

Science & Technology Committee: Action Plan

Stuart Henderson, David Bowles, Kevin Antcliff, Chris Saunders, Robert McKenna,
Jonathan Holman, Steven Gayle, Jeff Johnson, CAPT Jon Kline, Michael Maier, Evans
McMillion, Michelle Penn-Marshall, Clayton P. Turner, Dr. Eric Weisel

Aug. 30, 2020

Pandemic Impact

When the COVID-19 pandemic began it impacted the science & technology industry in a multitude of ways. Now more than ever science & technology has been in the forefront, as this pandemic is causing individuals to rely on technology much more than before. For example, teleworking has become a standard mandated by most companies due to social distancing. While the pandemic has been devastating of course, this has caused individuals in the science & technology sector to think of ways to stay ahead of the curve using the resources of this sector in order to not fall behind, and to think of ways to grow as we approach life after the pandemic.

Current state of industry

One of the major themes in this industry is the need for collaboration. In the midst of a pandemic everyone needs to come together across the board in attempt recover from this. However, specifically in the science & technology sector the need for collaboration is paramount as there are so many different resources from so many different organizations, federal labs, military presence, etc. Another theme was that of tech transfer. Tech transfer is a relevant theme but it can also be seen as a problem or challenge in this sector that our committee has identified. Tech transfer referring to the process of passing along technology from an organization to an individual.

As stated above tech transfer has been identified as a problem within this sector. A challenge that we have identified is that individuals (investors, companies, regular people) are not at a level of technology readiness with technologies that are being produced. Bridging that gap is vital, for example if investors are not ready to work with or are uncomfortable with some technologies then they won't invest in them. This goes along with the commercialization of different technologies, just making sure they are ready and available to be used by the public. Another challenge we have identified is the difficulties in sharing the stories of technological success in our region. This area has an abundance of resources and assets in this sector. Making people within our community as well as individuals outside of our region aware of these resources will go a long way as far as helping our economy. Making sure that this information gets out to the right people will also help the overall branding of the area, as that is another challenge that we have identified as a committee. Certain parts of our region have a bad stigma to it and the telling of the successes and advantages of our science & technology sector can help us overcome bad biases that some people may have.

As mentioned before this region has a large amount of assets that are unavailable in other regions, making sure that we continue to maximize these assets/resources is a great opportunity that we have going forward in this sector. Acknowledging and spreading awareness of these advantages will be an important step in recovery. Opportunities of collaboration will also prove an important step on the road to recovery. As stated before there is an incredible amount of knowledge, resources, facilities, assets, etc. that are in our region. For example, we have federal labs such as Jefferson Lab and NASA Langley who can collaborate with our military presence on technology development. Or they can collaborate with angel investors in order to help the commercialization of different technologies as this will also help with our tech transfer problem and bridging the gap of technology readiness. Furthering the development of current technologies is another great opportunity that this sector is presented with.

Our committee has agreed that there are certain instances in which technology gets developed but then the work on it is then stopped. This work can be stopped due to the limitations of the organization that is developing it or possibly due to a lack of funding on projects. The continuation of work on technologies show resiliency in our sector as we strive to not allow anything, including the pandemic slow down the amazing work being done.

One of the main things our committee identified as a way drive recovery is narrowing our scope when working on things. Science & Technology is a very large and broad spectrum covering a variety of different topics. While we would like to tackle all of the challenges and experiments that face us in this sector it is important to focus on one thing at a time to prevent from becoming overloaded. Also tackling things one by one will prove that with the proper resources and time that we can complete things to their fullest extent.

The future

The science and technology committee, led by chairmen Stuart Henderson, Director of Jefferson National Lab and David Bowles, former Director NASA Langley Research Center recognize that between their respective companies/organizations there is an investment of nearly \$1 billion devoted to science, technology, discovery, and innovation in the Hampton Roads. Other remarkable assets include NASA Wallops Flight Facility and VA Space/MARS (Mid-Atlantic Regional Spaceport). These are two very unique assets for attracting potential new businesses and as potential path for testing out new technologies on the way to commercialization in certain applications. Also, a tourist draw for watching launches that the Dept of Tourism has been involved with (Virginia is for Space Lovers). Not even mentioning other military and federal defense related investments in science, innovation, and technology represented on our committee and also in our region.

Our committee strongly believes we are in position at the front end of the idea to make an impact and to catalyze the commercialization of innovation into the marketplace. In a manner in which we can make a difference not only in our recovery of the region but also in support of our missions. We are focused on bridging the gap between early stage innovation which is internally developed to specific readiness levels, and the investor readiness levels necessary to advance the innovation and technology into the commercial marketplace.

In our sector resilience and recovery can be measured and visualized by a variety of things. First off, if the commercialization of technologies will be able to give us some insight on success in this sector. The more tech that can be made ready and available to the public the better, this shows how the region is recovering. Secondly, as more and more ideas are put into motion and completed by the separate entities in our sector that shows a level of resiliency. Proving that this sector has what it takes to continue to work and go forward regardless of the catastrophic circumstances that we are currently dealing with in this pandemic.

Recommendation: Hampton Roads developing and marketing an identity within S&T

Providing a clear and direct brand that properly acknowledges the remarkable history and incredibly promising future of science and technology in this region. The research of this science and technology in the Hampton Roads will galvanize the region to pursue a common goal of sustainable transportation together.

With the wide range of technologies being developed in our region, it is imperative to focus on a core area of capability and expertise. Focusing will allow for a concentrated effort on developing a collaborative enterprise that is able to reach for a common goal. Areas such as, The Silicon Valley, Motor City, Keep Austin Weird, and Space City, USA were all able to bring their respective regions to a common goal. Doing this provided a strong brand that created partnerships, new businesses, and started movements within these regions.

One area of focus could be smart and sustainable transportation. In our region we have the first and largest aeronautical lab in the US, NASA Langley Research Center, and one of the world's largest populations of military personnel, including pilots at Naval Air Station Oceana and Langley Air Force Base, Hampton Roads is in a great position to become a world leader in electric aircraft research and testing to realize the potential of true multi-modal transportation solutions by road, rail, or air. With recent announcements of the offshore wind initiative, Newport News transportation hub, and fiber ring can be set to power and connect a thriving transportation ecosystem. On top of that, the region is home to multiple regional airports that could easily and quickly pivot to offer low-cost, electric aircraft-based transportation services providing route flexibility, less traffic congestion, and reduced infrastructure hurdles for crossing the waterways of southeast Virginia.

Recommendation: Infrastructure in support if the S&T enterprise is key

Prioritizing regional and state investment in networking and communications technologies. Doing this will allow us to be prepared for a future in which communication is vital to developing, deploying, commercializing, and utilizing technology.

As the science and technology area is very competitive we can only be successful; as a region if our infrastructure supports cutting edge research and development of technology. Networking and communication infrastructure allows for big data enterprises, high performance computation and communication technology, such as the fiber ring investment, 5G technologies, public WiFi and expanded broadband service throughout the entire region.

Recommendation: Commercialization of technology and innovation

Our group/committee is focused on committing the resources around an initial, mutually agreed upon proof of concept commercialization project. This project will be focused on growth in a specific sector to move innovation forward along the continuum from idea to impact.

In order to push forward with this idea forward we need to:

- Mutually agree upon a proof of concept commercialization project
 - Internal Mission linkage, Regional Target Sectors, Commercial Value, Probability of Success, etc.
- Identify, accumulate, and contribute both direct and in-kind resources to support the project
 - Link with other recovery focus efforts
- Develop best practices and processes that are repeatable and scalable as a catalyst for future growth and technology acceleration and application
- Develop and periodically communicate key success metrics

- Build testimonials and PR strategy to tell the story of focused collaboration to drive region forward post COVID-19

We believe our innovations can make difference not just in our region but to the entire nation. We are committed and motivated to drive this process forward to that end. This effort complements other efforts to catalyze the innovation and entrepreneurial ecosystem in our region as the 757 continues to recover and move towards a more resilient economic future.

Another goal is to provide the population of our region that does not have access to certain technologies that everyone should have in our world today. For example, our committee found based on information given in a presentation by the Civic Leadership Institute (Civic 2020) that “660,000 Virginians do not have broadband access.” This can prevent this population from having basic things such as internet access and cable, which is a problem in our technology driven society today. Another strategy is having the groups/companies that develop technologies to work with investors and upstart companies in order to help the tech transfer in our region. This will also help tech projects receive the funding that they need to be completed and/or perfected so they can be used by the public.

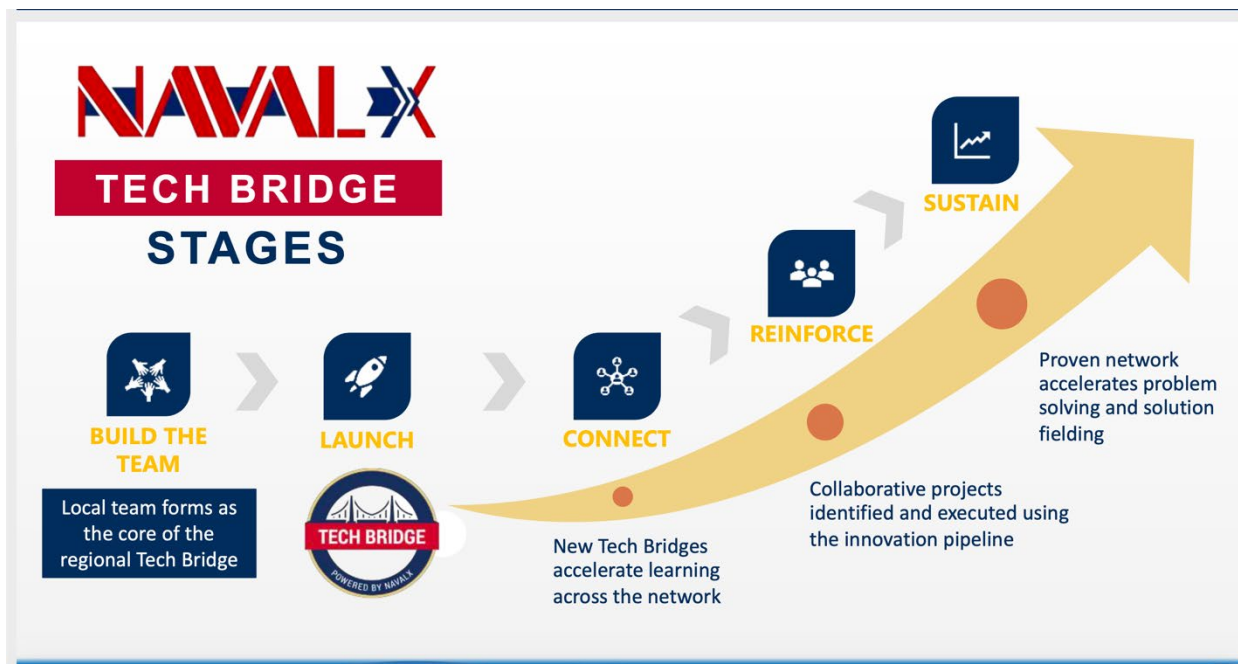
The 757 region needs support from all levels. More than just local groups, support from the government is needed. More funding is needed to be put into these technologies so they can be completed and implemented into our society. The region also needs to work on inclusivity when it comes to making its vast resources available to just the people local to the area. Also, more minorities with upstart companies, businesses, and projects need to be made aware of the resources here and given equal opportunity to access the resources.

Metrics

The budgets on science & technology based projects in the region will be a good way to identify growth. A decrease in the population of individuals who do not have broadband connectivity and other basic tech aspects that should be mandatory in our society today. The overall growth in the number of science & technology projects across the board will also show recovery from this pandemic. Also seeing innovation and more ideas coming from this sector will be another way to show growth.

Imagery

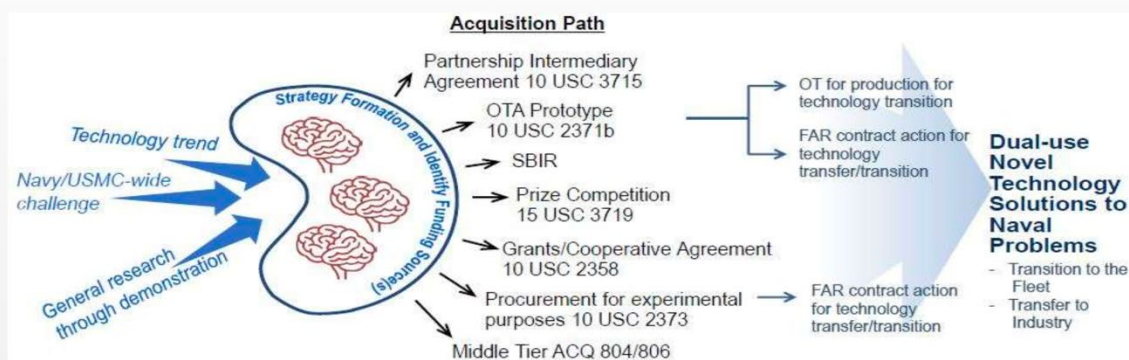
Images that fit in with this sector can be graphs that can show/track growth of things such as residents who have connectivity in our region. Another example can be images from presentations that depict and explain technological principles and concepts, as these presentations can help educate individuals who do not understand the concepts. For example, below are two images from a presentation from the Mid-Atlantic Tech Bridge Team



(Mid-Atlantic Tech Bridge, 2020)

How does the Tech Bridge work?

- Identify and assess technology trends
- Work large problem sets applicable to Naval S&T gaps
- Optimize non-FAR based acquisition methods



(Mid-Atlantic Tech Bridge, 2020)

Resources

Below is a list from the Innovation Collaborative Hampton Roads, this list shows businesses and corporations that are incredible resources for business and innovation in the Hampton Roads area.

Ecosystem Tech Company List	ODU CEI Tempo Program
1 Million Cups VA Beach	Patent Attorney Pierce McCoy Norfolk
757 Accelerate	Patent Attorney Keusey & Associates, P.C. Williamsburg
757 Angels	REaKTOR in Hampton
757 Maker Space	ReInvent Hampton Road
Arsenal	Resources for Women Owned Business
Benefits of Supporting Small Business	SBA – How to Grow Your Business
Business Incubators in VA	SBIR – STTR
Center for Innovative Technology	SCORE Hampton Roads
Chamber of Commerce HR South	SCORE Williamsburg
Chamber of Commerce HR Peninsula	Sea Level Rise
Chamber Small Business Development Center	Small Business Loans HR
Colleges and Universities in Hampton Roads	SourceLink Virginia
Concept to Commercial Video Series	Startwheel
Core Value Software	Start Up Business Resources Tool
Entrepreneurs Organization SE Virginia	Tech Transfer (not endorsed, just listed)
EO Accelerator	Transportation Research Institute
Go Virginia	VA Aerospace Business Association
Hampton Roads Economic Development Alliance	VA Community Economic Network
Hampton Roads Innovation Collaborative	VA Economic Development Partnership
HR Cyber	VA Offshore Wind 1
Innovation Commercialization Assistance Program (ICAP)	VA Offshore Wind 2
Jefferson Lab Tech Transfer	VEDP Growth and Export
Microsoft Small Business Academy	VA Resource Guide
NASA Technology Transfer	VA Space Grant Consortium
National Modeling and Simulation Coalition	Virginia Tech – Hampton Roads Centers
NovaEd On-Line Entrepreneurial Training	Virginia Unmanned Systems
ODU Center for Enterprise Innovation	VMASC

(Lee, 2020)

References

- Benda, W., Daniels, M., Garrison, B., Gutierrez, J., Harris, B., Holmes, R., . . . Williams-Byrd, J. (2020). *Broadband: Advancing Economic Performance through Expanded Connectivity* (pp. 4-9, Rep.). Norfolk, VA: Civic Leadership Institute.
- Hanvey, B., Stark, J., Boyd, S., & Wilde, M. (2020). *Mid-Atlantic Tech Bridge* (pp. 8-9, Rep.). Norfolk, Virginia: Mid-Atlantic Tech Bridge.
- Lee, J. (n.d.). Tech Ecosystem. Retrieved August 30, 2020, from <https://technologyhamptonroads.com/tech-ecosystem/>