



INNOVATION BLUEPRINT
for the Greater Roanoke & Blacksburg Region

THE ROANOKE-BLACKSBURG REGIONAL INNOVATION BLUEPRINT

CREATING HIGH IMPACT JOBS AND BUSINESSES
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THE ROANOKE-BLACKSBURG REGIONAL INNOVATION BLUEPRINT 1.0

Our regional economy is poised for growth. In a global market where innovation, talent, and entrepreneurial culture matter, the Roanoke-Blacksburg region has many of the key ingredients needed to succeed in the 21st century economy: world-class higher education, attractive amenities, and critical infrastructure needed to support the start-up and growth of technology-based businesses. Yet, being poised for growth is not enough. We need to act—to proactively and effectively capitalize on opportunities that come from having a network of well-connected assets, organizations, and resources. While this may not be easy, the time is right and the consequences of inaction are significant.

The Roanoke-Blacksburg Innovation Blueprint is a roadmap for building and connecting our assets to help grow jobs and provide ongoing economic opportunities by engaging the region's business and civic leadership in a focused and collaborative fashion. The Blueprint is focused on high growth, high impact industries, a subset of businesses that have significant spillover to other parts of our economy—industries such as our advanced manufacturing and materials sectors, our energy and transportation firms, our bio and life science clusters, and our information technology and media companies.

The initial conversations behind this effort began in late 2010 when a small group of community and business leaders came together to address a pressing question: what can we do to better position our region to prosper in the

innovation driven economy of the 21st century. These early discussions developed a consensus around two broad themes:

- *We're all in this together!* On their own, neither Roanoke nor the New River Valley has sufficient scale and assets to build a strong innovation economy. But, together, we can capitalize on important assets.
- *Smart targeted investments can have large ripple effects.* If done right, a targeted set of new investments and new regional strategies can produce far-reaching changes.

During our discussions, many in our group noted that our region's multiple technology-focused assets, such as the array of higher educational institutions and technical talent, were not being effectively leveraged and translated into a stronger regional economic performance. For instance:

- Regional growth rates in small businesses fall below state and national averages.
- Overall economic growth also lags state and national benchmarks.
- Our region falls in the bottom half in rankings of America's top performing large and small metropolitan areas.
- Our region has no firms listed on the annual Inc. 500 ranking of the nation's fastest growing firms. Only three local companies appear on the larger Inc. 5000 listing.

The Innovation Blueprint effort seeks to address this disconnect, but not by simply studying the problem. We hope to trigger a transformation that differentiates Roanoke-Blacksburg from the many other U.S. regions trying to claim innovation crowns. What can set us apart, we believe, is how we go about implementing an

innovation blueprint. We have the capacity, by connecting and leveraging unique local assets, to become known as a region that is smart and focused in its innovation, as well as one that is agile in responding to transformative ideas. This operational overlay will help guide the blueprint process going forward.

THE INNOVATION BLUEPRINT STATEMENT

Our **vision** of the Roanoke-Blacksburg region is one where:

- *Local residents can effectively start and grow technology ventures.*
- *Leading educational institutions and key businesses are close partners in commercializing technologies and fostering a strong workforce.*
- *Talented people from around the world want to live, work, and play.*
- *Community leaders “get it,” i.e., they understand that our future prosperity depends on fostering a culture of innovation in all parts of the region.*

Our **goal** for the Innovation Blueprint is two-fold:

- 1) To build a robust regional innovation ecosystem that creates high-paying quality jobs and high impact economic opportunities.*
- 2) To become a nationally and globally recognized hub for regional innovation.*

We will achieve this goal:

By committing and aligning the region’s energy behind support for innovation and entrepreneurship.

WHAT IS BLUEPRINT 1.0?

The name—Roanoke-Blacksburg Innovation Blueprint—is intentional. The use of “Roanoke-Blacksburg” reflects the compelling regional focus for this work. Neither community can fuller prosper alone, but together, our capacity to support regional innovation is stronger.

“Innovation” is our primary focus. This work does not seek to create a new approach to economic development or create another new organization. We are primarily concerned with building a more robust innovation ecosystem in

the region. Our recommendations are focused on building a more supportive climate for technology-based businesses, for research and development activities, and for the region’s science and technology-focused workforce. These ideas touch on economic development, workforce development, and education, and are primarily intended to reinforce and support—not replace—many excellent ongoing initiatives.

Finally, this effort is a “blueprint.” It is designed to drive action and is not based on a complete re-examination of the region’s strengths, weaknesses, opportunities or challenges. Our region has sponsored a number of studies that look at key industry clusters, workforce needs, and strategies for economic growth. These studies provide a solid base of evidence on current trends in the local economy. They have identified the region’s assets and competitive strengths, as well as gaps in the regional innovation ecosystem. We are not seeking to produce more research; we seek action! We intend to build on the insights developed by past research and ongoing analyses as part of a region-wide effort to build a stronger regional innovation ecosystem. This report is the initial “blueprint” for that work.

WHY NOW?

While the Roanoke-Blacksburg Innovation Blueprint is a new initiative for our communities, we are not alone. Regions around the U.S. and the world are engaged in similar exercises and discussions. As one local example, the Appalachian Prosperity Project recently published its own “Blueprint for Entrepreneurial Growth and Economic Prosperity in Southwest Virginia.” Other regional innovation initiatives are underway or have recently been completed in Raleigh, Northern Virginia, and Richmond. Similar efforts are underway in other key Virginia regions and across the country.

A number of different terms, models and approaches are being used. Concepts like technology-based economic development (TBED), innovation-based economic development (IBED), regional innovation accelerators, industry cluster development, and numerous others are regularly promoted and pursued. While each approach has its own nuances and unique characteristics, they all share similar goals. They are seeking to promote the “flow of technology and information among people, enterprises, and institutions” as a means to generate new ideas and innovations. In turn, these ideas can be converted into commercial opportunities, leading to new and better jobs and new wealth creation.

Researchers have coined the term “innovation ecosystem” to describe this desired end goal. Ecosystem is an appropriate term as it captures the complexity of this process and its constant evolution. Innovation occurs in countless ways and new ideas and opportunities emerge from interactions with researchers, with customers, with business partners, with neighbors, and the list goes on. Innovation can come from anywhere, and successful regions foster environments where “innovators” can easily connect, network, learn, and do business together.

BUILDING AN INNOVATION ECOSYSTEM THAT SUPPORTS ECONOMIC VITALITY

The complexity of innovation ecosystems also suggests that there is no “one best way” to support these efforts. This is not a simple process of creating new government programs, university initiatives, or new organizations to instantly transform the region. Organizations do

matter, especially when they help build strong regional networks. However, it is the network itself, not its component parts, that truly matters.

Strong innovation economies occur when key networks help to leverage resources and optimize economic benefits. In other words, it takes a robust innovation ecosystem – one that **builds** assets that are critical to economic competitiveness, that **connects** assets in order to seize opportunities, and that **engages** diverse partners and audiences to share the region’s story.

Build Assets

Innovation assets are the core building blocks of a regional innovation ecosystem. Each region has its own unique sets of local assets that emerge from natural attributes, historical legacies, and other factors. For example, because of the presence of world-class colleges and universities, Roanoke-Blacksburg enjoys an asset desired by many regions: a strong base of well-trained technical talent. These assets, necessary to support our innovation ecosystem, fall into five primary categories.

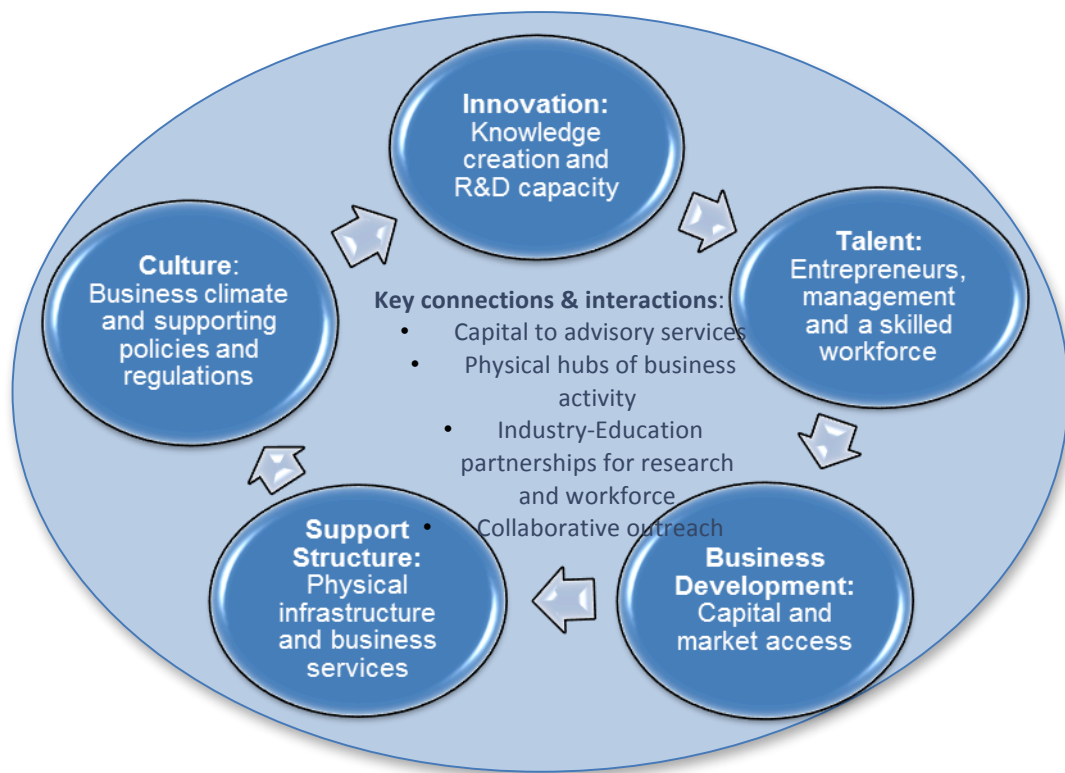
- **Innovation:** A region’s research and development (R&D) capacity and ability to commercialize new discoveries.
- **Talent:** The entrepreneurs, experienced management and skilled workforce necessary to grow high impact companies.
- **Business development:** Access to capital and markets, especially early-stage capital that can accelerate and scale businesses to a competitive level and create quality jobs.
- **Support structure:** The physical infrastructure and business services that enable businesses to be successful, including hubs of activity that stimulate a dynamic business environment.
- **Culture:** Public attitudes and perceptions, along with the governmental policies and regulations that encourage economic development.

Connect Assets to Opportunities

These economic assets do not operate in isolation. They are interconnected in multiple ways. Many regions succeed in creating some local assets in each of these areas. They might be home to a few world-class companies, some small pools of investment dollars, a business-friendly government, and a strong local university. Yet, if these institutions and assets are poorly connected, their impacts on the local economy and new economic opportunities will be limited.

An effective innovation ecosystem fosters these connections, and builds stronger regional networks. In Roanoke-Blacksburg, we see several key connection points where we can better link local assets, resources and expertise. These connection points, highlighted in the figure below, are all targeted on issues and challenges that are major impediments to regional innovation. They include:

- How can we better connect local businesses to the good ideas generated at local universities and research centers?
- How can we bring more sophisticated support services to help local entrepreneurs grow their companies?
- How do we better connect local residents to new training opportunities and new technology-related careers?
- Where and how can we connect local businesses and local innovators?
- How do we attract talent from outside the region to help grow local innovation capacities?
- How do we create new pools of seed capital to complement other regional business financing sources?



Engage Diverse Partners and Audiences

This ecosystem building process requires engagement both within the region and with partners located outside the region. We need to tell our story at home and in national and global markets where local companies connect. The Roanoke-Blacksburg region is a hidden gem. The region is home to an amazing concentration of higher education institutions, along with leading edge research and top tier companies. The region has a high quality of life while being an affordable place to live. This type of environment is unusual for a region our size and offers unique opportunities if we are smart and highly focused on economic strategies that provide the greatest return on investment.

The Innovation Blueprint calls for a comprehensive strategy to raise awareness and communicate our story in a manner that complements the recruitment efforts of regional economic development organizations. This communication strategy will provide a central information hub that combines assets from the Roanoke and New River Valleys, and focus outreach on targeted industries and talent. We plan to engage diverse partners and audiences and intentionally share the region's story so that, over time, the Roanoke-Blacksburg region becomes known as one of the great places to start and grow a high impact company.

HOW DOES OUR REGION STACK UP?

The Roanoke-Blacksburg Innovation Blueprint effort was driven by our belief that many essential innovation assets are already here. Our challenge involves creating closer connections between these assets, and addressing a few areas where local assets and resources are insufficient.

Our research and review of past regional studies (listed in Appendix 3) helped to identify assets that are in place, assets that need enhancement, and assets that are missing or underutilized. Areas of **regional strength** included:

- Strong research talent, labs, and start-up facilities, with the ability to attract federal research funding
- Higher education institutions and associated talent
- High quality of life and moderate cost of living that retain talented people once they are here

- Significant number of strong support programs for business and cluster development

Some of the biggest **regional challenges** included:

- Attracting key scientific and management talent
- Finding start-up capital (especially seed funding)
- Connecting to networks and markets outside the region
- Need for better information sharing among partners within the region and the associated means to leverage resources and coordinate programs in order to serve more businesses and fill needed gaps in the innovation ecosystem

The table below provides a more detailed assessment of regional innovation assets, categorizing them as in place, to be expanded or better utilized, and missing.

	Assets in Place <i>Goal: Fully Utilize and Sustain</i>	Assets to be Expanded or Better Utilized <i>Goal: Enhance and Expand</i>	Missing assets <i>Goal: Develop and Connect</i>
<u>Innovation Assets:</u> Knowledge creation and R&D Capacity	<ul style="list-style-type: none"> – Multiple universities with strong R&D – Strong track record for federal grants and SBIR awards 	<ul style="list-style-type: none"> – Industry-led commercialization of university research 	<ul style="list-style-type: none"> – Consistent, effective system to vet and scale promising research, especially industry-driven research
<u>Talent Assets:</u> Entrepreneurs, management talent and a skilled workforce	<ul style="list-style-type: none"> – Professional and technical talent from the region's colleges and universities – Strong work ethic of labor force 	<ul style="list-style-type: none"> – Availability of technical and middle-skill workers – Ability to attract skilled workers from outside the region – Coordinated workforce efforts across education sectors (e.g. K-12, community college, workforce) – Emerging entrepreneurial networks 	<ul style="list-style-type: none"> – Lack of serial entrepreneurs and key management talent for start-ups and early growth phase companies – Lack of cultural diversity, especially in professional and technical fields

	Assets in Place <i>Goal: Fully Utilize and Sustain</i>	Assets to be Expanded or Better Utilized <i>Goal: Enhance and Expand</i>	Missing assets <i>Goal: Develop and Connect</i>
<u>Business Assets:</u> Capital and market access	<ul style="list-style-type: none"> – Connections to venture capital funds and markets – Top-tier companies in energy, advanced manufacturing, life sciences, transportation 	<ul style="list-style-type: none"> – Proof of concept funds, especially those that bridge university and industry commercialization – Growing angel investment community 	<ul style="list-style-type: none"> – Early stage and seed capital, especially resident capital – Capital connected to advisory and mentoring services
<u>Support Assets:</u> Physical infrastructure and business services	<ul style="list-style-type: none"> – Research Park (Corporate Research Center) – Advisory services/mentoring for early stage growth companies (in process of expanding) 	<ul style="list-style-type: none"> – Broadband capacity – Professional support services for tech-based and equity-backed firms – Physical hubs of activity that naturally connect businesses and talent 	<ul style="list-style-type: none"> – More competitive & efficient air service to the region
<u>Cultural Assets:</u> Business climate and supporting policies and regulations	<ul style="list-style-type: none"> – Low costs of doing business – General pro-business orientation of region – Diverse industry engagement in regional economic efforts 	<ul style="list-style-type: none"> – Interactions between the two economic sub-regions on economic initiatives 	<ul style="list-style-type: none"> – A coordinated focus on high impact and innovation-based economic growth – Connections to other regions (NoVA, Lynchburg, Charlottesville, etc.)

IDENTIFYING KEY ISSUES AND OPPORTUNITIES

The issues and challenges highlighted above have a familiar ring to them. These areas have been the subject of past research reports and analyses. We did not seek to produce a fresh assessment of these issues. Instead, we used them as a starting point in a search for potential solutions.

The Innovation Blueprint process began with strong private sector leadership and has been guided by a dedicated steering committee of individuals from higher education, economic development, industry and the professional community (See Appendix 1). To jumpstart the process, and keep the focus on action rather than planning, the steering committee organized working groups of key regional leaders from life sciences, technology, higher

education, and economic development to address four critical pieces of an innovation ecosystem—entrepreneurial development, industry clusters, talent and culture. Each group was charged with developing and recommending to the Steering Committee specific action items that would become the key elements of an Innovation Blueprint for the region. The focus was on identifying actions that could produce measurable outcomes over the next 2-3 years.

Throughout the fall of 2011, each working group—with 10-15 participants—met at least three times to delve more deeply into their topic. These strategy sessions were augmented with best practice research and facilitation support provided by the EntreWorks Consulting

team. To emphasize the regional nature of this work, each group was guided by two co-chairs—one from Blacksburg and one from Roanoke. A full summary of the recommendations from each group can be

found in Appendix 2. The highlights of desired outcomes and key issues and opportunities from each group are as follows:

NURTURING ENTREPRENEURSHIP

Desired Outcome: To identify concrete action steps that can be taken to build a stronger entrepreneurial support system for high growth entrepreneurs in the region.

Key Issues/Opportunities:

- Most major research universities do not have incentive systems in place to encourage faculty and students to engage with entrepreneurs, making it challenging for entrepreneurs to access resources from Virginia Tech.
- Entrepreneurs in the region often have difficulty finding the right resource at the right time; what is needed is more than simply a listing of resource providers—there needs to be a way to turn this information into knowledge so that entrepreneurs can find resources when they need them and from sources that they trust (most often, other entrepreneurs).
- The region could have stronger formalized systems for connecting entrepreneurs to mentors and peers. Entrepreneurs value these relationships, but they find that it is not always easy to get connected with someone, particularly in your industry or sector. Local efforts like VT KnowledgeWorks and the 460 Angels are making important progress. These efforts should be supported and expanded.
- The region needs to build a start-up culture which may come from increasing the density of start-ups in the region and creating a critical mass of activity that can begin to shape the culture.
- The region needs new models and approaches that governments and local elected officials can undertake across the region to make it easier to “do business” in their midst.

ENERGIZING EMERGING CLUSTERS

Desired Outcome: To create a business environment that enhances the commercialization of research, and grows competitive, high value industry clusters.

Key Issues/Opportunities:

- The region is home to later stage equity capital investors; however, it lacks early-stage or seed capital to launch new companies.
- There is a shortage of experienced or “bankable” CEOs and management talent in the region, inhibiting the growth of early stage companies.
- While the region has been expanding the range of local advisory services for innovation-based businesses, most services are not well connected to capital sources, thus limiting the efficiency of start-up capital and the ability of entrepreneurs to access capital.

- Resident businesses do not fully utilize the R&D capacity at higher education institutions in the region; the region lacks a systematic approach for these companies to connect to R&D resources or to develop joint R&D projects based on industry-driven needs.
-

DEVELOPING TALENT

Desired Outcome: To identify ways that the Roanoke-Blacksburg region can improve its abilities to attract, retain, and grow the talent needed to support the growth and prosperity of local businesses focused in technology sectors and other innovation-related industries and activities.

Key Issues/Opportunities:

- While the region boasts a high quality of life and moderate cost of living, regional industry leaders report difficulty attracting top-level managerial and technical talent.
 - Even though the region has an array of manufacturing jobs and an abundant workforce for manufacturing positions, companies still have difficulties finding workers with up-to-date technical capabilities for middle skilled jobs.
 - Local residents are unaware of local career opportunities in technology related fields and effective career pathways that engage education and business leaders are lacking.
 - The region needs to start early to get kids and parents excited about science, technology, engineering and mathematics (STEM) issues and careers, beginning in the middle school years, with a targeted focus on engaging girls and minority students in these learning opportunities.
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BUILDING AN INNOVATION CULTURE

Desired Outcome: To develop models for building a sustainable innovation culture in the region that includes having residents, companies and leaders who understand the connection between innovation and economic prosperity and are willing to support the concepts and approaches that will strengthen the region's innovation ecosystem.

Key Issues/Opportunities:

- The Roanoke-Blacksburg region does not have a strong reputation as a hotbed for innovation and entrepreneurship; perception, right or wrong, is reality.
- Innovative regions are home to residents and leaders who understand the links between innovation and economic prosperity, and who are open to new ideas, concepts, and approaches; building this understanding will require targeted awareness efforts in the region.
- Local residents may be unaware of many innovation and entrepreneurship-related assets that are already in place and, as a result, may fail to pursue local entrepreneurial, training, or career opportunities; this understanding requires building greater local awareness of innovation, technology, and entrepreneurship-related activities and assets.
- An innovation culture can be built, and other regions are trying a range of strategies to do so. This work requires intentional efforts to identify appropriate access points for building awareness about the importance of an innovation culture for the region.

THE CORE FOUR – FROM RECOMMENDATIONS TO ACTION

These working group discussions generated a rich array of potential action items and policy recommendations (See Appendix 2). These materials provide a foundation for Blueprint 1.0 going forward. We firmly believe that all these ideas have merit, and we hope that other partners and stakeholders in the region consider “adopting” some of these ideas and recommendations. However, we are also conscious that implementing a long laundry list of recommendations is challenging and unlikely to prove effective. Throughout the Blueprint process, our biggest challenge came in narrowing this list of excellent ideas to a more manageable set of initial action items.

As we assessed various recommendations and potential action items, we operated with the following criteria in mind. Our priority action items were intended to meet these decision criteria.

- **Is it Doable?** Will this initiative produce tangible and measureable results within 3-5 years?
- **Is it Championed?** Does the initiative have a local “champion” who will lead and oversee the implementation effort?

- **Is it Aligned?** Is the initiative well connected to existing regional or sub-regional strategies and programs?
- **Is it Significant?** Will the initiative have a significant impact on improving local economic prosperity and net job growth?
- **Is it Opportunity Driven?** Is the initiative linked to available opportunities in the form of new public policies or outside funding?

This review process helped us identify a number of cross-cutting themes that emerged in nearly all of the working group discussions. Together they comprise the “Core Four” of the Blueprint 1.0 and provide the structure and focus as we move forward.

To focus our efforts and provide an opportunity for early wins that will build momentum and attract additional advocates and supporters, we are focusing immediate attention on the Core Four cross-cutting themes. Each of these themes is the focus of an Action Group that will build on working group feedback to undertake specific, short- to medium-term actions that will result in measurable progress toward achieving specific objectives.

THE CORE FOUR

1. *Build a **continuum of innovation talent** at all levels to support the development and growth of high impact sectors.*
2. *Create a robust entrepreneurial and early-stage growth ecosystem by **connecting capital and services** in ways that accelerate commercialization and business development.*
3. *Enable **vibrant education-industry partnerships** by strengthening partnerships among the region’s higher education institutions and effectively connecting those institutions to the region’s industry and economic development efforts.*
4. *Raise awareness of the region’s **innovation assets and opportunities** (within and outside the region) and strengthen the organizational infrastructure that supports outreach efforts.*

RECOMMENDATIONS

BUILDING INNOVATION TALENT

The Foundation for Action:

Innovative companies depend on an array of technical and scientific talent. This requires a continuum of STEM (Science, Technology, Engineering and Mathematics) related education and training to support the region's innovation-based industries.

Background:

Effective innovation ecosystems engage a region's entire population, not just a small subset of technology entrepreneurs, researchers or scientists. Like many regions, Roanoke-Blacksburg must do a better job of getting young people interested and excited about careers in science and technology. At the same time, we need better ways to connect local residents to these emerging career opportunities. Employers in key sectors like manufacturing regularly report that they cannot find workers with requisite skills, even at a time when unemployment levels remain high and many residents are hungry for work. Closing this skills mismatch will be a top Blueprint priority.

Primary Recommendations:

By focusing on STEM education, specific action plans will address two key issues identified by the working groups:

- Connect and enhance the region's STEM education and youth entrepreneurship programs in order to nurture and encourage the next generation of regional innovators.
- Strengthen the region's technical career pathways strategies, with a special focus on middle skill jobs that support the in-demand jobs in the region's manufacturing and technology industries.

ENHANCING ACCESS TO CAPITAL AND GROWTH SERVICES

The Foundation for Action:

Early stage capital and supporting advisory services are essential to launch and grow high impact industries. Currently, there is a mismatch in the region. There are advisory services for start-ups, but little capital; there is capital for later-stage companies, with fewer advisory services. This disconnect can result in the launch of new companies that quickly stagnate in terms of revenue and job growth.

Background:

There is often a "chicken and egg" scenario in the development of new companies and the expansion of young, emerging firms—the need for capital to attract talent and the need for talent to attract capital. While some new funds (such as the 460 Angels) are emerging, access to seed and early-stage capital remains a challenge in the Roanoke-Blacksburg area. This stage-appropriate capital is especially important to the technology and science-based companies that are developing new products and services which need to be vetted and brought to scale. Once a technology or product appears to be marketable, the follow-on capital in the region is easier to find.

These new and growing companies also need mentors and targeted advisory services to help them overcome operational and growth hurdles. The region is home to excellent programs that help people start new ventures, but like many smaller regions, we lack the scale and density to attract a large base of specialized consultants, investors, and other service providers. These kinds of support efforts are essential for firms that hope to achieve rapid growth and succeed in the global marketplace.

Primary Recommendations:

Increasing capital access and connecting capital to support services will enable the region to address two issues identified by the working groups:

- Establish seed or early-stage funding vehicles
 - To provide start-up capital to companies seeking later rounds of equity capital, and to provide these companies targeted mentoring and advisory services to accelerate their product and management team development.
 - To provide seed capital to companies needing more limited amounts or rounds of equity capital, along with intensive advisory services.
- Develop a system of mentoring and advisory services that will continually grow the number of “bankable” entrepreneurs.

DEVELOPING VIBRANT INDUSTRY-HIGHER EDUCATION PARTNERSHIPS

The Foundation for Action:

Regions with strong economic growth tend to have strong partnerships between industry and higher education that support the commercialization of new technologies and the development of entrepreneurial and management talent.

Background:

Industry-education partnerships are critical to growth of new and existing companies because they can help to de-risk new products and business ventures, rapidly vet technologies and scale products to a level that is attractive to investors. This takes close working relations between R&D facilities and faculty and the businesses in the region. It takes an understanding of where industry opportunities are headed and the ability to connect those opportunities to regional R&D assets.

Industry-education partnerships are also essential to the growth of the workforce—not just producing an array of workers, but helping both students and residents with entrepreneurial and management skills. Due to the presence of our local colleges and universities, tens of thousands of smart young people are introduced to our region every year. Most of these students are likely to leave the region after graduation. However, if we are able to attract and retain only a small portion of the “best and brightest,” the economic prospects for our region will soar.

Primary Recommendations:

To enhance strategic connections between higher education and the region’s industries, the Blueprint will initially focus on three key issues:

- Expand existing higher education-business partnerships, focusing on ways to tap the region’s higher education resources to enhance entrepreneurial capacity.
- Develop new cross-campus programs that engage young people while they attend school, as alumni, and as employees, managers, or entrepreneurs in our growing technology sectors.
- Establish a system that helps industry easily connect to higher education resources in order to commercialize new technologies, augmenting the existing technology transfer efforts of the region’s educational institutions.
 - Develop commercialization roadmaps that identify where higher education resources are aligned with R&D needs of resident industry clusters.
 - Establish commercialization roundtables for targeted industry clusters that can assemble the appropriate expertise to help vet and de-risk opportunities identified in commercialization roadmaps.

RAISING AWARENESS OF THE REGION’S INNOVATION ASSETS AND OPPORTUNITIES

The Foundation for Action:

Maximizing economic opportunities requires more than a strong set of assets—it requires awareness of those assets inside and outside the region, and a collaborative approach among organizations to effectively capitalize on those opportunities.

Background:

Despite the presence of important local assets, the Roanoke-Blacksburg region does not have a strong reputation as a hotbed for innovation and entrepreneurship. This perception (or misperception) manifests itself in two primary ways. Outsiders sometimes perceive that the region lacks a deep and wide base of business and career opportunities. As a result, recruiting top management talent and those with in-demand technical skills can be a challenge. Meanwhile, local residents may not understand or recognize the many innovation and entrepreneurship-related assets that are already in place. Because they are unaware of these local assets, they may fail to pursue local entrepreneurial, training, or career opportunities.

Increased awareness begins with an accounting of the region’s assets, across both valleys. Bringing this regional information together into a coordinated ecosystem “map” would make it easier for residents and non-residents to get a landscape view of support resources. And, it would make it easier for stakeholders in the ecosystem to see the overlaps and the gaps. Making that information portable—virtually accessible any place, any time—would help increase both access and the image of the region as a place ready to respond to any innovation opportunity.

Primary Recommendations:

The region’s great business opportunities remain “our best kept secret,” and Blueprint 1.0 should seek ways to address these misperceptions. The objective of this strategy is to promote greater awareness of the region’s innovation assets and sectors in order to grow the region’s talent base and its high-impact industries. Action plans will focus on two key issues identified by the working groups:

- Develop the tools and infrastructure (e.g. a collaborative website and innovation asset virtual “thumb drive”) to market the region’s innovation assets and high impact industries.

- Organize collaborative outreach efforts among regional organizations to effectively leverage limited marketing resources (e.g., collaborative career fairs and employee recruitment campaigns.)

HOW WILL WE MEASURE SUCCESS?

While Blueprint 1.0 is action-oriented, these actions all share a wider goal of building a stronger regional innovation ecosystem. As described above, this ecosystem helps to **build** assets that are critical to economic competitiveness, **connect** assets in order to capture opportunities, and **engage** diverse

partners and audiences to share the region's story. So, how will addressing the key issues identified for each Action Group help us make progress on building this ecosystem? The table below relates each of these action items to the key components of the ecosystem.

RECOMMENDATIONS	BUILD	CONNECT	ENGAGE
Connecting and enhancing region's STEM education & youth entrepreneurship programs	X	X	
Strengthening region's technical career pathways strategies, with focus on middle skill in-demand jobs in region's manufacturing & technology industries	X	X	
Establishing seed or early stage funding vehicles	X	X	
Connecting advanced advisory services & early stage funding to vet & scale technologies & develops management talent required to grow	X	X	
Establishing mentoring programs to develop bankable CEOs	X		
Expanding existing higher-education – business partnerships, focusing on tapping region's higher education resources to enhance entrepreneurial capacity	X	X	
Strengthening regional industry's ability to connect to higher education for R&D & product development assistance	X	X	
Developing tools & infrastructure (e.g. a collaborative website and innovation asset thumb drive) to market the region's innovation assets & high impact industries		X	X
Organizing collaborative outreach efforts among regional organizations to effectively leverage limited marketing resources		X	X

Each of the Action Groups will be charged with developing a set of success measures associated with their work. In some cases, those measures are straight forward—the creation of new infrastructure to build regional awareness, for example, where none existed before. In other cases, we will need to measure the strength of new partnerships and collaborations that form—between business and higher education, between regional organizations, and so on. While each action plan currently under development will establish specific milestones and measures, together the actions are intended to move the needle on critical economic measures. These include:

- The **start-up rate for** innovation and high impact **companies**
- The **rate of job creation** in targeted, high-impact industry sectors
- The level of **educational attainment** of the region's residents
- **Participation rates in STEM** and entrepreneurship education in K-16
- The amount of **equity capital** that is invested in regional businesses
- The rate by which **new ideas and products** are brought to market

These quantifiable metrics will be augmented by a set of more qualitative measures that **track the creation of new networks, infrastructure and partnerships that enhance regional collaboration** and lead to a blueprint effort that is more effective than a set of individual programs.

We want to be accountable to each other and to the region as we move forward so it will be important that we measure our success along the way. Measuring our progress and our success is important because just like any plan, this one will be reviewed and adapted over time so that it continues to be relevant as we build our region's innovation ecosystem.

WHAT HAPPENS NEXT?

The members of our small group all share a belief that our region has the capacity to become a leading technology and innovation center that is recognized and respected in Virginia, in the Southeast, in the U.S., and around the globe. We also share a commitment to investing our time and resources into making it happen. We all recognize, however, that we cannot do it alone. We need a wider network of partners to help develop and implement an innovation action plan that is compelling, significant, and leads to tangible, measurable changes in the region's environment for innovation.

Our Steering Committee is designed to “get the ball rolling” by setting the initial contours of the blueprint and then encouraging others to support and ultimately improve on this work. We intend to organize the project around the Core Four Action Groups described here. While we are committed to the common vision represented in Blueprint 1.0, each Action Group will have its own separate membership, composed of relevant stakeholders and local experts, and will develop its own detailed action plans including clear timelines, milestones, and systems for reporting progress to the wider community. Most importantly, each group will assume primary responsibility for ensuring that the action plans are implemented!

We are committed to tracking our results and reporting on the measures of success on a regular basis so that the process is transparent to all key stakeholders. Our initial efforts to “keep score” will take the form of quarterly progress reports that will be publicly released every three months beginning in September 2012. These reports will be posted at the Roanoke-Blacksburg Technology Council's Innovation Blueprint website: <http://thetechnologycouncil.com/blueprint>.

Each Action Group will highlight areas of progress, areas of promise, and areas of concern. We hope that every group will succeed in every one of its endeavors, but we also understand that 100% success is unlikely. Via this tracking process, we hope to share success stories and also allow for mid-course corrections when needed.

This effort is designed to make something happen. Our end game is to spur action so that we can point to real, tangible impacts as a result of this work. If we are successful, the region will become recognized as a place where entrepreneurs can start businesses, easily gain access to needed support and partnerships, and where they can build their companies into world-class ventures that can compete and win in national and global markets.

This laudable goal cannot be achieved overnight. We will regularly convene events to assess progress, make mid-course corrections if necessary, and, hopefully, celebrate success. We hope you will join us on this important journey.