AMTech Structure RFI

Feedback to-date on Management Models

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AMTech RFI

- AMTech RFI includes 23 questions involving the design and structure of the proposed AMTech program

- RFI closes October 20 – to date 38 responses
  - 27 respondents answered all 23 questions
  - 4 respondents answered less than 23 questions
  - 7 respondents provided comments that were not explicitly directed to any question
- Responses were provided by a variety of sources.
  - 3 consortia
  - 9 small businesses
  - 3 large or medium size companies
  - 6 nonprofit organizations
  - 4 trade associations
  - 9 institutes of higher education
  - 4 individuals

VCAT Design Principles for AMTech

- **VCAT:** What management models are most effective for public-private partnerships – specifically AMTech – taking into consideration the following concerns:
  - To facilitate development, diffusion, and adoption of knowledge and technology transfer
  - To facilitate participation by small manufacturers

Related AMTech RFI Questions

- ***Question 14 -*** *What management models are best suited for industry-led consortia?*
- ***Question 9 -*** *What are best practices for facilitating the widest dissemination and adoption of knowledge and technology through consortia?*
- ***Question 8 -*** *What are ways to facilitate the involvement of small businesses in AMTech consortia?*
- ***Question 20 -*** *What are lessons learned from other successful and unsuccessful industry-led consortia?*

RFI Feedback on Management

- **What management models are best suited for industry-led consortia? Lead, Structure**
- What are best practices for facilitating the widest dissemination and adoption of knowledge and technology through consortia?
- What are ways to facilitate the involvement of small businesses in AMTech consortia?
- What are lessons learned from other successful and unsuccessful industry-led consortia?

What management models are best suited for industry-led Consortia - LEAD

Most Responses: Industry-led model

Many Responses: Alternatives…

- led by nonprofit
- led by public university or state agency that is bias free
- NSF engineering research centers and industry/University Cooperative research centers
- led by a Consortium administrative organization
- organized and facilitated by a nonprofit Application Center

Lone wolf

Leave to proposing organization - each consortium able to proposed their own management model, with a lead institution as primary contractor

What management models are best suited for industry-led Consortia - STRUCTURE

Most Responses: Structured; teams, governing boards…
management committee advisory board model
board of industry executives with nonprofit organization
general manager/executive director, professional consortium manager

Alternative Responses: Simple, low complexity
relatively simple management model with a single lead, e.g. led by paid staff manager with technical advisory board

RFI Feedback on Management

- What management models are best suited for industry-led consortia? Lead, Structure
- **What are best practices for facilitating the widest dissemination and adoption of knowledge and technology through consortia?**
- What are ways to facilitate the involvement of small businesses in AMTech consortia?
- What are lessons learned from other successful and unsuccessful industry-led consortia?

best practices for dissemination of knowledge and technology?

Awards should…

- focus on multiple products
- focus on specific industries
- build on partnerships / other relationships within consortia

Operations should…

- **Emphasize Communications**
  - quarterly/annual meetings to monitor progress and success
  - involve IT tools (e.g. webinars), common website
- **Integration through cross industry participation**
  - Involvement from technology developers through end users
  - Active membership expansion

Output should…

- Support IP development cost, free license to consortium members
- Publish white papers, conference reports, presentations, meetings
- Results presented/demonstrated, and made available at technology centers - MEP network should be utilized

RFI Feedback on Management

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Facilitate Involvement

Most said…

- Consortiums should require participation by small business
  - AMTech program should be centered around small businesses
  - Award target percentage to small business

Incentives should…

- **Incentives should be used to get small business to participate**
  - Reduce or eliminate the cost share requirements for small businesses
- **Target participation by organizations that would attract or make it easier for small businesses to apply, such as**
  - Venture Capitalists
  - Suppliers or customers of small business
  - Each component of the "supply chain"

OEM participation is critical

Trade associations

Outreach should…

- Formal outreach efforts by AMTech staff
  - Outreach efforts - AMTech workshops, seminars, and webinars, small business oriented web portal, local chamber of commerce
  - Use Technology roadmaps, identify areas best served by small businesses

RFI Feedback on Management

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- What are best practices for facilitating the widest dissemination and adoption of knowledge and technology through consortia?
- What are ways to facilitate the involvement of small businesses in AMTech consortia?
- **What are lessons learned from other successful and unsuccessful industry-led consortia?**

Lessons Learned – "Nifty Nine"

1) Selection Process

- Transparency of review process and program performance is critical
- Clearly defined selection criteria with established execution and termination to run semi-autonomously with minimum bureaucracy

2) Consortium Focus

- **Industry-led, market focus**
  - Address common technical problems
  - Clearly defined goals and metrics,
  - Established technical milestones with focus on consortium objectives
- **Right Scope**
  - Avoid too broad a problem or issues to address
  - Should have near term exit opportunities – avoid long term/unfocused
  - Select a problem or challenge that most of the members encounter (challenge facing the industry)
- **Right home**
  - Need central "neutral home"; research many places esp. at industry testbeds, but useful to have a place where members can meet and to serve as the focal point

Lessons Learned – "Nifty Nine"

2) Consortium Focus (continued)

- **Solutions focus**
  - Develop standardized solutions and education for the wider audience and for knowledge dissemination
- **Clear, common objectives**
  - Work plan developed by industrial membership, mutually agreed goals
  - A start-up plan that quickly engages members and initiates successful projects
  - Align goals throughout a value chain (materials suppliers, component manufacturers/suppliers, OEMs), and inclusive of small and large business and research organizations.

3) Funding

- Sufficient funding
  - including federal funding and expected industry cost share - to attract significant industry interest and more than a passing commitment
- Encourage multiple funding sources

Lessons Learned – "Nifty Nine"

4) Cost Share Requirements

- Goldilocks rule
  - Avoid high membership fees AND too low; participants are not sufficiently committed to advancing the consortium's goals.
  - a tiered membership fee is best based on company size and their influence in the consortium decision making processes
- Requiring upfront cost share may impede progress
  - AMTech funding alone may be necessary to demonstrate feasibility of a technology, then other sources can help to mature and commercialize it

5) IP Issues

- **A sound IP policy that can work for companies small -> large**
  - Unsuccessful consortia places competitors together to share and potentially contaminate IP.
- **The disciplines to define program deliverables, participant roles and responsibilities, and IP management prior to project launch is a must.**

Lessons Learned – "Nifty Nine"

6) Participants

- Avoid setting up a group of Founders who control the resources and direction of the projects.
- One government agency is lead
- Involve a wide range of stakeholders – the entire supply chain
- Important to have for-profit involvement, focus, and oversight of academic research
- Having committed industrial partners and ensuring a total supply chain approach is executed will enable higher success rates in the deployment of developed capabilities

7) Management

- Experienced management, lead organization is a neutral party
- Consortia usually fail from poor management or insufficient resources
- Management ensures all participants of membership have equitable representation in governance
- Plan, but be agile and adatable to change

Lessons Learned – "Nifty Nine"

8) Operations

- Build and maintain trust among partners
- Show value for both the government and industry
  - respecting the needs of both
  - providing a strategic plan with mission, vision, goals
  - invoking a consensus based roadmap
  - allocating resources for administering the consortium
  - Use professional consortium management resources
- Maintain proper attention to the commercialization phase
  - Start as a joint government-private industry initiative, private companies should take over as consortia matures
- Communicate & Educate
  - Write books, articles, handbooks, and papers for industry adoption
  - Show value and success regularly in the life of the consortium.
  - Interview / visit suppliers and customers to understand the channel, customer needs and realities of doing business in that channel.

Lessons Learned – "Nifty Nine"

9) Examples

- SEMATECH and the Semiconductor Research Corporation are examples of successful industry-led consortia.
  - strong leadership by key large industry members
  - active engagement and membership of companies within their supply chain
  - dedicated leadership and management personnel
  - and a focus on removing existing roadblocks to progress with advanced manufacturing technologies

- UIDP open innovation model encourages idea development and dissemination.
- NCMS model
- DARPA SBIR STTR model

Any Questions?

Thank you

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