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NEW HAMPSHIRE AEROSPACE & DEFENSE EXPORT CONSORTIUM (NHADEC)

STRATEGIC PLANNING THINK-TANK WORKSHOP

August 16, 2017

NEW HAMPSHIRE AEROSPACE & DEFENSE EXPORT CONSORTIUM (NHADEC)

CONCORD, NEW HAMPSHIRE

New Hampshire Aerospace & Defense
Export Consortium (NHADEC)

STRATEGIC PLANNING THINK-TANK WORKSHOP

April 16, 2017

This report summarizes the half-day strategic planning workshop held in Concord, New Hampshire, on August 16, 2017. Approximately 20 stakeholders and NHADEC staff participated in the workshop and developed the findings presented in this report. This report was prepared under contract with the Department of Business and Economic Affairs, New Hampshire, with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Department of Business and Economic Affairs, New Hampshire, and does not necessarily reflect the views of the Office of Economic Adjustment.

REPORT PREPARED BY:

future→iQ

WORKSHOP HOSTED BY:



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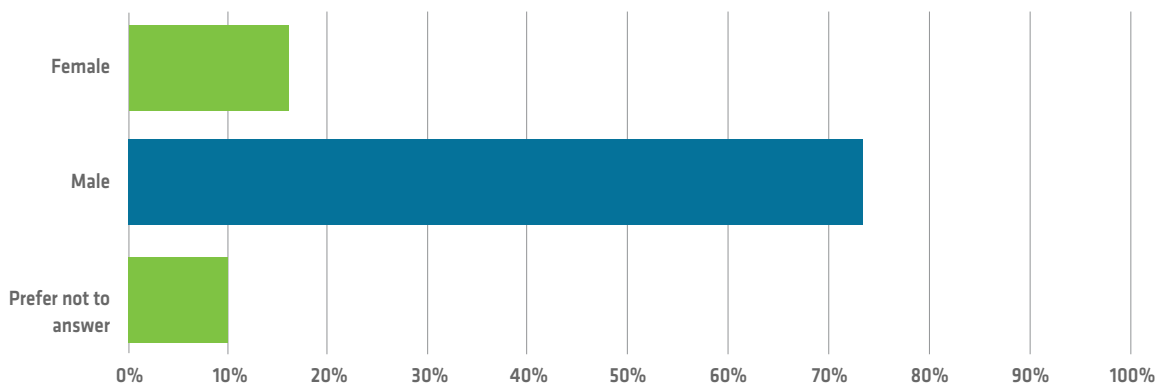
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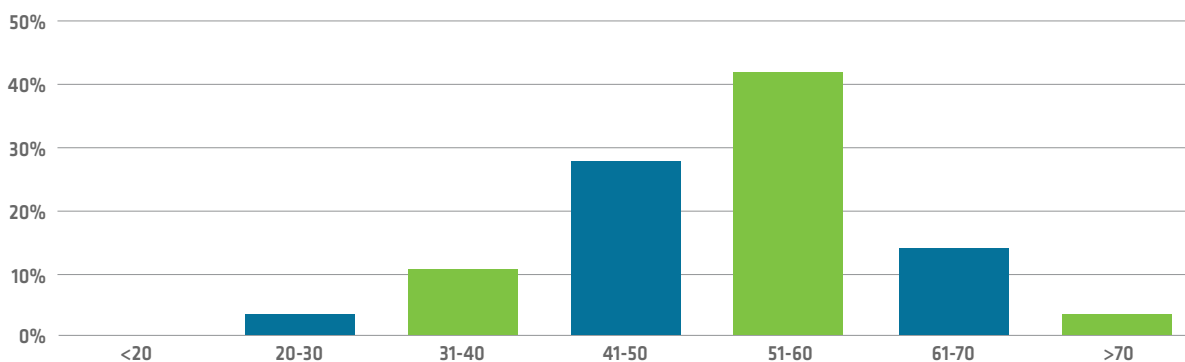
2.0 STAKEHOLDER SURVEYS

Prior to the planning workshop, surveys were conducted. Workshop participants were asked about their views on having a shared vision for the future of NHADEC. In terms of demographics, approximately 17% of respondents were female, 73% were male and 10% preferred not to answer the question. The majority of respondents were in the 41-60 age range, with 14% in the 20-40 age range.

What is your gender?

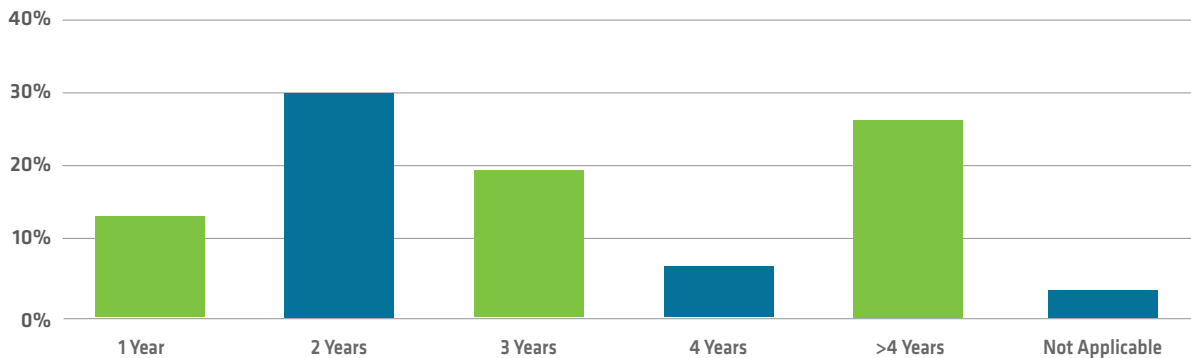


What is your age group?



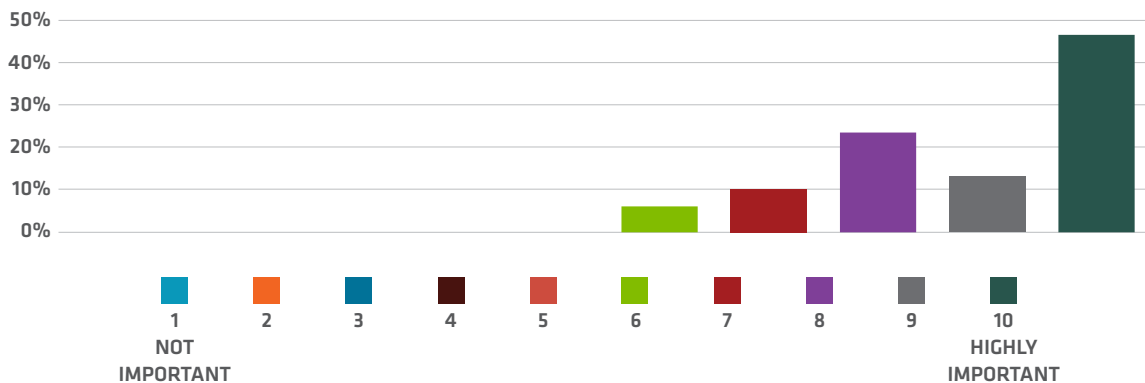
Respondents were asked how long they have been involved with NHADEC. The majority of respondents were involved for more than two years.

How long have you been involved with NHADEC?

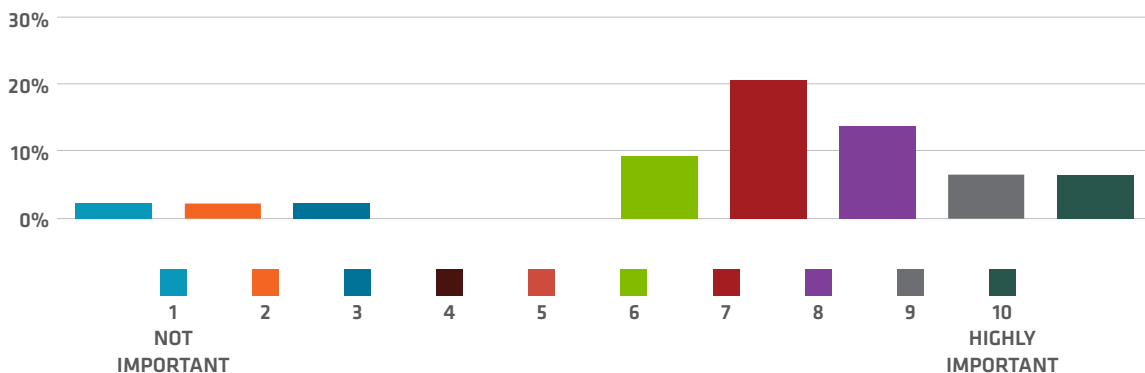


The following graphs show a high level of importance placed on having a shared vision for NHADEC, and the importance of having a shared vision in decision-making.

How important do you think it is to have a shared vision for the future of NHADEC?

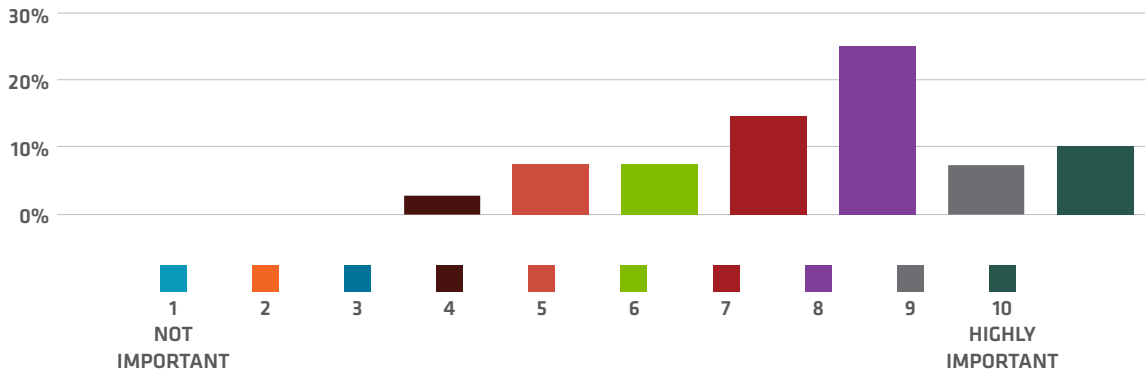


How important will a shared vision for NHADEC be in making decisions for YOUR organization / department?



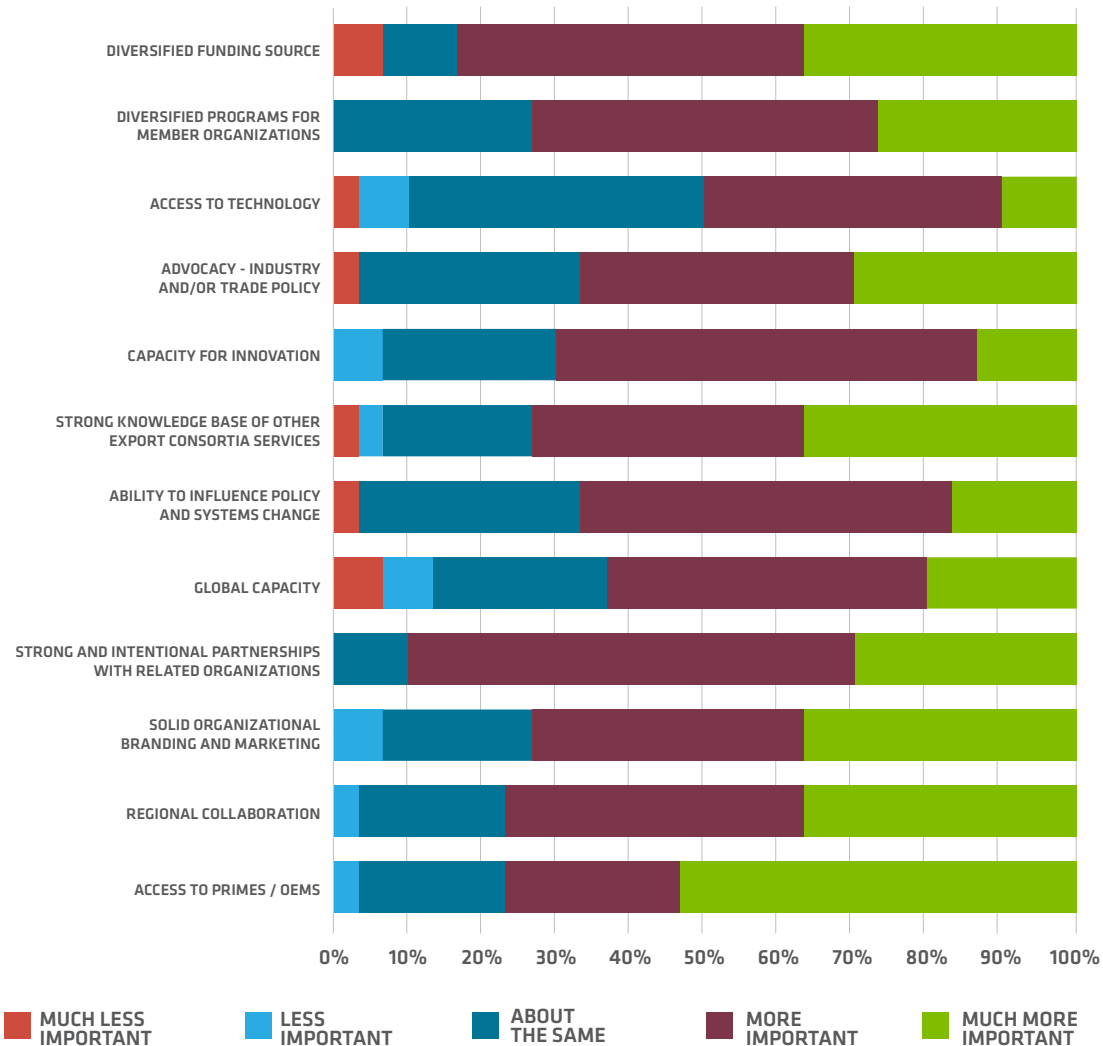
Survey respondents were asked to indicate how they felt about the future prospects for NHADEC in the next 5 years.

How would you rate the future prospects for NHADEC in the next 5 years?



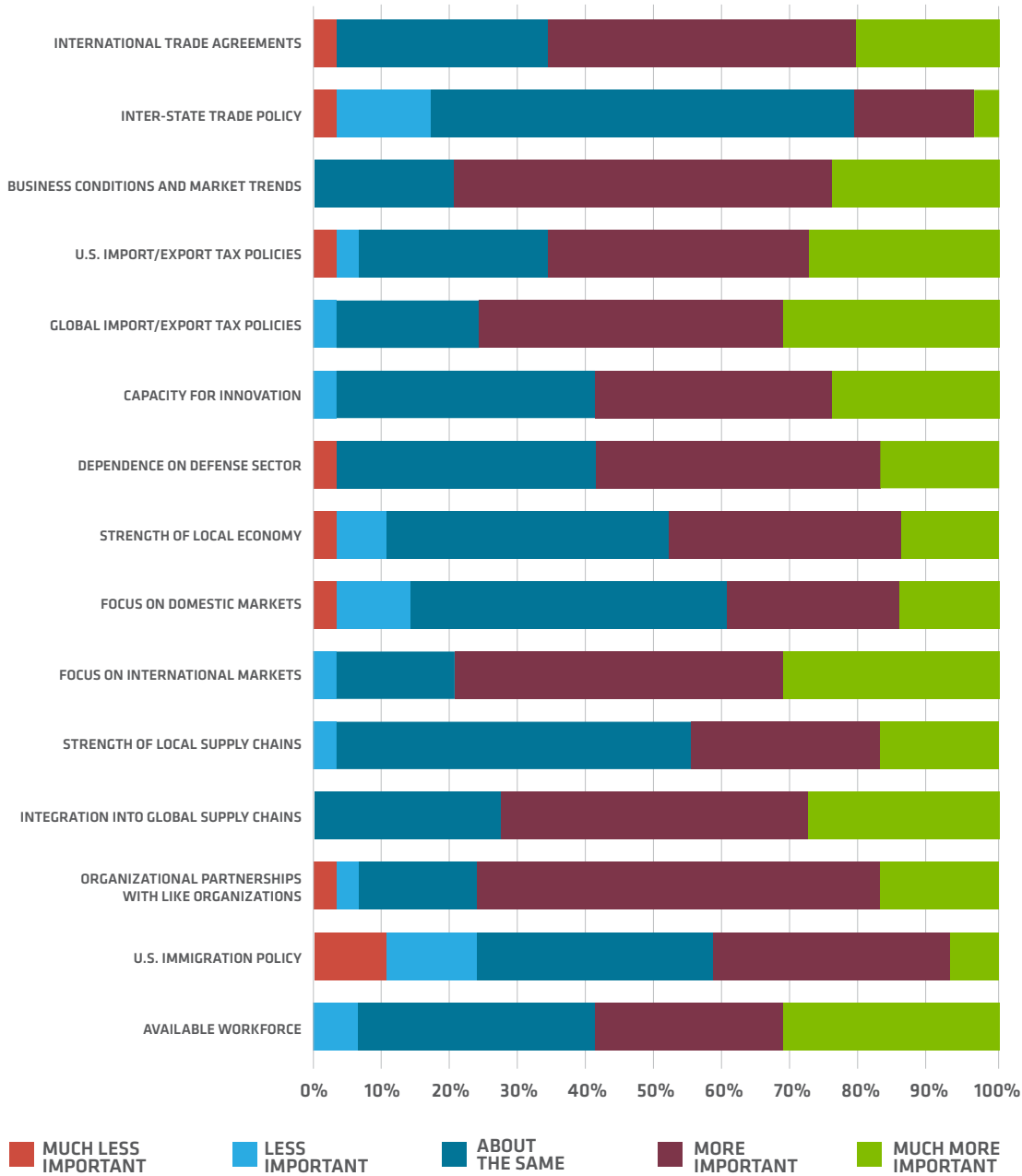
Survey respondents were then asked to indicate the importance of the following assets to the future of NHADEC.

Please indicate how important you think the following assets are to the future of NHADEC.



Survey respondents were asked to consider the next 5 years and to rate the importance of changes to the following topics with respect to NHADEC.

Over the next 5 years how important will changes in the following topics be to NHADEC?

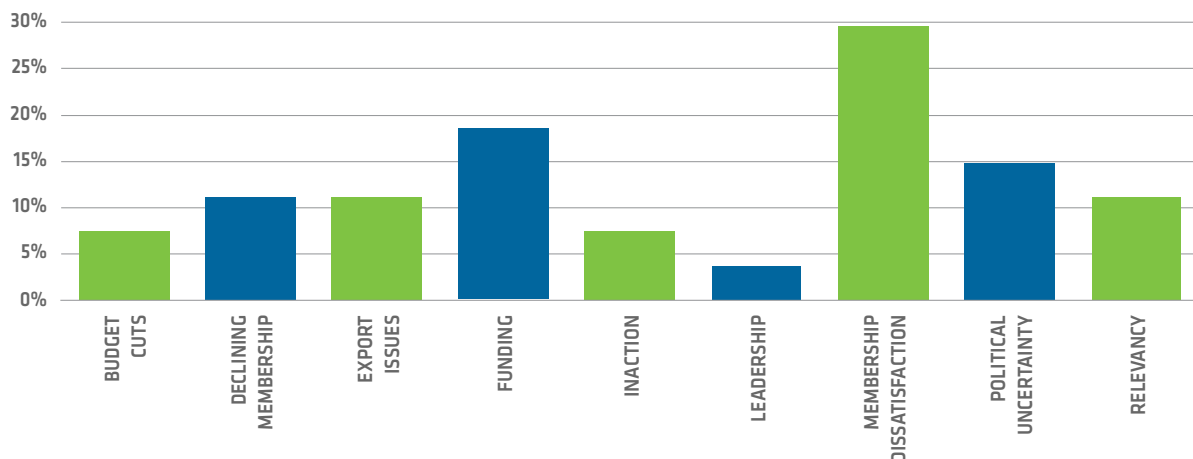


Survey respondents were asked to describe what they thought were the most important unrealized opportunities for NHADEC over the last 3 years. Although the organization was praised for taking advantage of opportunities presented, unrealized opportunities were identified as including:

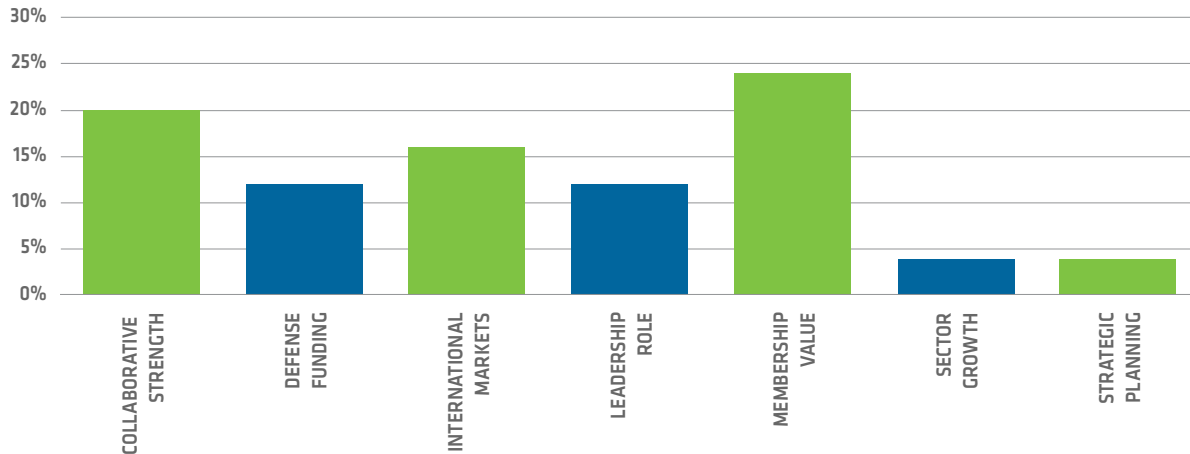
- Generating dedicated military and government set-aside contracts for members
- Connection to companies with subsidized market entries in Asia
- Optics and opto-electronics
- Access to Primes
- The security industry
- Utilizing grant funds to their fullest impact
- Marketing brand and value proposition
- Membership growth
- Additional benefits to members
- Taking advantage of small business base in promoting SBIR/STTR and small business mandates
- Shared knowledge of companies and their capabilities
- Providing added sales for member companies
- Increased revenue from member dues

Survey respondents were also asked to describe what they thought are the biggest threats and biggest opportunities facing NHADEC in the next 5 years.

What do you think are the biggest threats NHADEC will be facing in the next 5 years?

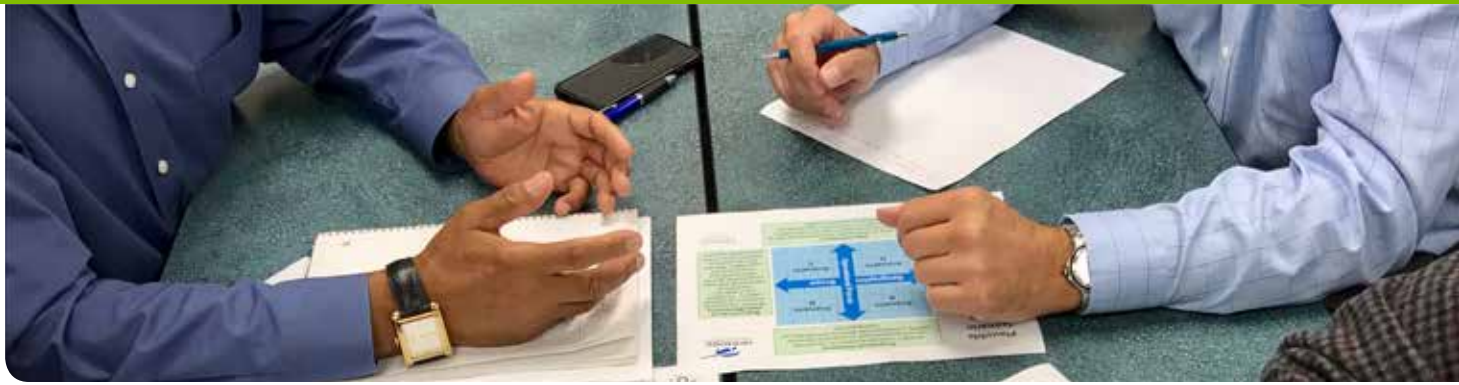


What do you think are the biggest opportunities NHADEC will be facing in the next 5 years?



In conclusion, survey respondents were asked what they thought were the three most important items to be discussed when considering the future of NHADEC. Below is a compilation of priorities for discussion:

- Innovation in a global economy
- Open discussion of cultural issues
- Social/digital media marketing in other countries
- US and global import/export policies
- New Hampshire first revenue generation small business set asides
- Sourcing a qualified workforce
- Focusing on domestic and export opportunities
- Growing NHADEC's leadership in the industry
- Focus on member companies' growth
- Adding a security sector
- Independence and breaking the traditional business model
- Budget capacity / constraints
- Building a strong membership list
- Developing clear goals for core audiences
- Branding and value building partnerships
- Sustainability outside of grants
- Regional expansion and/or regional collaboration
- How to embed new technology strategically
- Communication opportunities
- Partnering with UNH and Dartmouth on defense and aerospace related innovation
- Leadership transition
- Understanding US military plans, goals and objectives
- OEM opportunities
- Annual funding and revenue generation
- Geographical membership expansion
- Diversified program strategy expansion



3.0 STRATEGIC PLANNING USING SCENARIO-BASED PLANNING

The scenario-based strategic planning workshop was conducted on August 16, 2017, and included invited NHADEC stakeholders. This half-day workshop was attended by approximately 20 participants. The workshop was intended to assist in the understanding of future drivers that impact the defense industry, expectations of NHADEC stakeholders, and what is wanted by leaders of the organization. Outcomes were intended to begin to deal with and prioritize the opportunities and challenges that affect NHADEC's interests and capabilities by creating four plausible scenarios for the future of the organization.

3.1 SCENARIO-BASED PLANNING WORKSHOP

The New Hampshire Department of Economic and Business Affairs contracted Future iQ to design and deliver a future orientated planning workshop to facilitate the understanding of the future drivers that affect NHADEC. Future iQ's Scenario Planning process provides a method to explore plausible futures and consider the implications of various future scenarios. This workshop aimed to:

- Deepen the understanding and examine how external events and local conditions could shape decision-making.
- Identify and understand the key influences, trends, and dynamics that will shape NHADEC over the next 5 to 20 years.
- Create and describe four plausible long-term scenarios for NHADEC.
- Begin exploring alignment around a shared future vision. The scenarios developed during this Scenario Planning process and outlined in this report are important to provide a framework to discuss future possible outcomes and implications. Workshop deliberations can assist in identifying key actions for NHADEC and in identifying how various groups might best contribute to future developments. The design of the workshop included a presentation and discussion about key forces shaping the future at both global and local levels. These exercises and work were aimed to build a robust basis for the scenario formulation. Participants were then guided through

a Scenario Planning process to develop four plausible scenarios for the future of NHADEC. The process involved an exploration and discussion of global, regional, and local trends and forces of change; the development of a scenario matrix defining four plausible scenario spaces for the future; and, the development of descriptive narratives of each scenario. The event concluded with discussion of the scenarios, selection of a preferred scenario and first steps to determine the strategic actions required to create the preferred scenario.

3.2 DEVELOPING FOUR PLAUSIBLE SCENARIOS FOR THE FUTURE

NHADEC stakeholders and staff explored the future and developed plausible future scenarios, looking out as far as 2030.

3.2.1 DRIVERS SHAPING THE FUTURE

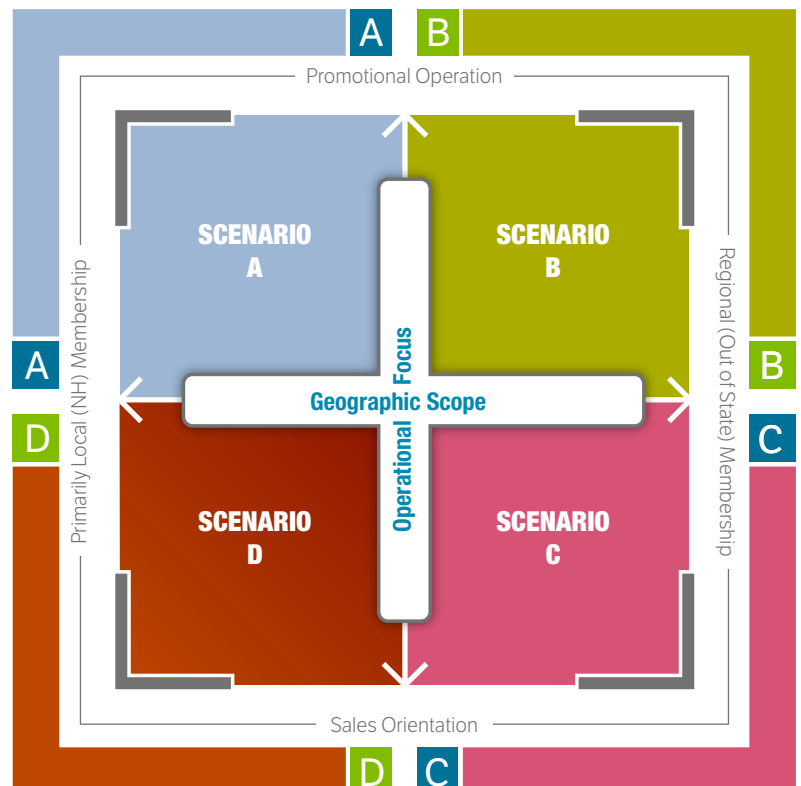
With the background of global, national, and regional forces and how they relate to NHADEC, participants were invited to respond to a survey prior to the workshop. The survey sought to gain insight into what participants believe to be the key drivers of NHADEC and specifically how to address resource allocation.

Creating scenario spaces – four plausible scenarios for the future

Based on the Pre Think-Tank responses, themes were identified to become the basis for two axes on the scenario matrix that define four scenario 'spaces', with quadrants either towards or away for each driver cluster. These quadrants were used to formulate four plausible scenarios.

The two axes identified were **Geographic Scope** and **Operational Focus**.

Workshop participants were presented with the scenario matrix, defined by the two major axes of 'Geographic Scope' and 'Operational Focus' (see diagram). Brief descriptions were also attached to the end points of each driver axes. While these end points do not necessarily represent two extremes on a linear continuum, they are distinct enough to suggest some degree of separation and a plausible range of outcomes between them. The four quadrants (scenario spaces) based on different combinations of the two cluster themes, were reviewed and discussed with



the workshop participants. This discussion explored the description of the end points included in each scenario space, the possible interaction between these drivers, and how they formed the axes that defined the four scenario spaces. Participants were asked to consider the main attributes of each of the quadrants and to begin to speculate about how changing societal attitudes and behavior and the impacts of technology and policy would look in a future based on each of the quadrants.

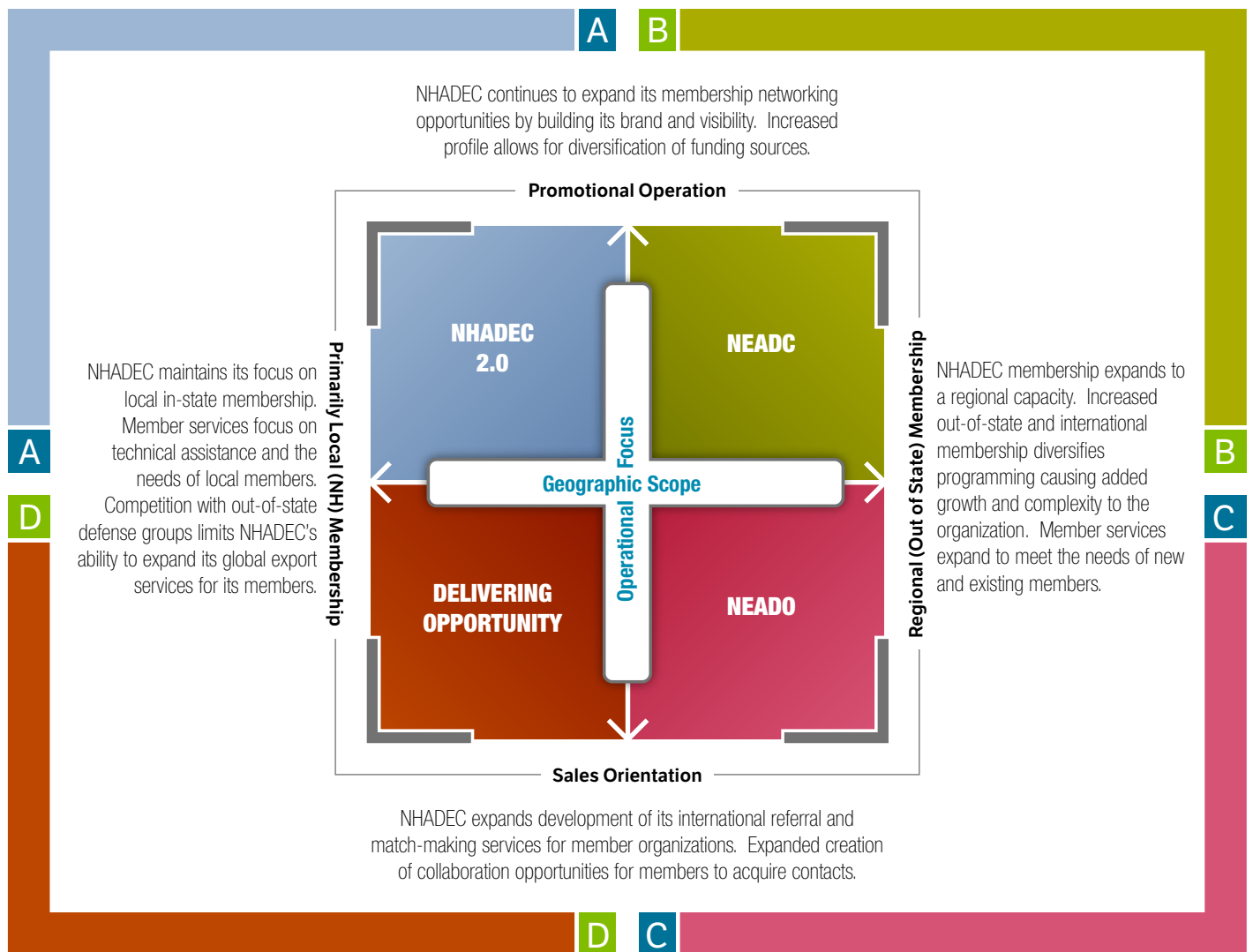
3.2.2 SCENARIO MATRIX – VIEWS OF THE FUTURE

Event participants were assigned to one of four groups and asked to formulate a scenario for their respective quadrant. Each group was asked to describe characteristics of the following dimensions of NHADEC under the conditions of the scenario quadrant that they had been given:

- Organizational profile
- Membership profile
- Industry sector profile

Additionally, they were asked to devise major events or headlines of how the scenario occurred using the years 2020, 2025, and 2030 and to give their scenario a descriptive name. Once the scenarios had been developed, each group reported back, describing their scenario to the other workshop participants. Each group's notes for their scenario and the description were used to produce the detailed narrative for each scenario. Below is the scenario matrix showing the names of each scenario as described by the workshop participants.



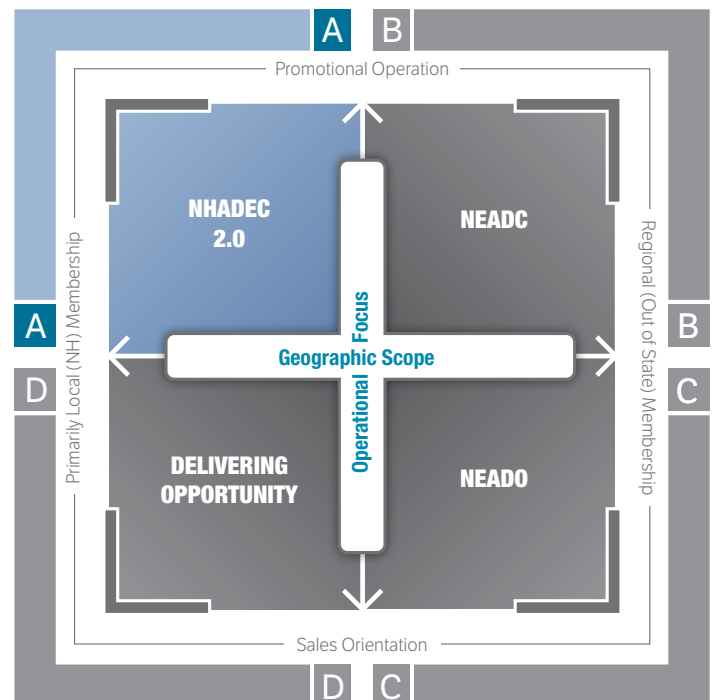


These four scenarios paint very different plausible futures for NHADEC. The workshop participants considered them all as largely plausible futures, as in, they could actually happen. Narratives and descriptions of each scenario, as developed by the workshop participants, are included in the following section. Each scenario has its subsequent consequences and impacts on NHADEC – impacting the organization, membership and the industry sector in different ways. No one future is the ‘perfect’ future, as each comes with its attendant challenges and implications. The process, however, does provide a way to tease out the future scenarios and examine them from a speculative standpoint. They represent different possibilities for the future, and are not predictions.



3.3 SCENARIO A – NHADEC 2.0

NHADEC expands its membership base with the increased networking opportunities afforded by the growing brand recognition of the organization. The increased profile allows for diversification of funding sources but is limited to the local orientation of membership. The organization remains reliant on grant funding and volunteers to maintain high quality services and programming. Long-term resiliency is affected due to the organization's dependence on volunteer staffing and competition from out-of-state groups.





SCENARIO CHARACTERISTICS - 2030

Organizational Profile / Characteristics

- Funding efforts: Membership increase and capture the remaining companies (250 entities)
- Service providers and media companies
- Volunteer based run organization (can't afford to pay a consortium manager)
- Grants through the State and Federal level
- Charge out of State "Premium" to remain in consortium
- Sponsorships retain all the prime/ companies, OEMs
- Leadership/competitiveness having these primes/OEMs

Membership Profile / Characteristics

- 300 potential entities in Aerospace and Defense manufacturing in NH (50 Service providers)
- Out of State "Premium" members
- Expand to OEMs/Primes and becoming Sponsors
- Have yet to fully get our mission out
- Stay in State/Poor
- Limited members of out of State and OEMs

Industry Sector Profile / Characteristics

- US plans to spend \$600 trillion on defense
- Size of the market and the growth of the market
- Take out the "Export" aspect in the name
- Focus on the future growth of the industries/keep the OEM and Primes in the membership
- Forefront of innovation and attracting NH companies



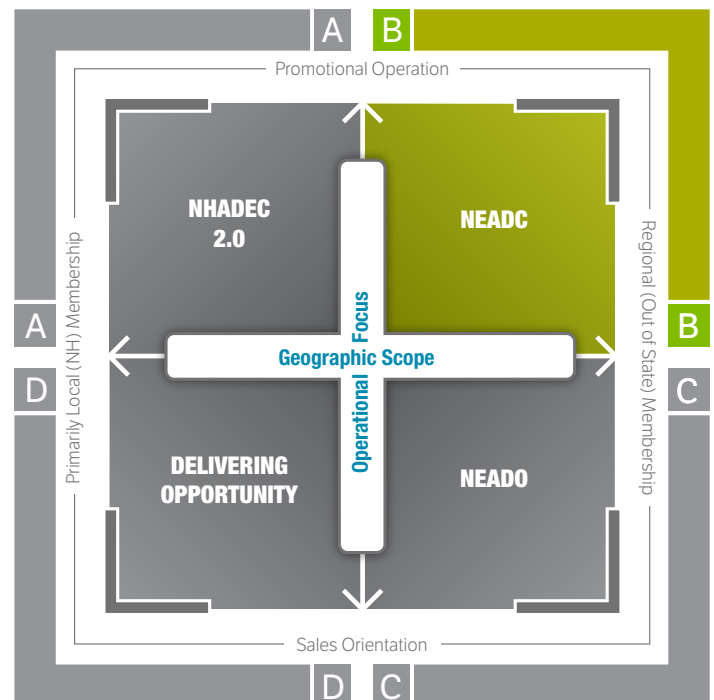
SCENARIO A - HEADLINE NEWS

	2020	2025	2030
Organizational Profile	<i>NHADEC partners with other established groups</i>	<i>NHADEC financially sound and backed by volunteers</i>	<i>Volunteers run NHADEC</i>
Membership Profile	<i>Smart Manufacturing spurs innovation growth</i>	<i>Regional partnerships promoted</i>	<i>NHADEC memberships are maxed out in NH</i>
Industry Sector Profile	<i>Growth in Defense more than Aerospace</i>	<i>Skilled workforce replacing educated workers</i>	<i>New defense consortia start up around the U.S.</i>



3.4 SCENARIO B – NORTHEAST AEROSPACE AND DEFENSE CONSORTIUM (NEADC)

NHADEC expands its membership to include regional, national and international organizations. Additional branding and marketing efforts through revenue generating events contribute to recognition and visibility. This increased profile allows for more diversification of funding sources with a healthy ratio of OEMs, Primes, Tier 2 and 3 industry sector members. Member services increase to meet the demand of new members and a professional infrastructure is added to organizational staffing. The Northeast Aerospace and Defense Consortium (NEADC) becomes self-sustainable.





SCENARIO CHARACTERISTICS - 2030

Organizational Profile / Characteristics

- Membership fees
- Sponsorships
- Revenue generating events
- Professional infrastructure added

Membership Profile / Characteristics

- Northeast Aerospace and Defense companies and organizations (manufacturing focus)
- Matchmaking, education, marketing, advocacy and lobbying
- Healthy ration of OEM, Primes, T2 & T3

Industry Sector Profile / Characteristics

- Growth in drones, commercial aerospace, anti-missile, marine
- Defense generally flat to modest growth
- Broadening of supply chain, logistical efficiencies
- Proximity to innovation hubs



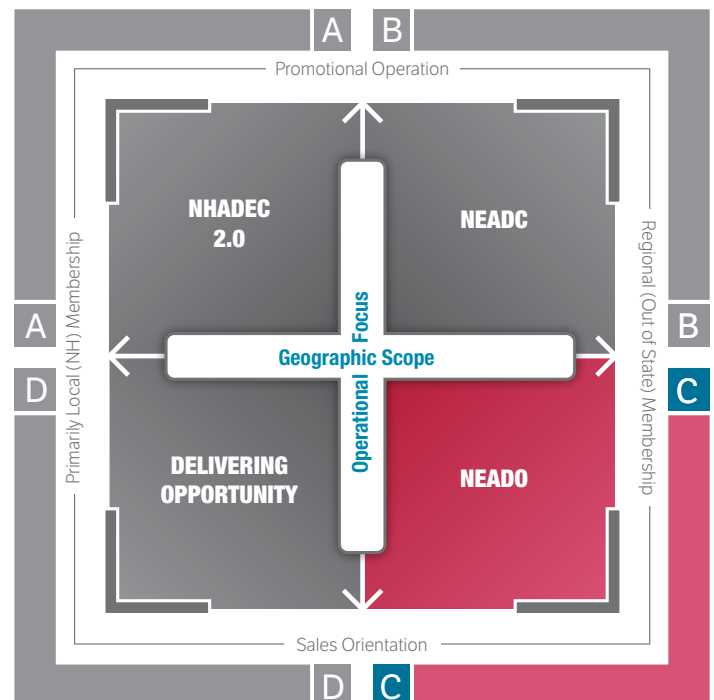
SCENARIO B - HEADLINE NEWS

	2020	2025	2030
Organizational Profile	<i>NHADEC renamed North East Aerospace and Defense Consortium</i>	<i>Regional tradeshow attracts national and international attendees</i>	<i>NEADC refocuses to become a national organization</i>
Membership Profile	<i>NHADEC grows to 150 members</i>	<i>NEADC grows to 500 members</i>	<i>NEADC grows to 1000 members</i>
Industry Sector Profile	<i>NEADC partners with New Hampshire universities to co-research</i>	<i>Industry specific subgroups formed</i>	<i>Regional divisions appear</i>



3.5 SCENARIO C – NEW ENGLAND AEROSPACE AND DEFENSE ORGANIZATION (NEADO)

NHADEC changes its status to a for-profit organization and changes its name to NEADO. Membership expands on a regional level with an increase in international memberships and matchmaking services. The organization's trade orientation grows to include both domestic and export trade. Collaboration opportunities become commonplace adding growth and complexity to the organization. Staffing of the organization is expanded to include market specialists. NEADO is competitive in the industry and stays on top of innovation and new programming for its members.





SCENARIO CHARACTERISTICS - 2030

Organizational Profile / Characteristics

- New England Aerospace and Defense Consortium
- All trade involved – export and domestic
- Grant opportunities still needed
- Membership fees – networking
- New services and a la carte set prices
- Specialized aerospace employees
- Public/private partnership – for profit?

Membership Profile / Characteristics

- New England region (State governments involved)
- Regional matchmaking / matchmaking between members also a focus
- Sponsorship levels
- 2 membership levels – manufacturers vs. service providers
- Component services group / subassemblies group - making sure meeting with the right audience

Industry Sector Profile / Characteristics

- Next 5 years: More military spending expected; aerospace also expected to be up
- Staying on top of innovations – staff member needed to monitor



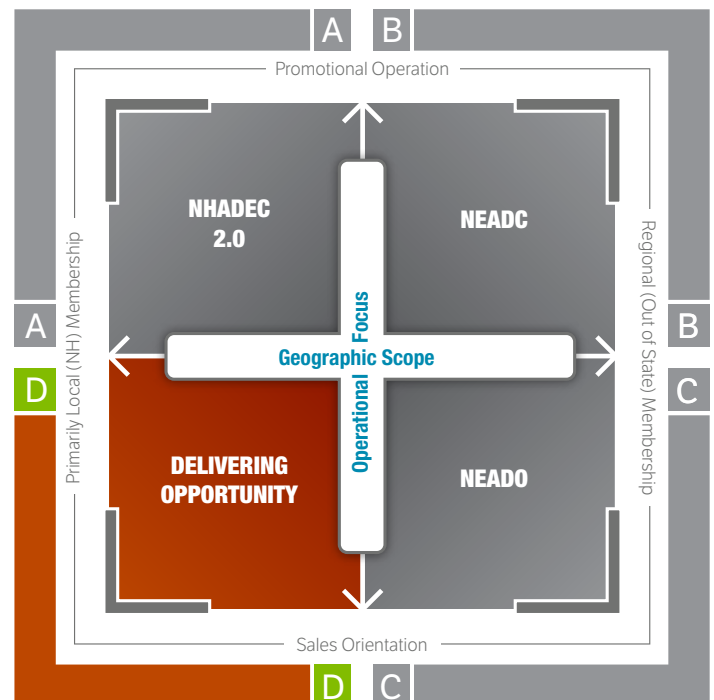
SCENARIO C - HEADLINE NEWS

	2020	2025	2030
Organizational Profile	NHADEC goes NEADO!	NEADO announces they're the largest aerospace and military organization in the U.S.	NEADO announces they're the largest aerospace and military organization in the world
Membership Profile	NEADO announces 100 new members from the region	After NEADO regional matchmaking event, members report additional \$5 million in sales (Company reports "Best decision I ever made!")	NEADO hosted national aerospace and defense show bringing in 3,000 exhibitors and 50,000 attendees
Industry Sector Profile	NEADO announces new Innovation Director	NEADO announces major investment for members to investigate innovative technologies	NEADO announces strategic partnership with DARPA



3.6 SCENARIO D – DELIVERING OPPORTUNITY

NHADEC's New Hampshire-based memberships increase with expanded international referral and matchmaking services for its members but plateau after maximum capacity and limitations to membership. Competitiveness is reduced as funding resources include only New Hampshire entities in the aerospace and defense industry requiring the organization to remain dependent on grant funding for its activities. Leadership and long-term sustainability is held in check due to the limited population and competition with out-of-state groups.





SCENARIO CHARACTERISTICS - 2030

Organizational Profile / Characteristics

- Primary funding is through contract fees, sales, revenue, etc., but other funding (membership fees) is limited based on scope
- Very focused and efficient organization, but limited competitiveness
- Leadership is limited because of limited population

Membership Profile / Characteristics

- SMEs; primarily New Hampshire
- Tactical sales, opportunity identification
- Significant increase in export opportunities

Industry Sector Profile / Characteristics

- Enabling growth in short form, but will eventually plateau due to max capacity and limitations of membership
- NHADEC as an aggregator and/or OEM helps address supply chain consolidation
- Innovation opportunities are deep and narrow



SCENARIO D - HEADLINE NEWS

	2020	2025	2030
Organizational Profile	<i>NHADEC doubles membership</i>	<i>NHADEC wins major defense contract</i>	<i>Is NHADEC still relevant?</i>
Membership Profile	<i>NHADEC members ready for 'Prime' time</i>	<i>NHADEC establishes defense technology incubator</i>	<i>BAE complains about NHADEC competition</i>
Industry Sector Profile	<i>NHADEC connects small businesses with defense contracts</i>	<i>Meet NHADEC: State's newest OEM</i>	<i>NHADEC struggles with Manufacturing 5.0</i>

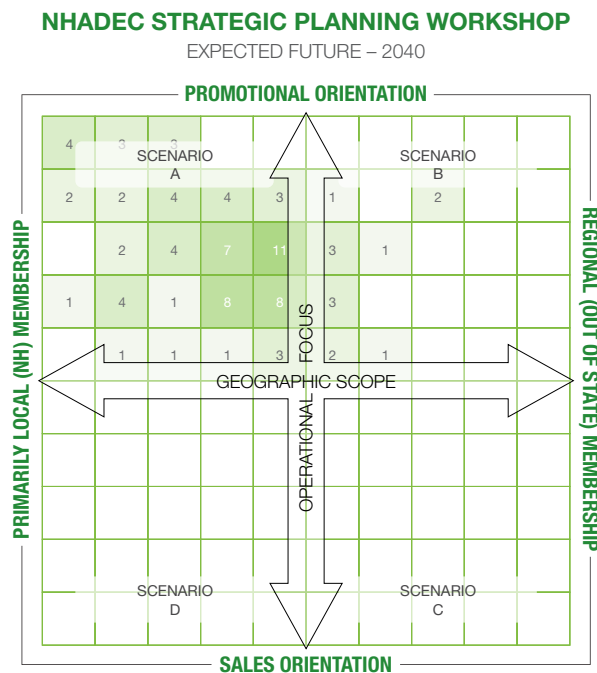


4.0 PREFERRED AND EXPECTED FUTURES

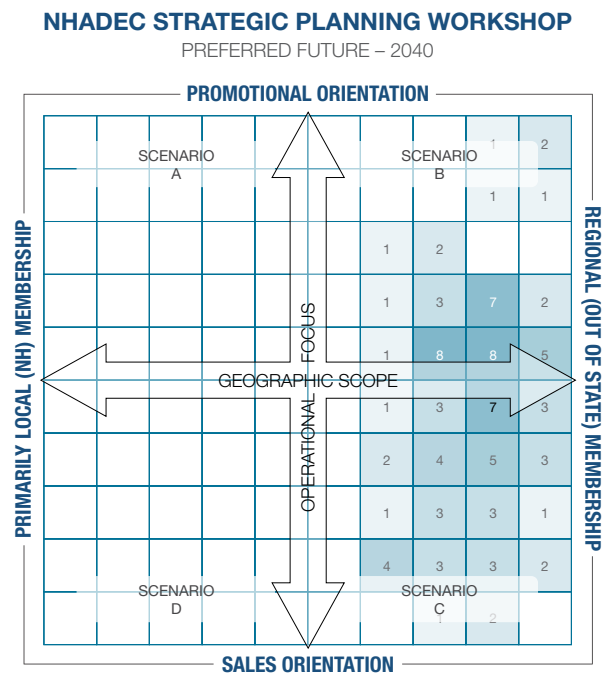
The four scenarios presented represent a range of plausible outcomes for NHADEC. Workshop participants were asked a series of questions regarding their views of the preferred and expected future. The expected future is the one they thought most likely to happen if there is no change in the current trajectory. The workshop participants indicated that Scenario A, NHADEC 2.0, would be the scenario they believed most represented the current direction of the organization.

While this scenario was viewed as plausible, workshop participants expressed a clear preference for the outcomes bordering Scenarios B and C, NEADC and NEADO.

Expected Scenario (assuming current trajectory continues):



Preferred Scenario:





5.0 NEXT STEPS

Workshop participants discussed the ramifications and implications of failing to achieve the preferred future. There was unanimous alignment amongst participants that the 'NEADC and NEADO' areas represented the preferred future scenarios, however very few people thought that was the current trajectory. The combined preferred futures 'NEADC and NEADO' outline the basis of a shared vision and strategic direction for the organization. In addition, they give an indication of the focus areas of action that will be needed for this vision to become a reality. Workshop participants discussed what they believed the next steps should be, and how they could move forward.

The axes that shape this future are increasing 'Geographic Scope' and increasing 'Operational Focus'. Because of the long-term nature of the Scenario Planning methodology, stakeholders can often see the 'distant future vision (2030)' as unattainable and unrealistic. However, this often underestimates the progress that can be made of the intervening years, and the cumulative positive impacts of change. As an example, some of the existing activities of NHADEC are already significantly shaping the future directions and actions.

The scenario framework also can help guide additional actions to inform the future, especially pertaining to building infrastructure, collaboration and capacity. NHADEC has high quality staff resources and world-class service capabilities. The challenge will be to optimize the use of these resources, especially with the anticipated expansion of the American defense budget. Continuing to connect NHADEC to existing export efforts and the ability to harness the depth of partnerships already occurring in the broader sector context will be vital. This will allow progress, even in periods of short-term economic stress, and enable NHADEC's ability to strategically plan the next five years to best serve its membership.

Towards the conclusion of the Think-Tank, participants were asked to brainstorm potential unexpected shocks that would affect strategic planning for the organization. Four concepts were identified:

1. World War III or a major world conflict
2. An increase in defense spending
3. Repeal of the Budget Control Act
4. A significant Trade War or restriction on exports

In the face of such shocks, participants felt that Scenario A would be the least resilient for NHADEC. Scenario B was determined to be the lowest risk scenario and therefore the most resilient. In terms of strategy shifts for NHADEC, participants indicated that a regional focus with an intentional membership recruitment plan would be most helpful to achieve the preferred vision scenarios.





6.0 ABOUT FUTURE IQ

Future iQ is a market leader in the development and application of scenario planning; network analysis, industry and regional analysis, and community engagement and capacity building. Future iQ specializes in applying innovative tools and approaches to assist organizations, regions and industries shape their economic and community futures. With over a decade of business experience, the company has grown to have a global clientele spanning three continents. To learn more about Future iQ, and our recent projects visit www.future-iq.com or by email at info@future-iq.com

Report and Scenario Planning workshop prepared by:



DAVID BEURLE, CEO, FUTURE IQ

As CEO of Future iQ, David specializes in creating future planning approaches for the use in regional, community and organizational settings. David has worked in the field of organizational and regional economic and community planning for over 20 years. His work in community and economic development has earned his work international, national and state awards.



HEATHER BRANIGIN, VICE PRESIDENT, BUSINESS DEVELOPMENT

Heather has an academic background in Political Science, International Relations and Education and is committed to helping people understand global interconnectedness and collaboration. She is past President and current Advisory Council member of the United Nations Association of Minnesota and has worked for over 20 years in the fields of international education and development.



7.0 NEW HAMPSHIRE AEROSPACE AND DEFENSE CONSORTIUM (NHADEC)

Founded in 2013, the New Hampshire Aerospace and Defense Export Consortium (NHADEC) is a non-profit program supported by the State of New Hampshire Office of International Commerce. The program is a promotional consortium focused on export capacity building by fostering the most opportune foreign markets for its members through collaborative efforts and global brand messaging and awareness. NHADEC programs include regular member meetings, training sessions on export compliance, domestic and international trade shows, presentations by global market experts and business-to-business matchmaking.

For more information on state support to NHADEC, please contact:



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8.0 ACKNOWLEDGEMENTS

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