INCENTIVES

2. Does your University encourage faculties and units to act entrepreneurially?

3. Do the faculties and units have autonomy to act?

4. Do you consider your University to be a driving force for entrepreneurship and innovation (E&I) in regional, social and community developments?

In regional development:

In community development:

5. Does your University's organizational design facilitate and support bottom-up entrepreneurial and innovative behavior?

6. Does your University apply decentralized decision making?

7. Is your University open to recruiting and engaging with individuals who have entrepreneurial attitudes, behaviours and experience (people from outside academia, incl. alumni)?

8. Does your University invest in staff development to support its entrepreneurial agenda?

9. Does your University provide incentives and rewards to staff who actively support its entrepreneurial agenda?

10. Are there any resources or funding allocated to the completion of entrepreneurial objectives?

Financial:
Infrastructure:
Human Resources:
Other:

11. Does your University show commitment and capacity to raising revenue from non-fee and traditional public sources?

12. Please provide information on the existing ratio of private to public funding at your University. (max. 1000 characters)

13. Are deans and faculty heads at your University proactive in raising funds and revenues?

14. Is an Alumni Office/Department a part of your organizational structure?

15. Does your University have a dedicated support office for IP and licensing?

16. If relevant, please provide information on the number of patents and licenses and royalties received at your University. (max. 1000 characters)

17. Does your University actively encourage individuals to become entrepreneurial?

C. ENTREP. DEVELOPMENT THROUGH TEACHING AND LEARNING

18. Please explain shortly how is your University engaged with local entrepreneurs in teaching and research? (max. 1000 characters)

19. Does your University offer degrees with active business and professional engagement?

20. Is student engagement and ownership considered essential at your University?

Students as change agents, hence students engagement in the processes of university governance and change:
Students as knowledge producers, hence students as initiators and deliverers of research projects:
Students as co-creators of curriculum, hence students as contributors to curriculum development and update:
Students as evaluators, hence students as educational quality assessors:

21. Does your University integrate research, education and industry (wider community) activities to exploit new knowledge?

22. Entrepreneurship education provided at the universities in Indonesia and the Philippines including pedagogy, staff development, cross campus initiatives, student start-up examples.

22.1. Does your University offer courses in Entrepreneurship, or courses that help to develop entrepreneurial mindsets and skills?

23. Is entrepreneurship education embedded in each department's curriculum?

24. Is there a central support unit for entrepreneurship and enterprise education at your University?

25. At your University, is there capacity for entrepreneurship education and development beyond the business school?

26. Are external stakeholders involved in the design and delivery of the entrepreneurship curriculum?

27. Are the results of entrepreneurship research (if any) at your University integrated into the entrepreneurial education offer?

28. At your University, is access to experienced individuals from academia or industry (for mentoring or other personal development actions) offered?

D. PATHWAYS FOR ENTREPRENEURS

29. Are there any social enterprise initiatives generated at your University?

30. Knowledge transfer including spin-offs, incubators and intellectual property policies in place in the universities of Indonesia and the Philippines.

30.1. Does your University have links with incubators, science parks and other external initiatives?

31. Does your University offer incubator or accelerator services?

32. Does your University specifically support staff and student mobility between academia and the external environment?

33. Does your University provide support for spin-off activities?

33.1. If relevant, please provide information on the number of spin-offs recorded at your University. (max. 1000 characters)

33.2. If relevant, please provide up to 3 examples of your University's most successful spin-offs. (max. 1000 characters)

34. Does your University have joint venture funding partnership arrangements (angel connections)?

35. Does your institution support its students, graduates and staff to move from idea generation to business creation?

36. Does your University facilitate access to private financing for its potential entrepreneurs?

E. KNOWLEDGE EXCHANGE

37. Stakeholder management mechanisms at the University, including regional and local partnerships, business links, alumni engagement, social enterprises, student ownership.

37.1. At your University, is commitment to collaboration and knowledge exchange with industry, society and the public sector an institutional policy?

38. Is your University or any of its faculties and units involved in consultancy activity?

39. Does your University demonstrate active involvement in partnerships and relationships with a wide range of key stakeholders?

40. Does your University have active partnerships with local vocational schools and colleges?

F. INTERNATIONALIZATION

41. Is internationalization considered a horizontal policy at your University?

42. Does your University explicitly support the international mobility of staff and students?

43. Are the processes of “internationalization at home” stimulated at your University?

44. Does the University, its departments and faculties actively participate in international networks (support structures, partnerships and international alumni)?

G. MEASURING IMPACT

45. Does your University regularly assess the impact of its entrepreneurial agenda?

46. Does your University regularly assess the impact of start-up support?

47. Does your University regularly assess knowledge exchange and collaboration?

48. Please explain shortly to what extent does your University assess its value on the basis of wide legitimacy with stakeholders. (max. 1000 characters)

49. Please provide up to 5 examples of your University’s most successful and high-profile business partnerships. (max. 1000 characters)

Thank you for your time and valuable contribution!

BEEHIVE project team

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Sintesi

Nell'ambito del progetto Beehive, finanziato dal programma europeo Erasmus + KA2 - Cooperation for Innovation and the exchange of good practices (Capacity Building in Higher Education), è stata condotta una ricerca documentale e sul campo in Indonesia e Filippine con lo scopo di individuare la presenza di Università che fossero in grado di offrire formazione o/e servizi a supporto dell'imprenditorialità giovanile.

Beehive è un progetto internazionale iniziato ad Ottobre 2016 della durata di tre anni con l'obiettivo di sviluppare e rafforzare ecosistemi accademici imprenditoriali sostenibili nelle istituzioni asiatiche di istruzione superiore. Gli studenti coinvolti durante e dopo il progetto avranno la possibilità di accrescere le loro competenze imprenditoriali e innovative contribuendo così sia alla crescita dell'occupazione nazionale e regionale, sia al rafforzamento della cosiddetta società della conoscenza e dell'economia.

In questa fase, le Università asiatiche indonesiane e filippine hanno concluso l'analisi sul campo e documentale pubblicando due report nazionali di rilievo. L'aspetto imprenditoriale si è rilevato presente nella maggior parte delle università intervistate in entrambi i cluster nazionali. La gestione, l'offerta formativa ed i servizi offerti per stimolare l'imprenditorialità nel mondo accademico asiatico si sono, tuttavia, rivelati diversi in ogni contesto e organizzazione. Non esiste infatti una sistematicità o riferimento normativo imposto dalle rispettive autorità nazionali, di conseguenza l'imprenditorialità viene promossa in modo autonomo e volontario. La ricerca ha permesso di individuare l'esistenza o meno di ecosistemi imprenditoriali ed identificare nello stesso tempo elementi di forza e di debolezza in queste stesse strutture. Core mission dei tre anni sarà, infatti, la sensibilizzazione degli studenti e del mondo accademico sull'importanza dell'elemento imprenditoriale e delle competenze relative nell'attuale mondo del lavoro. Le sfide che Beehive intende vincere si inseriscono perfettamente nella strategia programmatica dell'Unione Europea per la Politica Industriale che individua come elementi cardine per il suo sviluppo l'investimento nella ricerca e in idee innovative, l'innovazione tecnologica e l'economia sostenibile.