

2020 Strategic Technology & Innovation Management Programme

Roadmapping hardware venture pathways from prototype to manufacturing

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Industrial / managerial need addressed

When moving from prototype to full manufacturing, innovators are faced with a “hockey stick” profile to product development cash flow. This journey is paved with many challenges – including dead ends – and projects often run late or over budget due to manufacturing setbacks and poor planning. This project aims to develop a framework for mapping pathways from proof of concept to full manufacturing to support strategy development. Furthermore, it provides guidance on activities and challenges involved in this journey, including the mechanisms that generate barriers to development, and awareness of alternative paths. The framework incorporates readiness levels and includes product design, manufacturing strategy, supply networks, investment, and regulation and standards considerations early in the journey.

Expected deliverables

- A framework for mapping hardware venture pathways from prototype to manufacturing using roadmapping concepts to support strategy development and estimation of future time and investment required to get a hardware product to market.
- Includes a set of recommended activities, milestones, decision gates, key performance indicators, SWOT evaluation and implications for new ventures based on their characteristics and the institutional landscape.

Engagement opportunities

STIM member companies are invited to participate in the project to share best-practice experience when moving from proof of concept to full manufacturing and benefit from a framework to evaluate risks when deciding to collaborate with a new venture in their supply chain. Hardware venture startups are invited to share case experience and benefit from a systematic approach to strategy development and investment readiness. Furthermore, the framework provides the opportunity to compare and contrast hardware venture start-ups and internal ventures in established firms.

Approach

- Interviews with different stakeholders (innovators, contract manufacturers, investors etc.) to identify alternative pathways and readiness criteria
- Use of roadmapping concepts
- Case studies