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For what's next

Guidance on Establishing an Innovation Pipeline

A Hub should establish an innovation pipeline to effectively manage activities across four key areas:

- Opportunity Discovery
- Ideation & Conceptualisation
- Concept Validation
- Solution Development & Deployment

Descriptions of each of these areas are provided below as guidance. Given the need to ensure that research is translated to market, it is important that the methodologies associated with these activities are evidence-based. Moreover, the activities undertaken as part of the innovation pipeline should be underpinned by a systematic approach to the development of innovation skills to ensure that activities are efficient, effective and scalable. ARC Hubs are encouraged to explore collaborative opportunities or to leverage existing local/regional programmes to support activities across its innovation pipeline. To support teams to fully explore the opportunity identified robustly, researchers based at an SFI ARC Hub will have the opportunity to participate in entrepreneurship and innovation training provided under the I-Corps@SFI Academy and SFI-NSF I-Corps@SFI Entrepreneurial Training Programme. Application to the SFI-NSF I-Corps@SFI Entrepreneurial Training Programme will be an expected "capstone" activity for teams within the Hub to ensure that key aspects of Concept Validation have been completed to ensure future commercialisation success.
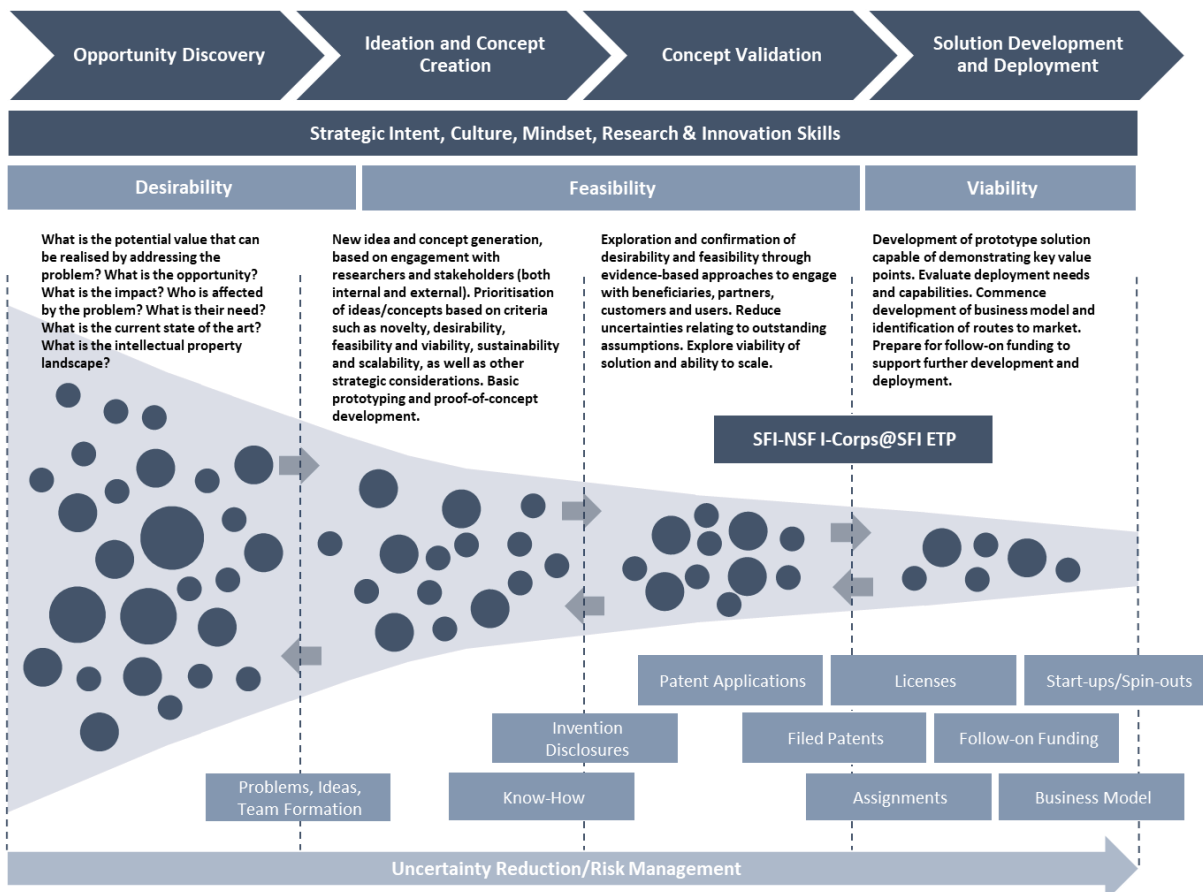
Figure 1. An ARC Hub should operationalise the translation of research from ideas to early solution deployment through key stages of desirability, feasibility, and viability validation. Uncertainty should be reduced at each stage enabling risk to be managed appropriately to maximise successful commercialisation impact in the future.

1. Opportunity Discovery

Opportunity discovery represents the initial activity in an innovation pipeline and is concerned with acquiring insights and knowledge that allow for the discovery, identification, and prioritisation of opportunities where value can be realised. Methodologies associated with this activity include but are not limited to: horizon scanning; trend analysis; market landscape analysis; and stakeholder, customer and end-user engagement.

The output of these activities could be a set of prioritised opportunities for which the realisable value or impact potential is understood and supported by evidence. These opportunities are often expressed as unmet or unrealised needs or problem statements that describe the issue to be addressed and the value or impact that could be realised by addressing them. A further output of this stage could be the profile of a team with the motivation to address the identified needs or opportunities.

2. Ideation & Conceptualisation

Following opportunity discovery, it is necessary to generate ideas as to how the identified needs or problems can be addressed. This could involve the use of established techniques, such as brainstorming, to outline new concepts that are either original or novel through the convergence of other ideas. The generation of new ideas for potential solutions should be informed by the current state of the art and where possible be informed by engagement with researchers and stakeholders (both internal and external) using appropriate methodologies. Selection of ideas to progress to subsequent stages should be undertaken based on criteria such as novelty, desirability, feasibility and viability, sustainability, and scalability, as well as other strategic considerations.

The output of these activities could be initial concepts for solutions and how they can realise value or deliver impact for stakeholders, beneficiaries, customers or end-users. These initial concepts should clearly identify where the novelty of the proposed solution addresses unmet or unrealised needs and provide an initial assessment of the feasibility of addressing the need or opportunity. This assessment could also identify any skills or technical gaps associated with a team or resources being positioned to address the opportunity.

3. Concept Validation

Having generated ideas as to how identified needs or problems can be addressed, these activities are concerned with validating the appropriateness/potential effectiveness of the proposed concepts. This could involve a number of approaches or methodologies which seek to test fundamental assumptions in relation to how the concept could create value for stakeholders, beneficiaries, customers or end-users. Ideally, approaches or methodologies should involve direct engagement with stakeholders, beneficiaries, customers or end-users. This could involve the use of established evidence-based techniques such as lean launchpad/I-Corps or Design Thinking. A key objective of this activity should be to improve or adapt the current concept based on analysis of the evidence gathered through direct stakeholder engagement. An output of this activity could be insights into how a concept could be developed successfully with greater clarity on the needs or problems it could address. Alternatively, an output of this process could be a decision not to continue the development of a concept based on the insights gathered.

4. Solution Development (and Deployment)

Solution development (and deployment) activities should not commence until sufficient insight into the desirability and feasibility of a concept have been established and a team identified to move the concept toward the planned commercialisation endpoint. These activities should be concerned primarily with developing a deep understanding of how a solution will be realised and what barriers may restrict this. These activities should entail detailed planning of the route to commercialisation and any requirements that need to be met in progressing along this route such as appropriate partnerships, funding etc. Broadly, these activities are expected to explore key aspects of product-

market fit validation and business-model development. An output of this activity could be clear insights on product-market fit, an initial business model which demonstrates how value can be captured and shows all the necessary components needed to realise this, plans for follow-on funding or securing funding from other sources to support solution deployment.