Tailored IoT & BigData Sandboxes and Testbeds for Smart, Autonomous and Personalized Services in the European Finance and Insurance Services Ecosystem

∞Infinitech

D8.9-Third-Party FinTech and InsuranceTech Solutions – I

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[1] Lead Beneficiary, Contributor, Internal Reviewer, Quality Assurance

[2] Can be left void

Executive Summary

The Deliverable D8.9 – 'Third-Party FinTech and InsuranceTech Solutions – I' comprises an overview of the required procedures for the designing and implementing of the INFINITECH Hackathons that will be organized as a part of Task 8.5 - Third-Party FinTech and InsuranceTech Solutions. This task focuses on the implementation of additional FinTech and InsuranceTech solutions (third-party solutions) over the INFINITECH project's results, e.g. sandboxes/testbeds, developed under the hackathons, which will also contribute to the INFINITECH project's dissemination and exploitation activities in Work package (WP) 9. This is the first of two versions of the deliverable, which are preordained to provide the outcomes of task T8.5.

The Hackathon phenomenon has been highlighted to be an effective approach to encourage innovation with digital technologies in a large range of different spaces [1]. Therefore, utilized within the INFINITECH project is expected to act as liaison, in order to develop new ideas and third-party solutions regarding INFINITECH assets and services, to leverage internal and external stakeholders' skills, not only by affecting finance processes and provided services of the relevant stakeholders, but also by promoting broader transformation and opportunities leading to structural shifts to an open innovation approach that fosters business development.

In this regard, this deliverable aims to specify the required components for the development and deployment of the INFINITECH Hackathons events framework, as well as to highlight the necessity for their sustainability, in order to support the effective implementation of the INFINITECH OPEN INNOVATION ECOSYSTEM (see D.8.11. of WP8). In particular, this first version of the deliverable contains the following design and implementation attributes, indicating the toolkits that all INFINITECH partners can utilize for organizing such events:

- The purpose of the INFINITECH Hackathons aligned to the goals of the project
- The principals of the INFINITECH Hackathons compliant with the INFINITECH ECOSYSTEM principles, as well as the specified organization categories.
- The required design attributes of the INFINITECH Hackathons employment, including their Structure Description, their target-audience, as well as their roles, the Participation Terms and conditions, the Evaluation Criteria and Process, a suggested Third-party solutions List, the terms for the Ownership of the INFINITECH Hackathons Deliverables, the terms for the participants' Data Protection and Copyright, the terms for ETHICS, the conditions for the INFINITECH Hackathons AWARDS, as well as the suggested procedure for receiving FEEDBACK from all participants.
- The template regarding the INFINITECH HACKATHONS Participants' toolkit, providing all necessary directions
- The template regarding the INFINITECH HACKATHONS Mentoring toolkit, providing all necessary directions
- The template regarding the INFINITECH HACKATHONS Evaluation Committee toolkit, providing all necessary directions
- And finally, the expected outcomes that derive from INFINITECH Hackathons, fostering sustainability.

Under these, all INFINITECH partners are required to feature similarities when organizing such events, yet they will be deployed under different subjects , based on different APIs, sandboxes or other technologies, attracting in that way more third party solutions and finally ensuring their proper validation, so as to be possibly integrated in the INFINITECH Multi-sided Market Platform solutions catalogue, accordingly to Task 8.5's aims.

The work and progress related to task T8.5 will continue until Month 39, when the last version of the deliverable will be submitted, including INFINITECH HACKATHONS results that will be deployed in order to fulfil the INFINITECH project goals and sustainability.

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Abbreviations

Abbreviation	Definition
AI	Artificial Intelligence
IoT	Internet of Things
ML	Machine Learning
BD	Big Data
VDI	Virtualized Digital Innovation HUB
SME	Small & Medium Enterprises
BFM	GENERAL DATA PROTECTION RULE
HTAP	Hybrid Transactional Analytical Processing
WP	Work Package

1 Introduction

Under the reciprocal relationship of finance and technology, the growing demand for new financial services, locally and internationally, is growing. The INFINITECH project, following this technology and business-driven innovation approach, plays a significant role in the digital transformation of financial industry, acting as an important liaison of a broader technological, finance and business services ecosystem. The INFINITECH project promotes the development of a complex network of interacting FinTech firms, financial institutions, Small & Medium Enterprises (SME) academic and researchers, regulators and policy makers, aiming at advancing the financial services industry through technological innovation. Developing the building of the INFINITECH ECOSYSTEM FRAMEWORK (see in details Deliverable D.8.11. Ecosystem Support Services and Third Party Solutions – I of WP8), the INFINITECH project provides the necessary procedures and opportunities for the articulated cooperation among INFINITECH services and finance service providers, to adequately address customer needs and the growing demands on leveraged products and services.

Towards this, under the Step 3 "Define INFINITECH ECOSYSTEM TOOLS" of the INFINITECH ECOSYSTEM FRAMEWORK, referring to the INFINITECH Ecosystem tools determination, the tool, entitled INFINITECH Hackathons, is of great importance, in order to promote interactions with stakeholders within and outside the consortium members. In this respect, the INFINITECH Hackathon tool supports the goals of Task 8.5. Third-Party FinTech and InsuranceTech Solutions, aiming to support the employment of additional FinTech and InsuranceTech solutions over the project's results (e.g. sandboxes/testbeds), notably solutions by third-party innovators. Such solutions can be developed as part of the INFINITECH hackathons, while their possible inclusion in the solutions catalogue of the INFINITECH multi-side Market Platform will be examined. Furthermore, INFINITECH Hackathons may act as part of the INFINITECH project's dissemination and exploitation activities in WP9, meeting the opportunity to effectively exploit the project's results, as well to deploy and enlarge the INFINITECH OPEN Innovation Ecosystem.

1.1 Objective of the Deliverable

The main objective of this deliverable is to describe the relevant procedures for the development and the deployment of the INFINITECH Hackathons under the INFINITECH ECOSYSTEM (D8.11), supporting the goals of Task 8.5 and therefore to include and implement additional third party FinTech and InsuranceTech solutions over the INFINITECH project's technical artifacts, promoting thus the non- technical one as well and acting as a branding tool for the project results' dissemination and diffusion. In more detail, the deliverable will include:

- General overview of the INFINITECH Hackathon design and implementation aspects, in order for all INFINITECH partners to be supported in case they organize such events.
- Provision of Templates and Description of the INFINITECH Hackathon Toolkits; in particular the INFINITECH Hackathon Structure Template, the INFINITECH Hackathon Participants Toolkit, the INFINITECH Hackathon Mentoring Toolkit and the INFINITECH Hackathon Evaluation Committee Toolkit, providing all the required terms and conditions for participating in these events, accordingly to the assigned role of each participant.
- A list of possible Third-party solutions that can be suggested within INFINITECH Hackathons, respectively to their subject.

- The expected out comes of the INFINITECH Hackathons deployment.

- Conclusions and suggestions that can be followed by the INFINITECH partners for INFINITECH Hackathons results to be achieved on the optimal basis, leveraging in accordance with the project's results.

The next version of this deliverable will focus more in the third party FinTech and InsuranceTech solutions that will be suggested within the INFINITECH Hackathons, which will be organized during the project, providing the respective validation for their potential addition in the solutions catalogue of the INFINITECH Multi-sided Market Platform.

1.2 Insights from other Tasks and Deliverables

The deliverable D8.9 is the first one that is released in the context of task T8.5, presenting the analysis for the INFINITECH Hackathon development and implementation. Its structure follows the framework and the principles deriving from the INFINITECH ECOSYSTEM, as it is described in D8.11- Ecosystem Support Services and Third Party Solutions – I of WP8. Furthermore, other deliverables of WP8, provided valuable information for the elaboration of D8.9. In more detail, Task T8.2 including the deliverables D8.3 BigData (BD) and Artificial Intelligence (AI) Solutions Marketplace – I, D8.4 BigData and AI Solutions Marketplace – II, Task T8.3, including D8.5 Internet of Things (IoT) and Blockchain Solutions Marketplace – I and D8.6 IoT and Blockchain Solutions Marketplace – II, Task 8.4 including deliverables D8.7 Virtualized Digital Innovation Hub (VDIH) – I and D8.8 Virtualized Digital Innovation Hub – II have driven the suggestions for the Third-Party solutions possible inclusion in the solutions catalogue of the INFINITECH Multi-side Market Platform.

1.3 Structure of the Document

This deliverable is composed of three main sections:

- Chapter 1 is the introduction to the deliverable and includes the description of the objective, insights from other tasks and deliverables and the structure.
- Chapter 2 indicates the INFINITECH Hackathons Framework for design and implementation, including several aspects such as their purpose, their principles and their categories, their design attributes and the respective toolkits for their implementation, including a list of suggested Third Party solutions. Chapter 2 is completed by highlighting INFINITECH Hackathons benefits and sustainability.
- Chapter 3 reports the conclusions of the document.

The last section presents the previous research references in which the development of the INFINITECH Hackathons Framework was built.

2 INFINITECH Third-Party FinTech and InsuranceTech Solutions – I: INFINITECH HACKATHONS DEVELOPMENT

2.1 INFINITECH Hackathons purpose

A hackathon has been defined as a problem-oriented computer programming event and contest, focusing on cooperative software development in order to ground, program and provide cases of prototype digital innovation, through an intensive procedure over a short period time [1,2]. Hackathons are challenge-oriented and encourage professionals with different backgrounds, such as programmers, developers, interface and graphic designers, to collaborate for developing an innovative technology under a creative and experimental context, so as to address different needs of companies, users and clients [1-4].

The hackathon notion has gained attention and been used by various organizations in different sectors, including software companies and government agencies, using their assets and resources and aiming at promoting digital innovation and new technologies for tackling specific issues and real-life problems, such as civic, health and environmental ones, [1,5,6], while diffusing knowledge and growing communities [7,8].

Firms and corporations worldwide recognize Hackathon's value, since it is a tool, which provides access to the development of collaborative innovation, without spending a lot of financial and human resources, thus attracting easy funding. Furthermore, hackathons are positive energy-oriented events, promoting synergies among different stakeholders. Under this light, they do not always end up with complete solutions to the theme, thus focusing on increasing participation and engagement of other stakeholders with the responsible organization, so as for the latter to enhance new ideas [9]. Furthermore, hackathons constitute a branding tool, leveraging awareness for the respective product/service, as well as developing competences and creativity [4].

In particular in the financial sector, hackathons have acquired wide acceptance, organized under the vision to constitute the ground for faster and cheaper innovation in order to create new products and services [10]. In this respect, the INFINITECH project aims to utilize INFINITECH Hackathons for the recruitment of external stakeholders and third party FinTech and InsuranceTech solutions, as sources of ideas and events that are established in the cooperation among the differentiated internal and external stakeholders of the project, for further capitalizing its results. Furthermore, compliant with previous research [11], INFINITECH Hackathons will support many aspects of the innovation process, including not only ideation and creativity, but also feasibility and marketability, promoting the INFINITECH Multi-sided Market Platform. In general, INFINITECH Hackathons are considered to impact significantly the developing of the culture of the INFINITECH Open Innovation Ecosystem, so as to be inflowed by the consortium partners and outflowed by the third-party solution providers and innovators, and to provide added value to the INFINTECH project results under a business-driven approach.

2.2 INFINITECH Hackathon Principles and Categories

In the Finance and Insurance sector, either small-medium size enterprises or large firms and companies have adopted hackathons in order to accelerate innovation in their services and products [12-14]. Previous research [1] identifies two (2) large categories of Hackathon, namely the: a) Tech-centric, divided in three (3) subcategories, the Single-Application, the Application-Type and the Technology-Specific and b) Focus-centric, including Socially-Oriented, Demographic-Specific and Company-Internal subcategories. Tech-centric Hackathons are organized for developing software, using a specific technology or a specific application, while Focus-centric ones aim to develop software development to meet the needs or contribute either to a social issue or to a business subject, considered thus as applied.

In this respect, taking into account that INFINITECH Hackathons aim to support the implementation of the INFINITECH Open Innovation Ecosystem emphasizing on financial and insurance services, they are considered to be organized as Focus-centric ones, driving the financial and insurance services providers to innovate in order to increase their users' and customers' attractiveness and acquisition.

Despite the fact of the hackathons' different categories and subcategories, it is widely accepted that their organization and implementation is driven by common principles, identified in previous research [15] and therefore they are adopted within INFINITECH Hackathons as well. These namely concern: Sharing, Inclusion, Encouragement, Flexibility, Extroversion, as presented in the following Fig.1. Sharing, based on open collaboration, is referred to INFINITECH participants' ways of interaction, in order to achieve productivity, speed in execution and knowledge leveraging. Inclusion concerns the wide range of INFINITECH internal and external participants that they contribute to Hackathon implementation with different roles. Flexibility refers to the INFINITECH Hackathons organizers' capability to provide a flexible and convenient physical or virtual environment in order for participants to leverage productivity and innovation. Encouragement refers to the necessity for the INFINITECH participant teams to be encouraged and not restricted, as well as to be stimulated to report not only their successes, but also their failures, since they are also valuable for preventing other teams from making the same mistakes. Finally, Extroversion concerns the necessity for the INFINITECH Hackathons to be outreached oriented events, so as to promote the INFINITECH Ecosystem establishment.
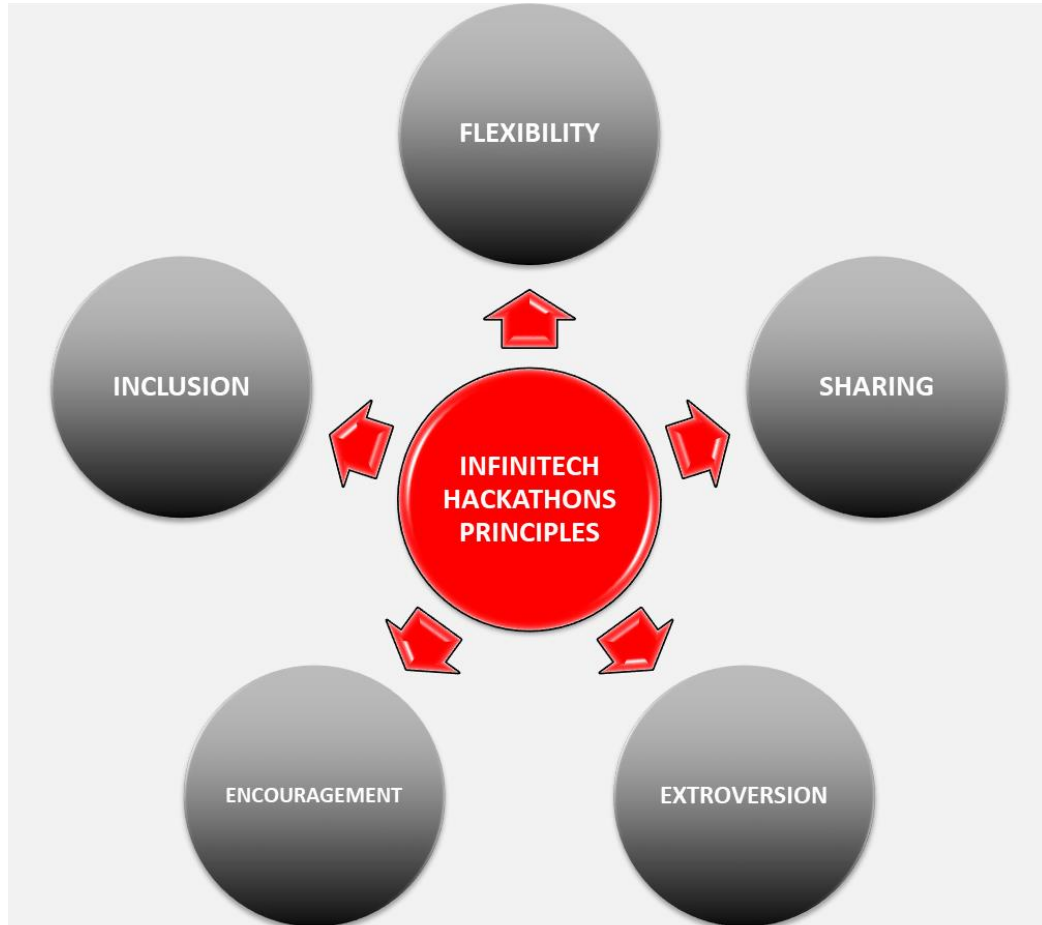
Figure 1 – INFINITECH HACKATHONS PRINCIPLES

2.3 INFINITECH Hackathon Design Attributes

In this section, the INFINITECH Hackathon Design Attributes are defined, according to previous research [16-18] and following CROWDPOLICY Methodology [19], as an INFINITECH Consortium member with acknowledged expertise in the field. These are presented in the following Fig.2 and accordingly discussed.
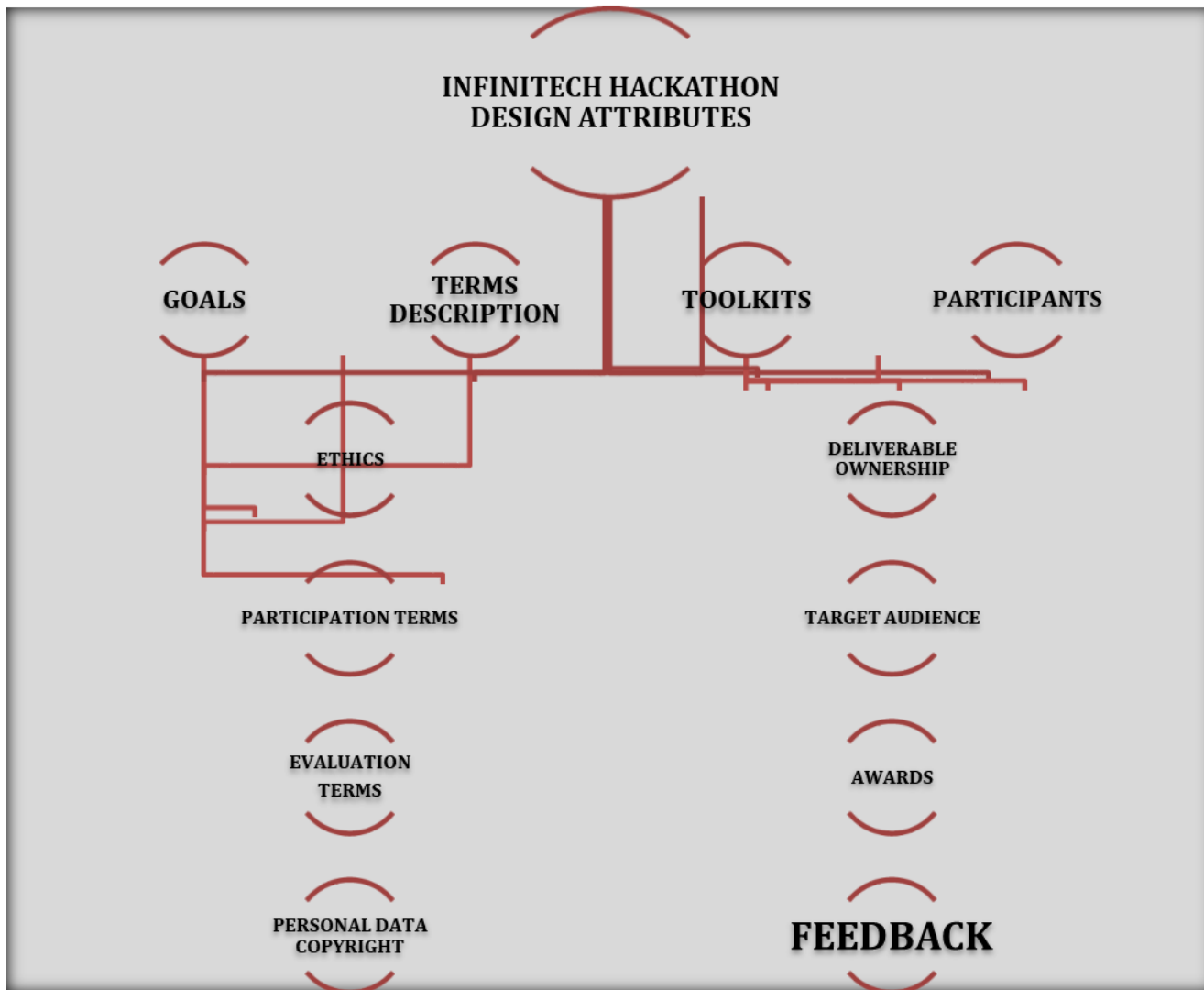
Figure 2 – INFINITECH Hackathons Design Attributes

INFINITECH Hackathons are time-bounded and subject-oriented events, promoting the products and the assets provided in the INFINITECH Multi-sided Market Platform, in which participants are differentiated due to their interests, expertise and goals. Thus, common design attributes are defined in order for INFINITECH Hackathons to be aligned with the aims and the results of the project under a common ground.

2.3.1 INFINITECH Hackathons Structure Description

In this respect, at first, each partner of the INFINITECH consortium has to complete the following template for INFINITECH Hackathons Structure Description, presented in Table 1.

INFINITECH Hackathons Structure Description Template	
INFINITECH Hackathon Title	Title
INFINITECH Hackathon Goals Description	Short description
INFINITECH Hackathon Target audience	Which are the target-groups to be recruited?
INFINITECH Hackathon – Coverage of specifications	What are the sets or parts of the proposed specifications covered by the implementation?
INFINITECH Hackathon Data	Which data (datasets) are needed to implement the proposal? Which data will ultimately be used?
INFINITECH Hackathon Apis	Which APIs are needed to implement the proposal? - Which APIs will ultimately be used?
INFINITECH Hackathon Links	Datasets / apis links
INFINITECH Hackathon Prerequisites	What are the prerequisites in order to productively use or extend the use of the application of the prototype?
Technology	What technology is the implementation of the prototype based on? Which opensource software packages does it utilize?
INFINITECH Hackathon expected deliverables business value	Short description

Table 1 - INFINITECH Hackathons Structure Description

2.3.2 INFINITECH Hackathons participants

The categories of INFINITECH Hackathons participants are reflected in Figure 3, while their roles are analyzed as follows in Table 2.
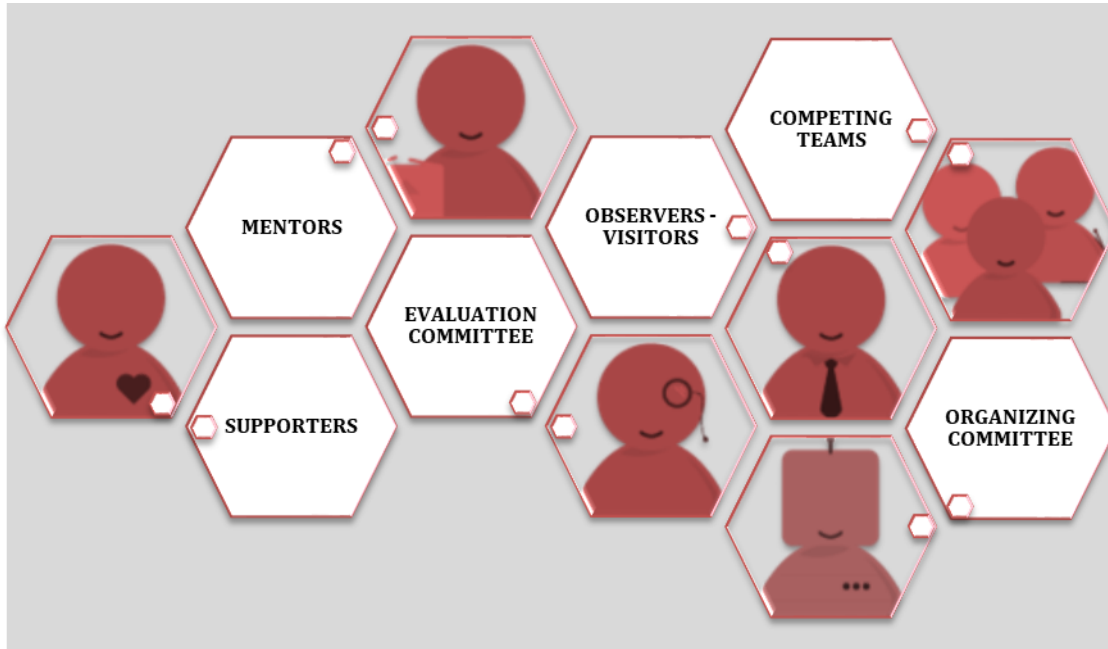
Figure 3 – INFINITECH Hackathons participants categories

INFINITECH HACKATHONS PARTICIPANTS ROLES
INFINITECH Hackathons Organizer (Organizing Committee - Organizing Team) •   The organizing committee consists of executives from the INFINITECH Consortium partners and organizers as well as other organizations that sponsor or support the event. •   The organizing committee is responsible for the smooth running of the INFINITECH hackathon. •   It coordinates the actions concerning awareness and participation of all parties involved. •   It forms the rest of the committees and announces the call for participants.
INFINITECH Hackathons Participant Competing teams • The teams consist of one (1) to six (6) people. It would be helpful for the members to have combined knowledge of interface design, design and development of web applications and applications for mobile devices as well as knowledge on the hackathon theme (e.g. analysis of business applications and systems, finance, insurance). • The established teams should register before the start of the hackathon. • The teams participate by implementing e.g. applications, functional prototypes, designs that are relevant to the INFINITECH hackathon goals and themes in the form of minimal viable product. • The teams must be presented at the venue (physical or virtual) where the INFINITECH hackathon will be held.
INFINITECH Hackathons Observers – Visitors • It concerns anyone who wishes to watch the INFINITECH hackathon. • They participate ONLY at the beginning of the hackathon when introductory presentations take place and at the end of the hackathon (award ceremony and party). They can also participate in side events, if there are any. • They do not participate in the competition process. • They can apply to participate as team mentors.
INFINITECH Hackathons Mentors • They are individuals with professional or/and academic experience in a field related to the hackathon. • They guide and advise the participants. • They do not participate in the competition process. • They must be present at the venue of the hackathon, otherwise the organizers reserve the right to cancel their participation.

INFINITECH Hackathons Evaluation Committee

- **It consists of individuals with professional or/and academic experience in a field related to the hackathon.**

- **They are chosen by the organizers.**

- **The mentors of the competing teams cannot be members of the evaluation committee.**

- **If necessary, they specify the evaluation criteria listed below.**

- **They evaluate each implementation using a dedicated electronic form (application - information system).**

- **They do not participate in the competition process.**

INFINITECH Hackathons Supporters

- **They are legal persons of the public or private sector that can support the principles and goals of the INFINITECH hackathon. Their size and activity are related to the implementation of actions, interventions, initiatives and projects addressed to a large part of society, economic, social and business life.**

- **They propose mentors or committee members if they are asked to do so by the organizing committee.**

Table 2 - INFINITECH Hackathons Participants Roles

2.3.3 INFINITECH Hackathons Participation Terms

Focusing on the INFINITECH Hackathons Participant Competing teams, in Table 3 the terms and conditions of their participation are described.

INFINITECH HACKATHONS PARTICIPATION TERMS AND CONDITIONS
1. Only natural persons who are at least 18 years of age (on the start date of the competition), irrespective of their nationality or place of residence, are allowed to participate in the hackathon. Natural persons under 18 years of age are allowed to participate provided that they have the written consent of a parent/legal guardian (e.g. in the case of students).
2. The participants should read these terms carefully before registering and submitting their proposal.
3. Participation in the hackathon implies the unconditional acceptance of all the terms by the participants.
4. Registering and information about the INFINITECH hackathon will be available exclusively through INFINITECH multi-side Market Platform

5. The submission of proposals before and during the hackathon process is conducted exclusively in English, using international terminology.

6. The participants have the sole and exclusive responsibility of safeguarding or otherwise protecting their submitted proposals and the rights deriving therefrom. The entire code, the mockups, designs and everything else produced during the hackathon will be available on INFINITECH multi-side Market Platform website or / and code repository under the license (CC BY-SA 4.0) http://creativecommons.org/licenses/by-sa/4.0/deed.el

7. Those interested can participate either individually or in teams of up to six (6) members. At registration, the Head of the team should be declared, who will be the contact person, as well as the other members of the team. In order to declare the personal data of the team members, the Head of the team guarantees that he/she has obtained a written authorization by each of them for the purpose of the competition, which he/she shall make available to the organizers whenever it is requested.

8. The organizers can, at any stage of the hackathon, request any supporting documents they deem necessary in order to cross-check or certify the information (ID, passport, etc.) of the participants according to the present terms.

9. In the event of submission of false information, the Organizers are not held liable and they have the right to cancel the participation at any stage of the competition.

10. Any document or other material - part of the proposal that will be submitted for the purpose of the competition will not be returned.

11. Any preparation costs will be undertaken solely by the Participants

12. The participants must bring their own equipment such as a laptop, multipurpose plugs etc. in order to develop their application. No equipment for the development of applications is provided during the competition.

13. Individuals that fall into one of the following categories will be able to take part only in the presentations and side events and not in the competing part of the hackathon, ie their teams will not be eligible for the awards of the event: Employees or partners of the organizers, First and second-degree relatives and spouses of the employees or partners of the organizer, Individuals that lack legal capacity.

14. Participation with an implementation or content that violates the current legislation and the rights of third parties (including, but not limited to, the provisions on intellectual property, violation of personality rights, research with vulgar, offensive, defamatory and generally illegal content, research that violates personal data, research that violates any kind of privacy etc.) is not allowed.

15. Participation of any participant who violates in any way any of these terms or contradicts any provision of the European law is not allowed.

16. The organizers will not be responsible for any technical reason making it temporarily impossible to receive and register a participation or submit a participation in the system.
17. The organizers reserve the right to unilaterally and unjustifiably modify the terms of the competition if necessary without any prior notice to the participants

Table 3 - INFINITECH Hackathons Participation Terms and Conditions

2.3.4 INFINITECH Hackathons Evaluation Criteria and Process

Regarding the evaluation process and criteria, these include, but they are not limited to the following:

a) The compatibility with the INFINITECH hackathon goals, as well as the completeness and percentage of coverage of the proposed specifications, b) the creation of value for the value chain it is intended for, c) the complementarity with deliverables of other participants, the interconnectivity with social media platforms as well as open Public / Private APIs of the INFINITECH project, d) the innovation of the implementation approach, e) the technological integrity, including the degree of data visualization produced or utilized through automatic mechanisms and the interdisciplinary features on which the proposed implementation has been based on, f) the feasibility of the implementation of the prototype so that it can be productively applied to the hackathon scope or be easily utilized by third parties, g) the possibility for commercial exploitation and h) the impact, in the case of an application related to charitable actions and initiatives. In this respect, the main categories of the evaluation criteria are presented in the following Figure 4.
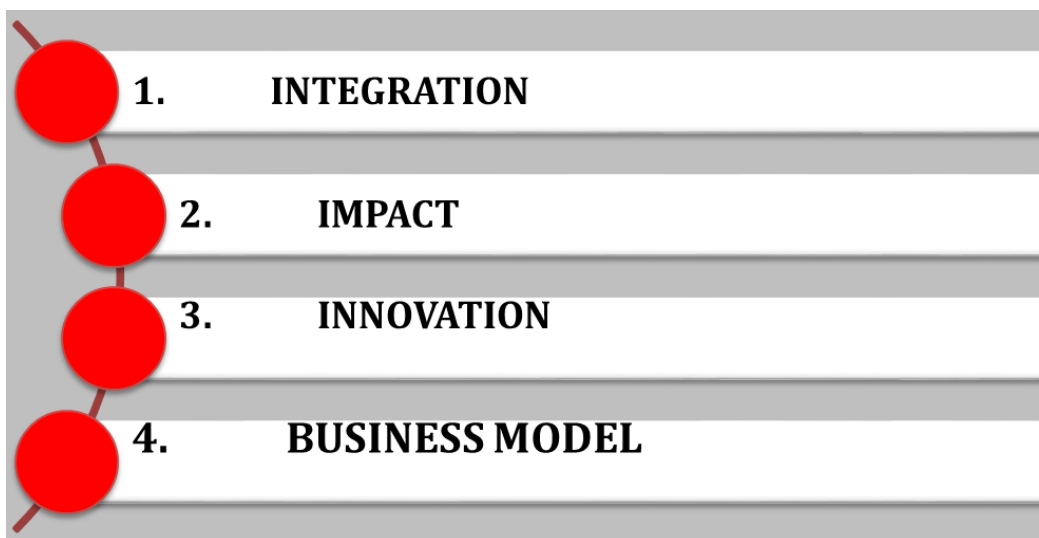

Figure 4 – INFINITECH Hackathons Evaluation Criteria

2.3.5 INFINITECH Hackathons Third-party solutions List

Furthermore, the results and documentation are announced electronically or not. Participants do not have the right to object to the selection of the evaluation committee and the final specification of the criteria at any time. Thus, participants are encouraged to use third-party services, APIs and applications, libraries and open source platforms. Indicatively some of the suggested third-party solutions are provided in the following Table 4. A more analytical list will be provided in the second version of the Deliverable D8.10-Third-Party FinTech and InsuranceTech Solutions – II, when the INFINITECH Hackathons will be realized.

Name	Company/Organization	Link to website	Country	Sector	Beneficiaries
Fintech SKD	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Open Banking / Fintech	Start-ups, SMEs, Scale-ups, Spin-offs
Open Banking Sandbox	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Open Banking / Fintech	Developers who wish to develop their own applications by using Bank's infrastructures and technologies
Fintech Mobile Framework (KYC, e-ID)	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Open Banking / Fintech	Startups that wish to enhance their digital products and create added value
Fintech Chatbot	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Open Banking / Fintech	Businesses that wish to cooperate with a Bank in order to create new electronic services
Payment Gateway	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Open Banking / Fintech	
Billing – Invoice System (SaaS)	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Payments / Fintech	
Finance Platform	Greek Fintech Cluster	http://www.fintech.net.gr/	Greece	Equity crowdfunding / Fintech	
GoCardless	GoCardless	https://gocardless.com/	United Kingdom	Payments / Fintech	SMEs, enterprises
ARX Data Anonymization Tool		https://arx.deidentifier.org/	Germany	Data Anonymization Tool	commercial big data analytics platforms, research projects, clinical trial data sharing and for training purposes.
Amnesia	Athena Research Center. Developed in the context of OpenAIRE European Union's Horizon 2020 Research and Innovation programme	https://amnesia.openaire.eu/	Greece	Data Anonymization Tool	Research, health institutes, etc.
Mu-argus	Statistics Netherlands	https://joinup.ec.europa.eu/collection/statistics/solution/sdctools-tools-statistical-disclosure-control/news/mu-argus-version-513	The Netherlands	Data Anonymization Tool	Research, enterprise microdata. Statistical Institutes, national banks and other public bodies.
Anonimatron	realrolfje	https://realrolfje.github.io/anonimatron/		Data Anonymization Tool	
sdcMicro		https://cran.r-project.org/package=sdcMicro		Data Anonymization Tool	sdcMicro
Aircloak Insights	Aircloak GmbH	https://aircloak.com/	Germany	FINTECH/Financial and insurance services	Applicable for use cases across all verticals that involve data monetization, data sharing, partnering, customer intelligence or open data initiatives and platforms. Including: Banking, Healthcare, Telecommunications

Revolut	Revolut Ltd	https://www.revolut.com/	England	Digital banking	Individuals, SMEs, Scale-ups, Spin-offs, Corporates
LendingTree	LendingTree, LLC	https://www.lendingtree.com/	U.S.A.	FinTech lending	Individuals, students, SmEs
PayPal Payments Pro	PayPal Holdings, Inc.	https://www.paypal.com/us/webapps/mpp/paypal-payments-pro	USA	Mobile Payment System	online merchants and businesses
Lightspeed	Lightspeed	https://www.lightspeedhq.com/	Canada	Mobile Payment System	Retail, restaurant, golf businesses
Qgiv	Qgiv, Inc.	https://www.qgiv.com/	USA	Donor Management Software	Organization, Nonprofits, Faith-based, Education, Healthcare, Political, National Organizations
Blockchain Wallet	Blockchain.com, Inc.	https://www.blockchain.com/wallet	Luxembourg	Blockchain and Cryptocurrency /Mobile Payment Systems	Small Business, Large Enterprises, Medium Business, Freelancers
INSURTECH UK	INSURTECH UK	https://insurtechuk.org/	UK	insurtech businesses, traditional insurance and industries	insurtech startups, insurance industry
TACT (Tax & Compliance Tools)	Impendulo	https://www.impendulo.com/	UK	Insurtech Premium Tax compliance services	Insurance industry
Cosmote Insurance	Cosmote	https://www.cosmote.gr/insurance/	GREECE		

Table 4 - INFINITECH HACKATHONS THIRD-PARTY SOLUTIONS LIST

2.3.6 INFINITECH Hackathons Ownership of the Deliverables

The specific terms are described in the following Table 5.

INFINITECH HACKATHONS Ownership of the Deliverables
• **All teams or individuals shall retain the ownership of what they are to create during the INFINITECH hackathon. Furthermore, they are solely responsible for NOT violating any kind of third-party intellectual property rights (modification, use, reproduction, etc.).**
• **All the deliverables and individual components such as code, mockups and designs to be produced during the hackathon will be available on the INFINITECH multi-side Market Platform website under the license (CC BY-SA 4.0) http://creativecommons.org/licenses/by-sa/4.0/deed.el**

Table 5 - INFINITECH HACKATHONS Deliverables Ownership

2.3.7 INFINITECH Hackathons Data Protection and Copyright

Focusing on the INFINITECH Hackathons Personal Data and Copyright protection, in Table 6 the specific terms are described.

INFINITECH HACKATHONS PERSONAL DATA AND COPYRIGHT
1. The management and protection of the personal data of participants of the INFINITECH hackathon by the organizers are subject to these terms and the relevant provisions of the existing regulatory and legislative framework for the protection of individuals from the processing of personal data and confidentiality of communications. Participation in the hackathon implies the explicit and unconditional consent of the participants for the registration of their personal data, the summary / descriptive paragraph - material to be published as well as a brief Curriculum Vitae of the finalists in a file which will be kept in accordance with GENERAL DATA PROTECTION RULE (GDPR).
2. All participants declare that they agree to be recorded and / or photographed and / or filmed and / or incorporated into an organization material themselves and their proposals in any way by the organizer during all stages of the hackathon even after its completion and grant the organizer the right, free of any payment for copyright or other rights, to use, process, transmit, broadcast it through the website or any other website owned by the Organizers and / or any other means including mass-media networking and third-party websites.
3. Participants waive any right to remuneration and / or exchange for any of the aforementioned uses.
4. The Head of the Team declares and guarantees that he/she has received written authorization from each of the team members to provide the organizers with their explicit consent regarding the registration, processing and publication of their data for the purpose of the hackathon as determined above, which he will make available to the Organizers whenever it is requested. Participants waive any right to remuneration and / or exchange for any of the aforementioned uses.
5. The organizers declare that they cannot check the entries in the competition for compliance with the provisions on intellectual property and, therefore, relies solely on the participants' statement of compliance with the provisions on the protection of intellectual property.
6. In the event of violation of any of the terms of the competition and the current legislation, and in the event of violation of third-party rights whenever this is known, the organizers may either exclude the participant from the next stages of the competition (if it is discovered before the award of the prize) or to withdraw the decision to nominate the particular participant as a winner and to request that they return the prize as well as restore any damage caused due to the violation of these terms either to a third person or to the organizers themselves.

Table 6 - INFINITECH Hackathons Personal Data and Copyright

2.3.8 INFINITECH Hackathons ETHICS

The INFINITECH Hackathons ETHICS terms are presented in the following Table 7.

INFINITECH HACKATHONS ETHICS
1. All categories of participants should behave professionally and be respectful and kind to each other. No-one has the right to insult or put down other participants. Harassment and racist behaviors, sexist or exclusionary behaviours are not appropriate for INFINITECH Hackathons.
2. All categories of participants should be open to diversity, welcoming participants of different levels of education, as well as of different technological and social backgrounds. INFINITECH Hackathons are about increasing the overall amount of innovation, partnership, and engagement in the INFINITECH community.
3. Attendees violating these rules may be asked to leave the INFINITECH Hackathon at the sole discretion of the Hackathon organizers.

Table 7 - INFINITECH Hackathons ETHICS

2.3.9 INFINITECH Hackathons AWARDS

With reference on the INFINITECH Hackathons AWARDS, in Table 8, the relevant approach is described.

INFINITECH HACKATHONS AWARDS
1. One winning team will be selected from each INFINITECH hackathon event according to the Evaluation Committee members' assessment.
2. The winners will be announced at the end of the INFINITECH Hackathon event that will take place on specified time.
3. Awards can be differentiated according to the organizing member of INFINITECH consortium resources, indicatively including free Fintech courses, free participation to relevant conferences, money prizes.

Table 8 - INFINITECH Hackathons Awards

2.3.10   INFINITECH Hackathons FEEDBACK

Emphasizing on the INFINITECH Hackathons participants Feedback, in Table 9 the specific approach is described.

INFINITECH HACKATHONS FEEDBACK				
A Feedback questionnaire will be addressed to INFINITECH Hackathon participants at the end of each event according to their role. **This indicatively includes questions concerning:**				
Competing Teams	**Organizers**	**Mentors**	**Evaluation Committee**	**Supporters-Observers**
• **Which was your motivation?** • **What were your expectations?** • **Were your expectations met?** • **What went well?** • **What can be improved?** • **What did you learn?** • **What was the biggest challenge for you** • **Would you participate again?** • **Would you pay if it weren't for free?**	• What were your expectations? • Were your expectations met? • What went well? • Where/what can be improved? • Were INFINITECH project goals met?	• Which was your motivation? • What were your expectations? • Were your expectations met? • What went well? • Where/what can be improved? • Would you participate again?	• What were your expectations? • Were your expectations met? • What was the biggest challenge for you • Would you participate again?	• Did you attend the INFINITECH hackathon? • What went well? • What can be improved? • Would you be further engaged in INFINITECH project community?

Table 9 - INFINITECH Hackathons Feedback

2.4 INFINITECH HACKATHONS Participants' toolkit

Following the CrowdPolicy methodology [19] for Organizing a Hackathon, the respective Template, presented in Table 10, concerns the general guidelines INFINITECH Hackathon Participants should follow in order for the event to be effectively accomplished.

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Guidelines for INFINITECH HACKATHONS PARTICIPANT TEAMS Template: Specification Document

</div>

INFINITECH Hackathon Participant Teams- BEFORE the event

● The Participant teams should read the contents of the INFINITECH Hackathon website, paying emphasis on the TERMS & CONDITIONS section.

● The Participant teams should visit the event page on social media, since a lot of news/articles/announcements will be posted leading up to the event.

● The Participant teams should do as much research on fintech as they can in order to understand what it is, how it originated and what it addresses, using the useful resources provided in the INFINITECH Hackathon specific guidelines for the event.

● The Participant teams should familiarize themselves as much as possible with the INFINITECH Hackathon problem and its respective provided technologies

● The Participant teams should seek out various solution, such as open data and APIs, which could be potentially used for enriching the functionality of the deliverable solution.

● The Participant teams should prepare their work and their ideas, considering available frameworks, libraries, thus without developing code before the INFINITECH Hackathon event.

INFINITECH Hackathon Participant Teams- DURING the event

- The Participant teams should bring their laptop, all related charging cables, multipurpose plugs and to work with any tools that make them comfortable so as to bring out their creativity.

- The Participant teams should still visit the event website and page on social media, since useful information continually will be uploaded.

- The Participant teams should consider that any solution they develop could be mobile and/or web based.

- The Participant teams should consider that their deliverables could tackle a number of fintech challenges respective to the INFINITECH Hackathon goals.

- The Participant teams are encouraged to deliver out of the box and to innovate by combining various technological aspects (e.g. big data, sensor data from smart devices, APIs).

- The Participant teams should consider that their deliverables should be based on a viable commercial business model with revenue potential. In cases of a social oriented deliverable, its commercial viability should be substantiated in another way.

- The Participant teams should wear comfortable clothes, since the INFINITECH Hackathon event has a long duration.

INFINITECH Hackathon Participant Teams- After the event

- **The Winner Participant team will be awarded according to the provided award, announced in the INFINITECH Hackathon website.**

- **The Participant teams which won't win are welcomed to participate in a Future INFINITECH Hackathon, improving their ideas and solutions.**

- **All Participants Teams' deliverables can be openly available on INFINITECH multi-side Market Platform website.**

INFINITECH Hackathon Participant Teams supporting resources:

The Participant teams are supported by several provided resources, such as Fintech domains and challenges, Articles and respective references, available tools and frameworks, targeted public available data and third- party solutions. The third-party solutions are provided in a separate table (see Table 4).

A. Fintech domains and challenges	B. Available Frameworks, Tools and Public Data	C. Articles and useful references
Participants Teams deliverables could tackle a combination of the indicative Fintech domains, as well as a combination of the indicative economic and societal Fintech challenges, which are compliant with the INFINITECH project's goals and results. The domain and challenges are indicative and merely listed, in order to be used for guidance, avoiding to restrict Participants Teams' ideas and creativity. - **Fintech challenges concern a wide range of areas, that are needed a better utilization of emerging technologies and business process re-engineering, such as digital payments and banking, Transaction security, E-invoicing, personalized services, alternative Lending**	Participants Teams are encouraged to provide solutions that may be developed around INFINITECH project resources, using therefore available Frameworks, Tools, and Public data, such as: PHP, HTML5, Mobile SDKs, Unity, WordPress, Blockchain, API Management tools, Rapid Prototyping Tools, Artificial Intelligence and Chatbots, Maps & Locations Services, Governmental Open data portals.	During the INFINITECH Hackathon event, time is a crucial aspect for all Participant Teams. In order for the Teams to be further supported and save time, several references according to the INFINITECH Hackathon subject are provided, concerning indicatively: Fintech and business models, Alternative Finance and Insurance, Payment Systems/Money Transfer, Challenger Banks.

platforms for businesses and individuals • Fintech domains include for instance Blockchain, Chatbots, E-wallets, Mobile Banking and the use of financial and insurance APIs that lead to innovative new ideas in areas such as Finance and Insurance Process Innovation, Fintech apps with business applicability, Social style Fintech apps for Social Innovation		
INFINITECH Hackathon Useful links ● **INFINITECH Hackathon website link** ● **INFINITECH Hackathon social media links** ● **INFINITECH Hackathon Terms of participation link**		

Table 10 - INFINITECH Hackathons Participants' toolkit

2.5 INFINITECH HACKATHONS Mentoring toolkit

The following Template, presented in Table 11, concerns the general guidelines INFINITECH Hackathon Mentors should follow in order for the event to be effectively accomplished.

Guidelines for INFINITECH HACKATHONS MENTORS Template
INFINITECH Hackathon Mentors role   ● The Mentors support the participants for creating the main idea that will lead to the implementation.   ● The Mentors come from the INFINITECH project community.   ● The Mentors work along with all participating teams.   ● The Mentors contribute as much as possible in order to support the teams.   ● The Mentors will participate in an additional fixed mentoring session.
INFINITECH Hackathon Preparation

• **INFINITECH Hackathon mentors should keep up to date with their role, the specifications and the content of the Hackathon.** • **A preparing meeting before INFINITECH Hackathon is organized to help mentors to be prepared.**		

INFINITECH Hackathon Team Support
The Mentors support the participants according to their profile on the following three levels:

A. Business	B. Product Development Process	C. Technology
● **They help the teams shape their idea, in case they need it.** ● **They help them identify the business value of their deliverable.** ● **They help them identify features of the deliverable that may have business value in the field of fintech and in relation to the deliverable's target group.** ● **They guide them in order to prepare a solid presentation of their deliverable (pitching) on business and technical level. The pitching takes place on the presentation day.**	●How should the features be prioritized in relation to the limited time that the teams will have? ●What is the relation / balance between the ready features of the prototype compared to the ones that can be found in the final version? – How are they linked?	●Technologies that can easily be adapted to the current process. ●Explanation of frameworks, APIS ●Other technical ideas

INFINITECH Hackathon Presentation of Implementation
● **The Mentors will help the teams prepare a solid presentation of their deliverables.**
● **The participant teams will have to use their laptops for the presentation.**
● **They will be able to practice their presentation on specified time.**
● **The presentations will be elaborated in short duration, including short introductory powerpoint / slides and live demo deliverable.**
● **The members of the evaluation committee will ask questions.**
● **The teams will present their deliverables to all participants and the evaluation committee on specified time.**
● **A draw will determine the order in which the teams will present their deliverables.**

INFINITECH Hackathon Useful links
● **INFINITECH Hackathon website link**
● **INFINITECH Hackathon social media links**
● **INFINITECH Hackathon Terms of participation link**

Table 11 - INFINITECH Hackathons Mentors' toolkit

2.6 INFINITECH HACKATHONS Evaluation Committee toolkit

The following Template, presented in Table 12, concerns the general guidelines INFINITECH Hackathon Evaluators should follow in order for the event to be effectively accomplished.

Guidelines for INFINITECH HACKATHONS EVALUATION COMMITTEE Members Template

INFINITECH Hackathon Introduction – Preparation

- **The INFINITECH Hackathon members of the Evaluation Committee should keep up to date with the specifications and the content of the Hackathon, visiting the respective INFINIECH Hackathon useful links**

- **A preparation meeting before INFINITECH Hackathon is organized to help the members of the Evaluation Committee to be prepared.**

- **Visiting INFINITECH Hackathon's program at the respective link**

- **The INFINITECH Hackathon members of the Evaluation Committee should send their CV to the Hackathon responsible partner of the INFINITECH consortium so that to be posted on the dedicated section of the INFINITECH Hackathon website**

INFINITECH Hackathon Attendance

- **The INFINITECH Hackathon members of the Evaluation Committee should be at the event at least one hour before the presentations begin.**

- **The INFINITECH Hackathon members of the Evaluation Committee should attend the preparation meeting on its specified time.**

- **The presentation of deliverables and the meeting of the evaluation committee will take place on specified time.**

- **The INFINITECH Hackathon members of the Evaluation Committee are welcomed to attend all the activities of the event.**

INFINITECH Hackathon Evaluation Criteria

The evaluating process fulfils the functional features of the INFINITECH Hackathon deliverables in terms of integration, business, impact, innovation.

A. Integration	B. Impact	C. Innovation	D. Business
• **To what extent has the deliverable been integrated or completed**	• What audience does it impact? What are the target groups? • Does it improve the processes or existing	• In what day does it solve the problem? Is it different from "ordinary" solutions and approaches?	• Could it be immediately applied? Who will provide the Service?

• **Integration with 3rd party systems (e.g. through APIs, open data / web services)** • **In what way does the deliverable use (e.g. OpenApis /open data / web services / 3rd party services?)**	services of the field of financial and insurancetech? • Can it lead to the creation of a start-up that will be able to provide users with such service?	• Does the product motivate one to use it? • Does the combination of different technology stacks result in technological innovation?	• Is there or can there be a revenue model? • Why would one buy it? Who would buy it? Would it be viable? • If the application is socially oriented, does it require the involvement of users?

INFINITECH Hackathon Evaluation Process

- **The INFINITECH Hackathon members of the Evaluation Committee will meet after the teams' presentations**

- **The INFINITECH Hackathon members of the Evaluation Committee will use a scoring form or / and an electronic scoring each deliverable, as presented below.**

- **The INFINITECH Hackathon members of the Evaluation Committee will announce the winners to the Hackathon responsible partner of the INFINITECH consortium.**

INFINITECH Hackathon Indicative Evaluation table with predefined scoring

TEAM	10	30	70	100
INTEGRATION			x	
IMPACT		x		
BUSINESS MODEL				x
INNOVATION			x	
SCORE (weighed) = xx* INTEGRATION + xx * IMPACT + xx * BUSINESS MODEL + xx*INNOVATION				

Table 12 - INFINITECH Hackathons Evaluation Committee toolkit

2.7 INFINITECH Hackathons Sustainability and Benefits

Previous research [16, 20] has already acknowledged that most of the works, focusing on Hackathons events, put special emphasis on the sustainability of the technical deliverables and not to the sustainability of ideation, of the interdisciplinary collaboration among the participants and their further engagement to the communities that could potentially build around them. Considering that, INFINITECH Hackathons, as a specified tool within the INFINITECH OPEN INNOVATION ECOSYSTEM FRAMEWORK, aim to promote sustainability at each level, integrating input from both INFIITECH consortium partners and from third-party solution providers and innovators. To that end, INFINITECH hackathons are designed under a well- formed project framework, so as to provide continuation and collaboration after the events within the finance and insurance context. This well -established procedures for their design and implementation is expected to provide the following benefits, leveraging in general INFINITECH project results.

INFINITECH HACKATHON BENEFITS

- -IDEATION
- -DEVELOPMENT

- -TECHNICAL ARTIFACTS
- -NON TECHNICAL ARTIFACTS

- -LEARNING
- -SHARING

- -COLLABORATION
- -NETWORKING

- -FEASIBILITY
- -QUALITY

- -INSPIRATION
- -BRANDING

- -ENTREPRENEURSHIP
- -FOSTER INVESTMENTS

- -BUSINESS LOWER COSTS
- -CUSTOMERS SATISFACTION

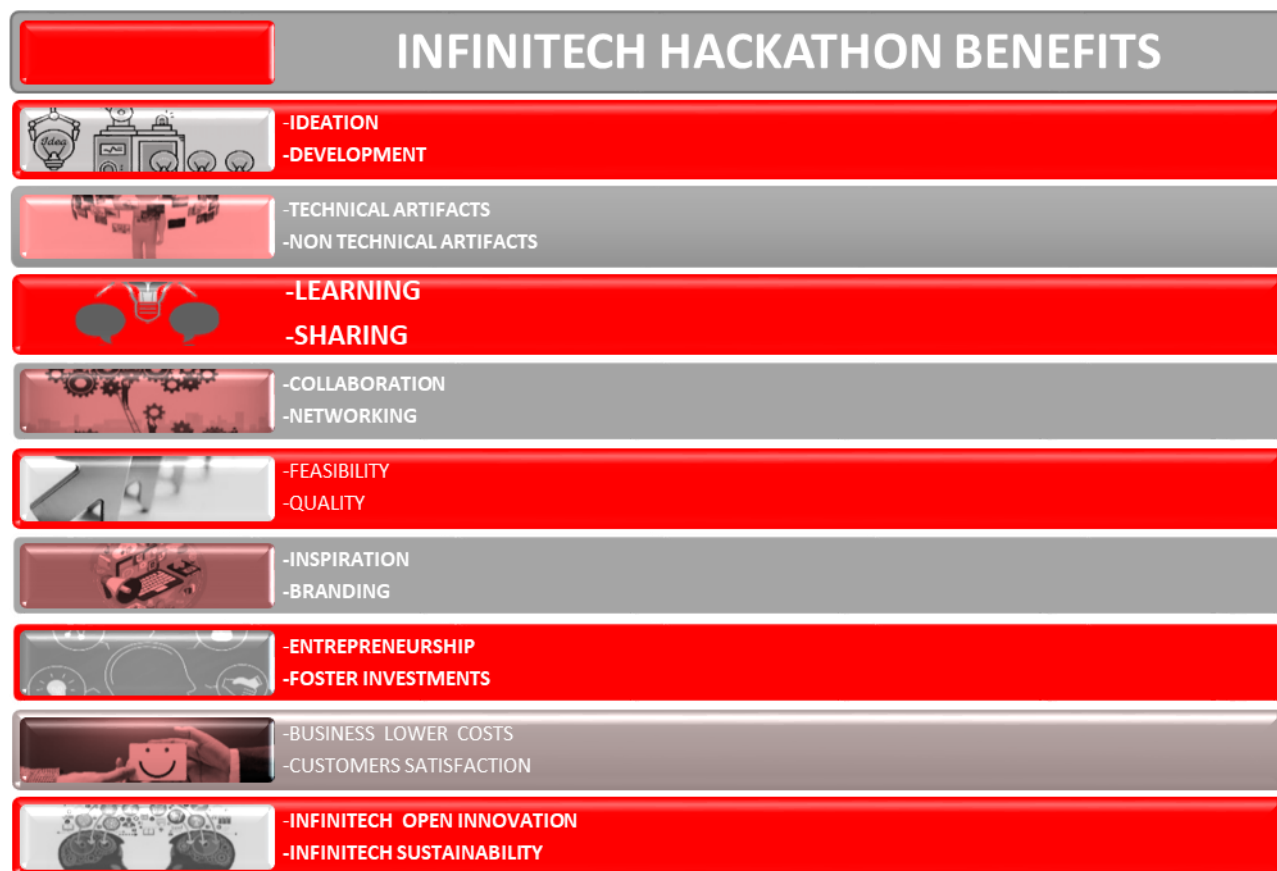- -INFINITECH OPEN INNOVATION
- -INFINITECH SUSTAINABILITY

Figure 5 – INFINITECH Hackathons Benefits

3 Conclusions

Based on Task 8.5 intentions to include and implement additional FinTech and InsuranceTech solutions by third-parties over the project's sandboxes/testbeds, through its potential organized hackathons, the specific deliverable contains an outline of the main components that each INFINITECH Hackathon should include in order to be effectively realized**.**

Considering that in the majority of results from the INFINITECH project address financial services' needs, led by Financial Institutions (Banks or Financial Entities Associations) and Fintech companies, using mainly AI and Machine Learning (ML) technologies, an established process is needed for designing and employing a Hackathon event, in order for all INFINITECH consortium members to leverage their products, including third party solutions.

Following previous research and contribution from the Crowdpolicy methodology for Hackathons organization, a well-established framework for INFINITECH Hackathons organization has been developed. It provides similar principles, similar tasks and specific toolkits for INFINITECH partners to utilize when such events are organized, aiming to not only optimize and provide better results through third party solutions inclusion, but also to increase participation, synergies and knowledge sharing, supporting the INFINITECH Open Innovation ECOSYSTEM.

Furthermore, supporting Task 8.5's goal for utilizing INFINITECH Hackathons for the project dissemination and exploitation activities within WP9-Dissemination, Exploitation and Standardization, it is considered that INFINITECH hackathon design as public events can contribute to INFINITECH branding, promoted through the INFINITECH Multi-sided Market Platform.

Taking into account that long-term continuation of INFINITECH Hackathons deliverables is crucial for co-creation with third party solutions and for expanding INFINITECH project reach-out, we provide the following suggestions for all INFINITECH partners that organizing such events:

- INFINITECH Hackathons specific goals should be aligned with the goals and results of the INFINITECH project.
- INFINITECH partners should employ a large-scale strategy for recruiting a variety of different participants' categories, so as to integrate as many third party solutions as possible.
- INFINITECH partners should consider third parties' motivation to participate in the events and try to align them with INFINITECH project goals.
- INFINITECH partners, besides the resources for preparing an event, should also consider deliverables continuation and ways to promote them, such as the INFINITECH Multi-sided Market Platform.

Concluding, INFINITECH Hackathons can provide alternate approaches and results for developing interesting and innovative deliverables, based on collaboration, interdisciplinarity and diversity as strengths, fostering not only INFINITECH project results, but also its sustainability, as well as strengthening ties and bonds among project partners and stakeholders, essentially contributing to the development of the INFINITECH ecosystem and market reach-out.

4 References

[1]   Briscoe G, Mulligan C, (2014). "Digital innovation: the hackathon phenomenon" Creative works London/QMUL, London. Available at: http://www.creativeworkslondon.org.uk/wp-content/uploads/2013/11/Digital-Innovation-TheHackathon-Phenomenon1.pdf

[2]   Heikki Topi and Allen Tucker. (2014). Computing Handbook, Third Edition: Information Systems and Information Technology. CRC Press.

[3]   Alexis Hope, Catherine D'Ignazio, Josephine Hoy, Rebecca Michelson, Jennifer Roberts, Kate Krontiris, and Ethan Zuckerman. (2019). Hackathons as Participatory Design: Iterating Feminist Utopias. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. ACM, 61.

[4]   Florea, I. C., Vochin, O. A., Ciachir, L., & NAGEL-PICIORUS, C. P. (2017). Competition for Innovation in the Financial Software Industry-A Research on Hackathons. In BASIG INTERNATIONAL CONFERENCE: NEW TRENDS IN SUSTAINABLE BUSINESS AND CONSUMPTION (Vol. 2017, pp. 234-242).

[5]   Emily Porter, Chris Bopp, Elizabeth Gerber, and Amy Voida. (2017). Reappropriating Hackathons: The Production Work of the CHI4Good Day of Service. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems. ACM, 810–814.

[6]   Nick Taylor and Loraine Clarke. (2018). Everybody's Hacking: Participation and the Mainstreaming of Hackathons. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems. ACM, 172.

[7]   Arnab Nandi and Meris Mandernach. (2016). Hackathons as an informal learning platform. In Proceedings of the 47th ACM Technical Symposium on Computing Science Education. ACM, 346–351

[8]   Miguel Lara and Kate Lockwood. (2016). Hackathons as Community-Based Learning: a Case Study. TechTrends 60, 5 (2016), 486–495

[9]   Laudet, D., (2017). Infographic: Worldwide Hackathon Figures in 2016, Available at: http://agency.bemyapp.com/insights/infographics-hackathon-figures-in-2016.html

[10]   Alexander Nolte, Ei Pa Pa Pe-Than, Anna Filippova, Christian Bird, and Herbsleb James D. Scallen, Steve. (2018). You Hacked and Now What? - Exploring Outcomes of a Corporate Hackathon. Proceedings of the ACM on Human-Computer Interaction 2, CSCW (2018), 129:1–129:23

[11]   Feldmann, A., & Teuteberg, F. (2020). Success factors for hackathons: German banks collaborate to tame the economic crisis. Journal of Business Strategy.

[12]   Marko Komssi, Danielle Pichlis, Mikko Raatikainen, Klas Kindström, and Janne Järvinen. (2015). What are Hackathons for? IEEE Software 32, 5 (2015), 60–67

[13]   Bard Rosell, Shiven Kumar, and John Shepherd. (2014). Unleashing innovation through internal hackathons. In Innovations in Technology Conference (InnoTek), 2014 IEEE. IEEE, 1–8

[14]   Pantelis Angelidis, Leslie Berman, Maria de la Luz Casas-Perez, Leo Anthony Celi, George E Dafoulas, Alon Dagan, Braiam Escobar, Diego M Lopez, Julieta Noguez, Juan Sebastian Osorio-Valencia, et al. (2016). The hackathon model to spur innovation around global mHealth. Journal of medical engineering & technology 40, 7-8, 392–399

[15]   M. Jordan. (2012) Planning a hackfest. Open Data Learning Summit.

[16]   Angarita, M. A. M., & Nolte, A. (2020). What do we know about hackathon outcomes and how to support them?–A systematic literature review. In International Conference on Collaboration Technologies and Social Computing (pp. 50-64). Springer, Cham.

[17]   Flores, M. et al. (2018). How Can Hackathons Accelerate Corporate Innovation? In: Moon, I. et al. (eds.) Advances in Production Management Systems. Production Management for Data Driven, Intelligent, Collaborative, and Sustainable Manufacturing. pp. 167–175 Springer International Publishing, Cham

[18]   Pe-Than, E.P.P. et al. (2018): Designing Corporate Hackathons With a Purpose: The Future of Software Development. IEEE Softw. 36, 1

[19]   http://crowdpolicy.com/

[20]   Nolte, A., Chounta, I. A., & Herbsleb, J. D. (2020). What Happens to All These Hackathon Projects? Identifying Factors to Promote Hackathon Project Continuation. Proceedings of the ACM on Human-Computer Interaction, 4(CSCW2), 1-26.