i-Connect

i-Connect is an industry-led collaborative network that involves the quadruple helix: (Industry, Academia, Government and Civil society) for disruptive innovation.

It aims to create and nurture a conducive innovation ecosystem in Malaysia towards increasing disruptive innovation. This will enable Malaysia to leverage on new economic opportunities for Malaysian industries to enter emerging global markets.

International Centre for Education in Islamic Finance (INCEIF) has been appointed as the Neutral Entity for the i-Connect Fintech in Islamic Finance by Academy of Sciences Malaysia (ASM), under the purview of the Ministry of Science, Technology and Innovation (MOSTI).

As the Neutral Entity, INCEIF is steering a consortium, consisting of 17 Founding Members who represent the industry, academia, government and civil society to catalyze innovations, nurture talent and develop home-grown high-value innovations in fintech for Islamic finance.

<table>
<thead>
<tr>
<th>Why?</th>
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<tbody>
<tr>
<td>- To develop home-grown high-value innovations in fintech for Islamic finance</td>
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<tr>
<th>How?</th>
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<td>- By bridging the gap between R&amp;D and business through knowledge-based innovation</td>
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<table>
<thead>
<tr>
<th>What?</th>
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<tbody>
<tr>
<td>- Establish fund to foster innovation and collaboration</td>
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<tr>
<td>- Create a conducive innovation ecosystem to address the pain points that require demand-driven R&amp;D.</td>
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Islamic Fintech Landscape

The i-Connect Islamic Fintech consortium is optimistic in developing the Malaysian Islamic fintech from the current perceived landscape to the future envisioned end game.

<table>
<thead>
<tr>
<th>Perceived Current Islamic Fintech Landscape</th>
<th>Envisioned Future Islamic Fintech Landscape</th>
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<tr>
<td>The market consists of few, small and new startups</td>
<td>Many established and new, big and small Islamic fintech startups</td>
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<tr>
<td>The operating landscape is fragmented and market stakeholders work in silos</td>
<td>A conducive innovation ecosystem to address the pain points that require demand-driven R&amp;D</td>
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<tr>
<td>A dearth of smart partnership between incumbent financial institutions, fintech startups and research institutions</td>
<td>Meaningful and smart partnership among IFIs, Islamic fintech startups and research institutions</td>
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<tr>
<td>Moderate adoption of innovations in Islamic finance and social finance</td>
<td>Wide adoption of meaningful and beneficial innovations in Islamic finance and social finance</td>
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Key Focus Area and Problem Statement

1) Social Financing Smart Solutions

The Islamic social finance (ISF) ecosystem has its specific instruments that can be leveraged to create a sound economic impact. They would either be philanthropic, such as zakat (obligatory alms-giving), sadaqah (voluntary alms-giving/charity), and waqf (endowment), or based on ta’awun (cooperation) which includes qard (benevolent loan) among others. These ISF instruments could play a vital role in addressing socio-economic issues by alleviating poverty, creating job opportunities, reducing unemployment and economic disparity, reinforcing equal distribution of wealth and income, supporting social justice and equity, promoting financial inclusion, and encouraging comprehensive human development.

The ISF tools can be used more effectively if they are properly developed, managed, and utilized to enhance transparency, accountability, and efficiency, thus enabling fair treatment for both donors and beneficiaries. However, it is observed that stakeholders question the collection, management, and distribution of ISF funds, and the bureaucracy involved in the process. This is due to the fact that even though the finance industry has begun to embrace digital innovations to provide speedy, timely, reliable, and sustainable solutions, the ISF institutions are still administering their activities manually, resulting in inefficiency in the supervision and disbursement of the funds.

Harnessing technology to monitor operations can reduce ambiguity, ensure due diligence with complete transparency, and create positive ripple effects throughout the system. Digital transformation allows for tracing, monitoring, reporting, and verifiability on a real-time basis the utilization of the funds, and thus its impact can easily be evaluated, which also enhances proper governance. This could have a huge positive impact in eliminating asymmetric information and mitigating the trust-deficit between donors and ISF institutions.
The adoption of technology in the ISF institutions can also raise efficiency to a level where logistics related costs can be minimized to a negligible level. It will increase the productivity of the ISF institutions and alleviate the burden of data management as digital solutions can replace traditional paper-based methods of filing documents and assessing the profiles of the beneficiaries requiring physical access that further delays the disbursement, not to mention the occasional misrecording and/or loss of data in the process. Moreover, introducing automated processes and using e-money for transactions will mitigate fraud and the risks associated with handling cash.

While embracing technology can help address these issues, it cannot be accelerated without addressing the digital divide and the participation of the stakeholders. The digital transformation in the ISF is inconceivable without digital literacy, data privacy, timely regulation, and infrastructure. Depending on their demographics, there is an unwillingness or reluctance of some individuals to adopt technology due to their strong affinity to always have cash-in-hand. In addition, extending ISF funds to poor individuals in the small unbanked population through digital channels is difficult because they lack digital skills impeding their handling of technology.

Innovative solutions can significantly increase the stakeholders’ patronage of digital channels which, in turn, increase the collections and distribution of ISF funds and maximize the economic and social impact of the disbursement to the beneficiaries.

**Indicative solutions**

- How might we enhance the transparency in the distribution of Zakat funds?
- How might we design an end-to-end solution to enhance the transparency and efficiency in the collection and distribution of Waqf funds?
- How might we automate the processing of Asnaf applications and shorten the approval time?
- How might we develop solutions to cater for different levels of digital literacy and acceptance of new technology?
- How might we design a mobile app that boosts the donation of Cash Waqf?
- How might we develop a central database that includes Waqf data from all states in Malaysia and provides monitoring and reporting functions to update the donors?
- How might we incorporate gamification elements into Waqf Platform to create fun and interesting experiences while participating and contributing to Waqf programs?
2) Digital Shariah-Compliant Financial Solutions

As the Fourth Industrial Revolution (IR 4.0) has been further accelerated by the change in consumer behavior in a light touch environment due to COVID-19 pandemic, the constant penetration of fintech is reshaping the finance industry’s status quo. This has resulted in an increased number of solutions and unprecedented innovation, with tech companies seeking to disrupt the financial sector, making it extraordinarily demanding and competitive for Islamic financial institutions (IFIs). In order for IFIs to thrive in this new digital age, responding to digital opportunities and threats is no longer an option but an imperative, necessitating a call to action for IFIs to harness digital innovation with increased urgency.

The IFIs can leverage fintech to transform risk management and compliance, remove information asymmetry and integrate Value-Based Intermediation (VBI) seamlessly with the real economy, particularly in trade and the Halal industry. This will bring about greater efficiency and transparency as well as manage risk effectively in delivering innovative value-driven and impact-focused end-to-end products and services. This is particularly important for trade transactions comprising multiple applications of Shariah contracts which demand not only a high degree of transparency and disclosure but also positive customer service and engagement to engender trust and confidence in Islamic finance. With the growing call for finance to support sustainability in the post pandemic recovery, higher expectations are also being placed on IFIs to lead in accelerating innovations across green and sustainable tech-driven financial products services.

IFIs can also unlock significant growth value from existing and new customers by capturing and managing information from a broader and richer set of data, including nontraditional sources using real-time analytics that can improve the accuracy and consistency of its operating models and provide faster, more forward-looking, and deeper predictive insights, in part by greatly reducing the biases. The more granular the insight, the better IFIs will be able to target their communities with innovative and more customised product offerings.

Digitalisation of IFIs can also lower costs and expand operational footprint. The reduced costs will allow IFIs to reach the underserved and the unbanked with more affordable digital financial services, bringing financial inclusion to the next level. Moreover, the deployment of digital innovation opens up scope for the takaful industry to create efficiencies whilst addressing customer demand and changing perceptions about the value of Takaful (Islamic insurance) protection, further closing the protection gap of the population, particularly among low-income groups.
Given the relentless march of digital disruption, it is critical for IFIs to reposition themselves - the higher the level of digital agility they will possess, the greater will they be able to survive and flourish.

**Indicative solutions**

- How might we design efficient and effective operating models through digitizing the underlying processes in Islamic financial institutions?
- How might we provide innovative solutions with underlying Islamic finance principles to enhance financial inclusion for unbanked and underbanked segments?
- How might we develop solutions to monitor customers’ impact on the economy, environment and society?
- How might we develop artificial intelligence-based and other innovative tech-based solutions that could help with some level of automation in the Shariah review process within Islamic financial solutions?
Underlying Technology

The 10-10 Malaysian Science, Technology, Innovation and Economic (MySTIE) Framework is an integration of 10 key Malaysian socio-economic drivers with 10 global leading science and technology drivers aligned to our strengths and needs.

i-Connect Research and Development Grant is intended to be used to develop disruptive solutions using one or more of the sciences and technology drivers, following are some examples of drivers (see Appendix for further details):

The Grant is intended to be used to bridge the gap that often exists among Research, Development and Deployment phases, i.e. Technology Readiness Level (TRL) 1 – TRL 9 (Appendix 1).

<table>
<thead>
<tr>
<th>Research phase</th>
<th>Development phase</th>
<th>Deployment phase</th>
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<tbody>
<tr>
<td>TRL1</td>
<td>TRL2</td>
<td>TRL3</td>
</tr>
<tr>
<td>Ideation</td>
<td>Innovation begins</td>
<td>Proof of concept</td>
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</table>

Regardless of the initial technology readiness level of the project, all applicants must achieve/exceed TRL 8 within the funding timeframe.
Eligibility Criteria

1. i-Connect Research and Development Grant is open to all applicants;
2. The application involves at least one (1) local company/organization (Malaysian) pairing with at least one (1) local university or research center;
3. The project must be completed in 12 months with the Malaysian company/organization (industry) as the project lead; and
4. Roles and responsibilities, contributions, and the ownership of the project outcomes shall be addressed and agreed upon by the project partners prior to execution of the collaboration.

Grant Application Process

1. Application Submission
   15 Jul 2021 - 31 Aug 2021
2. Evaluation and Selection
   16 Aug 2021 - 15 Sep 2021
3. Project Approval
   16 Sep 2021 - 15 Oct 2021
4. Fund Disbursement
   16 Oct 2021 - 15 Nov 2021
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Eligible Expenditure

The Grant may be used for the following activities:

- Product design, development, and improvement
- Solution (i.e. hardware and/or software) development and testing
- Rental of equipment/machinery that is directly related to the project
- 12 months license for software that is directly related to the project Bill of Materials
- Consultation fee for Subject Matter Expert(s)
- Salary for full-time and/or allowance for part-time resources assigned to work on the deliverables of the project
- Analytical validation study, i.e. to demonstrate the accuracy, precision, and reproducibility of the test
- Market validation and pilot run
- Relevant Certification cost
- Intellectual Property (IP) filling
- Travel and accommodation for INCEIF and ASM related to i-Connect Project (inclusive of structured training program for project team members)

Note:

1. To be eligible for the funding, grant applicant must fund at least 50% of the total project cost. Contributions from the grant applicant in the form of financial funds, expertise, equipment, services etc. need to be translated in value of financial contribution.
2. Terms and conditions of the grant, and timing of disbursement, will be set out in a Project Agreement between the grant applicant and INCEIF. INCEIF reserves the right to terminate grant funding to the project if agreed milestones are not met.
3. No minimum/maximum amount for the grant application. The granting amount would be relative to the project size and complexity, and the extent it meets the project milestones, deliverables, and timeline.
4. i-Connect is under the initiative of MOSTI. Hence, for more details on the list of activities, please refer to “Garis Panduan” MOSTI.
Merit Criteria

To be qualified for the i-Connect Fintech in Islamic Finance Grant, applicants will need to address all merit criteria in their application. The amount of detail and supporting evidence should be relative to the project size, complexity, and grant amount requested.

**Criterion 1**
Technology Readiness Level (TRL). The initial technology readiness level of the project shall be between TRL 3 to TRL 9 inclusively. Priority will be given to projects that will be working at TRL 6 and above to expedite Development and Deployment phases. TRL indicators can be found in the Appendix.

**Criterion 2**
Alignment with the 10-10 MySTIE Framework. The Framework provides a systematic approach to transform Malaysia into a knowledge-intensive economy by design. It aims to generate shared economic prosperity across the diverse ecosystems in the country and shift Malaysia up the global innovation value chain.

**Criterion 3**
Demonstration of Advanced Characteristics. The Project describes how the Islamic finance industry transformation can be achieved through implementing one, or a combination of, the following traits:

- Advanced knowledge: ability to develop and refine research questions and methods specific to targeted discipline
- Advanced process: focus on using state-of-the-art technology, familiarity with digitalization
- Business model innovation:
  - Assess the competitive landscape
  - Identify sources of sustainable cost and differentiation advantage
  - Relate product uptake to revenue models and investment strategy
  - Develop product pipeline for strategic disruption in the market
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Reporting Obligations

As the Neutral Entity for the i-Connect Islamic Fintech, INCEIF may gather feedback through interactive survey among end-users and partners, and publish a case study covering an overview of the challenges addressed, the approach, solution/learnings, and the planned benefits and general findings observed in the i-Connect Islamic Fintech project.

INCEIF may also produce a final report, which reviews project processes, learnings, workforce training, IP, and firm level outcomes. The final report shall be shared with all 17 Founding Members.

INCEIF and/or Founding Members may request performance metrics on market share, entry into new markets, sales, or other data for one (1) year, post project completion.

Founding Members and end-users of the applications will need to provide feedback timely (or upon request). INCEIF will prepare a written summary of the feedback for further discussion to enhance rectifying actions.
Promotion

INCEIF and Founding Members will promote the i-Connect Islamic Fintech projects and partners via media releases, social media channels, INCEIF website, and other relevant networks.

INCEIF will continually promote the i-Connect Islamic Fintech projects and encourage funding agencies / venture capitals to contact INCEIF for additional funding for the projects.

Appendices

Technology Readiness Level (TRL) definition and description:

<table>
<thead>
<tr>
<th>Phase</th>
<th>TRL</th>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research phase</td>
<td>TRL1</td>
<td>Basic principles observed and reported</td>
<td>Scientific knowledge generated underpinning basic properties of software architecture</td>
</tr>
<tr>
<td>Ideation</td>
<td>TRL2</td>
<td>Basic principles observed, so practical applications can be formulated</td>
<td>Practical application is identified. Basic properties of algorithms, representations, and concepts defined.</td>
</tr>
<tr>
<td>Innovation begins</td>
<td>TRL3</td>
<td>Analytical and laboratory studies are required to see if the technology is viable</td>
<td>Development of limited functionality to validate critical properties and predictions using non-integrated software components.</td>
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</tbody>
</table>
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<table>
<thead>
<tr>
<th>Development phase</th>
<th>TRL4 Component test</th>
<th>Laboratory testing of the prototype component</th>
<th>Key, functionally critical, software components are integrated, and functionally validated, to establish interoperability and begin architecture development.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TRL5 Prototype construction</td>
<td>Laboratory testing of the integrated system</td>
<td>End-to-end software elements implemented and interfaced with existing systems/simulations conforming to the target environment. End-to-end software system, tested in relevant environment, meeting predicted performance. Operational environment performance predicted. Prototype implementations developed.</td>
</tr>
<tr>
<td></td>
<td>TRL6 Alpha testing</td>
<td>Prototype system demonstrated in an operational environment</td>
<td>Prototype implementations of the software demonstrated on full-scale realistic problems. Partially integrate with existing hardware/software systems. Limited documentation available.</td>
</tr>
<tr>
<td>Deployment phase</td>
<td>TRL7 Beta testing</td>
<td>Completed design tested in real environment</td>
<td>Prototype software exists having all key functionality available for demonstration and test. Well integrated with operational hardware/software systems demonstrating operational feasibility. Most software bugs are removed.</td>
</tr>
<tr>
<td></td>
<td>TRL8 Technology demonstration</td>
<td>Proven to work under its expected conditions and certified to be</td>
<td>All software has been thoroughly debugged and fully integrated with all operational hardware and software systems. All user documentation, training</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Technology Driver</th>
<th>Explanation</th>
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<tr>
<td><strong>Blockchain</strong></td>
<td>Digital ledger system that is democratic, incorruptible, efficient, verifiable, and holds permanent record of every transaction of value among multiple economic agents.</td>
</tr>
<tr>
<td><strong>Advanced Intelligent Systems</strong></td>
<td>Encompasses big data processing, advanced robotics, artificial intelligence, machine learning, directed self-assembly, neuromorphic engineering, and quantum computing to enable flexibility, adaptability, precision, and efficiency in analyses, information processing, and response.</td>
</tr>
<tr>
<td><strong>Cyber-Security &amp; Encryption</strong></td>
<td>Technologies, processes, practices, and methods that protect information and communication systems (networks, devices, and data) mitigating risks associated with malicious attack, digital hijacking, unauthorised access, and damage to systems and data.</td>
</tr>
<tr>
<td>Guidelines</td>
<td>Augmented Analytics &amp; Data Discovery</td>
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<tr>
<td>Neuro Technology</td>
<td>Technology that enables the study of brain processes, brain-computer interface, decision-making, behavior, and neurological disorders.</td>
</tr>
<tr>
<td>Sensor Technology</td>
<td>High-performance sensors, including microelectromechanical systems (MEMS), magnetic materials and piezoceramics, wearable biosensors, and printable wearable electrochemical sensors.</td>
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References: