HardTech Accelerator Curriculum: 16 Sessions

In-Person Sessions:

1. Introduction to Hardtech, Lean Startup, and Industry Landscape

Objective: Understand hardtech, the lean startup approach, and the current industry landscape.
Components:

- Lean startup principles: Build-Measure-Learn loop
- Introduction to hardtech and its significance
- MVP (Minimum Viable Product) concept in hardtech

2. Refine Prototyping and MVP Development

Startups at these TRLs have moved beyond the basic proof of concept. Sessions on prototyping and MVP should focus on:

- Moving from lab-scale models to pilot-scale.
- Ensuring prototypes can withstand real-world conditions and usage.
- Regulatory and safety considerations for more advanced prototypes.

3. Deep Dive: Hardtech Innovations and Case Studies

Objective: Explore breakthroughs, lessons learned, and insights from successful hardtech startups.
Components:

- Interactive case study analyses
- Group discussions on innovation trends

4. Customer Discovery and Problem-Solution Fit

Objective: Identify potential customers and ensure the problem aligns with the solution.
Components:

- Techniques for effective customer interviews
- Defining and testing hypotheses
- Problem validation and early pivots

5. Enhance Customer Interview Techniques:

Given that the technology has achieved a certain maturity, customer feedback at this stage is crucial. Focus on:

- Gathering feedback on actual prototypes or MVPs rather than just concepts.
- Conducting user trials or pilot studies, capturing detailed user experiences, and refining the product accordingly.

6. Hands-on Prototyping, MVP Development, and Lab Session

Objective: Experience the process of prototyping and creating MVPs in a supervised lab setting.
Components:

- Guided prototyping workshops
- MVP development tools and techniques
- Feedback sessions

7. Transitioning from Lab to Field:

Objective: Guide startups in moving their technologies from controlled environments to real-world applications.
Components:

- Strategies for pilot-scale testing and demonstrations.
- Handling failures and unforeseen challenges in the field.
- Iterating based on field tests and feedback.

8. Intellectual Property, Lean Principles, and Speed

Objective: Understand IP while maintaining lean startup speed and agility.
Components:

- Balancing speed with patenting
- Lean strategies for IP protection
- MVP considerations for IP

9. Intellectual Property Workshop: Navigating Hardtech IP Challenges

Objective: Dive deep into the complexities of IP in the hardtech space.
Components:

- Interactive patent search and application sessions
- Group discussions on IP strategies

10. Building a Hardtech Team: Interactive Recruitment and HR Workshop

Objective: Simulate the process of building and managing a hardtech team.

Components:

- Role-playing recruitment sessions
- Discussions on team dynamics
- Case studies on team challenges

11. Partnerships, Collaborations, and Networking Event

Objective: Facilitate actual networking and foster potential collaborations.
Components:

- Structured networking sessions
- Panel discussions with industry leaders
- Collaborative brainstorming sessions

12. Emphasize Partnerships and Collaborations:

Startups at these levels will benefit immensely from strategic partnerships for testing, validation, and scaling.

- Introduce them to potential industry partners for pilot testing.
- Provide guidance on crafting joint venture or collaboration agreements.

13. Demo Day, Feedback, and Iteration

Objective: Present projects, gather feedback, and refine pitches.
Components:

- Live pitching sessions
- Feedback roundtables
- Iterative brainstorming workshops

Remote Sessions:

1. Regulatory Frameworks and Compliance in Hardtech

Objective: Understand regulatory standards, testing, and certification processes.
Components:

- Webinars from industry experts
- Q&A sessions

2. Lean Financial Management and Bootstrapping

Objective: Dive into the principles of lean financial management for startups.

Components:
- Online financial tools and software demos
- Webinars on lean budgeting

3. Digital Marketing and Online Presence for Hardtech Startups

Objective: Understand online marketing strategies suitable for hardtech products.
Components:

- Webinars on SEO, content marketing, and social media
- Case studies on successful online campaigns

4. Piloting, Field Trials, and Data Analysis

Objective: Understand the intricacies of executing and analyzing pilot projects.
Components:

- Online tutorials on data collection tools
- Webinars on interpreting and acting on field data

5. Add a Session on Scaling Up Production:

Objective: Prepare startups for scaling from prototype or MVP to larger production runs.
Components:
- Strategies for manufacturing at scale.
- Quality control and assurance at larger scales.
- Supply chain management for higher production volumes.

6. Sustainability, Impact, and Global Trends

Objective: Explore global sustainability trends and the role of hardtech.
Components:

- Webinars on sustainable development goals (SDGs)
- Case studies on impactful projects

7. Dive Deeper into Regulatory Compliance:

With a more mature technology, startups are closer to commercialization, and regulatory considerations become paramount. The session should cover:

- Specific regulatory hurdles for technologies nearing market readiness.
- Certification processes for relevant industries.
- Navigating pilot-scale testing regulations.

8. Growth Hacking and Advanced Scaling Strategies

Objective: Dive into advanced techniques for rapid growth in hardtech.
Components:

- Online sessions on growth hacking tools
- Case studies on successful scaling stories

9. Continuous Learning and Post-Accelerator Support

Objective: Offer resources and insights for continual growth post-accelerator.
Components:

- Webinar series on emerging hardtech trends
- Discussions on seeking further investments and collaborations

10. SBIR Grants: Securing Federal Funding for Hardtech Innovations

Delivery Mode: In-Person (Given the complexity and the importance of this topic, an in-person session can provide more interactive and direct support.)

Objective: Equip startups with the knowledge and tools to successfully apply for and secure SBIR grants from the federal government.

Components:

1. **Introduction to SBIR/STTR Programs**:
   - Overview of SBIR and STTR (Small Business Technology Transfer) programs
   - Differences between SBIR and STTR
   - Agencies offering SBIR/STTR grants

2. **Eligibility and Requirements:**
   - Understanding the eligibility criteria for startups
   - The structure of the grant: Phases I, II, and III
   - Technical, financial, and administrative requirements

3. **Crafting a Winning Proposal**:
   - Decoding the solicitation: Understanding topics, priorities, and guidelines
   - Key components of an effective SBIR proposal
   - Common pitfalls to avoid

4. **Interactive Workshop**:
   - Hands-on workshop to draft sections of the proposal
   - Peer review and feedback session

5. **Financial Planning for SBIR:**
    - Budgeting and financial projections
    - Understanding allowable costs and financial reporting

6. **Post-award Compliance and Scaling**:
    - Reporting requirements and maintaining compliance
    - Utilizing SBIR funding for maximum impact and growth
    - Transitioning from Phase I to Phase II and potential commercial partnerships in Phase III

7. **Resources and Support**:
    - Introduction to online tools, platforms, and communities for SBIR applicants
    - Potential consultants and experts in the field

8. **Q&A Session with Past SBIR Awardees**:
    - A panel discussion with founders who successfully secured SBIR grants
    - Sharing experiences, tips, and advice

11. CAD/CAM Software Mastery for Hardtech Prototyping

Delivery Mode: In-Person (Given the hands-on nature of the training)
Objective: Enable startups to design and prototype using leading CAD (Computer-Aided Design) and CAM (Computer-Aided Manufacturing) software.
Components:

- Introduction to CAD/CAM: Understanding the significance and application in hardtech.
- Software Overviews: Brief overviews of popular platforms like AutoCAD, SolidWorks, Fusion 360, and others.
- Hands-on Workshop: Practical exercises in designing basic components and assemblies.
- CAM Integration: Transitioning from design to manufacturing, setting up machine paths.
- Collaborative Design: Techniques for team-based design and cloud-based collaboration.
- Resources & Troubleshooting: Common issues and solutions, online communities, and advanced tutorials.

12. Customer Interview Techniques for Validated Learning

Delivery Mode: Remote (Can leverage video demonstrations and online tools)
Objective: Equip startups with techniques to conduct effective customer interviews and gather actionable insights.
Components:

- Basics of Customer Interviews: Objective setting, and structuring the interview.
- Question Crafting: How to phrase questions for unbiased, informative answers.

- Role-playing Sessions: Participants practice interview techniques.
- Recording & Analyzing Feedback: Tools for recording interviews and synthesizing feedback.
- Iterative Learning: How to refine product offerings based on feedback.
- Common Pitfalls: Typical mistakes made during interviews and how to avoid them.

13. Google AdWords for Hardtech Startups

Delivery Mode: Remote (Leveraging screen sharing and live demonstrations)
Objective: Train startups to use Google AdWords effectively for marketing their innovations.
Components:

- Introduction to Google AdWords: Overview and importance in the marketing mix.
- Campaign Structuring: Setting up campaigns, ad groups, and keyword planning.
- Ad Creation: Crafting compelling ad copy and CTAs (Call to Actions).
- Budgeting & Bidding: Strategies for setting budgets, bidding on keywords, and optimizing for ROI.
- Performance Analysis: Using analytics to measure ad performance and make adjustments.
- Advanced Features: Exploring features like ad extensions, retargeting, and audience targeting.

14. Lean Startup Tactics: MVP & Pivot Strategies

Delivery Mode: In-Person (For interactive discussions and group exercises)

Objective: Understand the essence of the MVP (Minimum Viable Product) and strategies for pivoting based on customer feedback.

Components:

- Defining the MVP: Core features, scope, and the importance of early validation.
- MVP Case Studies: Analyzing successful MVPs and the feedback loop.
- Prototyping Tools: Quick tools and platforms for MVP creation.
- Pivoting: Identifying the need to pivot, strategies, and real-world examples.
- Feedback Collection: Gathering and analyzing feedback for pivot decisions.
- Group Exercise: Crafting MVPs for hypothetical products and discussing pivot scenarios.