



NORTHEAST ADVANCED TECHNOLOGY PARK

Background Information

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STILETTO **Northeast**
community college

About the Region: Northeast Nebraska

CHALLENGE

Northeast Nebraska faces a declining rural population that struggles to compete with larger metropolitan areas for new businesses. Traditionally, the economy has been heavily reliant on agriculture as its main source of economic sustainability and growth.

Modern agriculture has seen a dramatic increase in labor efficiency, as well as industrial efficiency, which has led to a dramatic decrease in the number of jobs required to maintain a high level of productivity.

This has led to a decrease in opportunities for small-to-medium-sized communities in the region to maintain and grow its population base.

The region must reinvent itself in order to reverse current trends and join what economists refer to as the knowledge economy.




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COMPETITIVE ADVANTAGES

Northeast Nebraska is a great place for employers to locate as it provides a competitive workforce with relatively low labor costs compared to most metropolitan areas in the region and beyond. The cost of living is significantly lower compared to some of the more known technology hubs in America. For example, the median home price in San Francisco, California is \$1,600,000 while the median home price in Norfolk, Nebraska is \$160,000 (Zillow).

Employers that wish to remain globally competitive need to keep their labor costs at a reasonable level and they can do so by locating in Norfolk. Employers can also take advantage of the skills and talents of the 7,000 students that attend Northeast Community College each year.

A photograph of a man and a woman standing outdoors. The man is wearing a red and white plaid shirt, blue jeans, and a black baseball cap with a logo. The woman is wearing a dark polo shirt and light-colored pants. They are both looking at a tablet held by the man. The background shows a large stack of blue corrugated metal sheets on the left and a blurred outdoor setting with a fence and trees on the right.

Northeast Nebraska is a great place for employers to locate

Northeast Advanced Technology Park

A proposed solution to the challenges facing Northeast Nebraska is to foster innovation through an encouraging environment and focused institutions. In particular, for over six decades technology parks have been shown to act as catalysts for transforming traditional economic landscapes into something more. Therefore, Northeast Community College proposes the establishment of an Advanced Technology Research Park at Northeast, which will have all of the right ingredients to fuel this transition, as agreed by experts (the Association of University Research Parks, AURP).

WHAT IS A TECHNOLOGY PARK?

According to experts, a technology park is a property-based venture, which:

- Has a master plan that supports the strategic plan of the academic institution and is designed for applied research, workforce development, and commercialization.
- Area of focus/specialization that aligns with the institution's strengths and positions the institution as a leader.
- The park is a means to attract and grow businesses within the region.
- An active channel of engagement with past, existing, and future students.
- Drives technology-led economic development

According to the report *Driving Regional Innovation and Growth* prepared by Battelle's Technology Partnership Practice, "University research parks provide a best practice means of focusing on innovation and sustaining economic competitiveness. According the National Research Council in its study of research park best practices:

Research parks are seen increasingly around the world as a means to create dynamic clusters that accelerate economic growth and international competitiveness. They are widely considered to be a proven tool to encourage the formation of innovative high technology companies. They are also seen as an effective means to generate employment and to make existing companies more competitive."

Technology Parks Help Create & Foster Technology-Related Jobs

One of the fastest growing job fields over the next decade is projected to be the technology jobs in both traditional and non-traditional sectors (U.S. Bureau of Labor Statistics).

The growing demand for technology related jobs as well as a disruptive knowledge economy that will require the workforce to change jobs more than 12 times in their lifetime is a perfect opportunity for a technology park to foster new business growth as well as provide new skills to the workforce through hands on training and internships (National Longitudinal Survey of Youth).

Technology parks have been proven to significantly contribute to local economies and workforces. For example, an economic impact study done for the research park at the University of Illinois at Urbana-Champaign revealed that in 2015, the park has created 2,926 jobs in the region. Of that, 1,618 were employed in the park, with 1,285 working in Professional and Technical services, 168 working in Educational Services, and 165 working in Accommodations.



CONCEPT



A technology park that will be a **“community of innovation” – a live, work, play, and learn environment that supports and attracts established, emerging, and start-up companies.**

High-quality space, facilities, and educational programming geared to stimulate and manage the flow of knowledge, collaboration, and applied research amongst students, educators, technologists, entrepreneurs, and various business sectors to catalyze the creation and growth of talent, jobs, employment, and innovation-based companies.



Land and possibly facility space will be leased to businesses and organizations to **stimulate the development of entrepreneurial, knowledge-based enterprises to diversify northeast Nebraska’s economy.**



Will **connect faculty and students with businesses and industry**, which will leverage the local area’s talent and greatly advance the economy of northeast Nebraska and beyond.



A regional community project: non-profit public-private partnership between Northeast, non-profit applied research and development institutions, entrepreneurs and start-ups, and private companies.



Will use **environmentally and economically sustainable development** that embraces best practices and “green-built” principles.



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VISION

To be a sustainable, integrated ecosystem of innovation for the development of advanced and applied technologies in four priority focus sectors: agriculture, water, energy/sustainability, and advanced technologies.

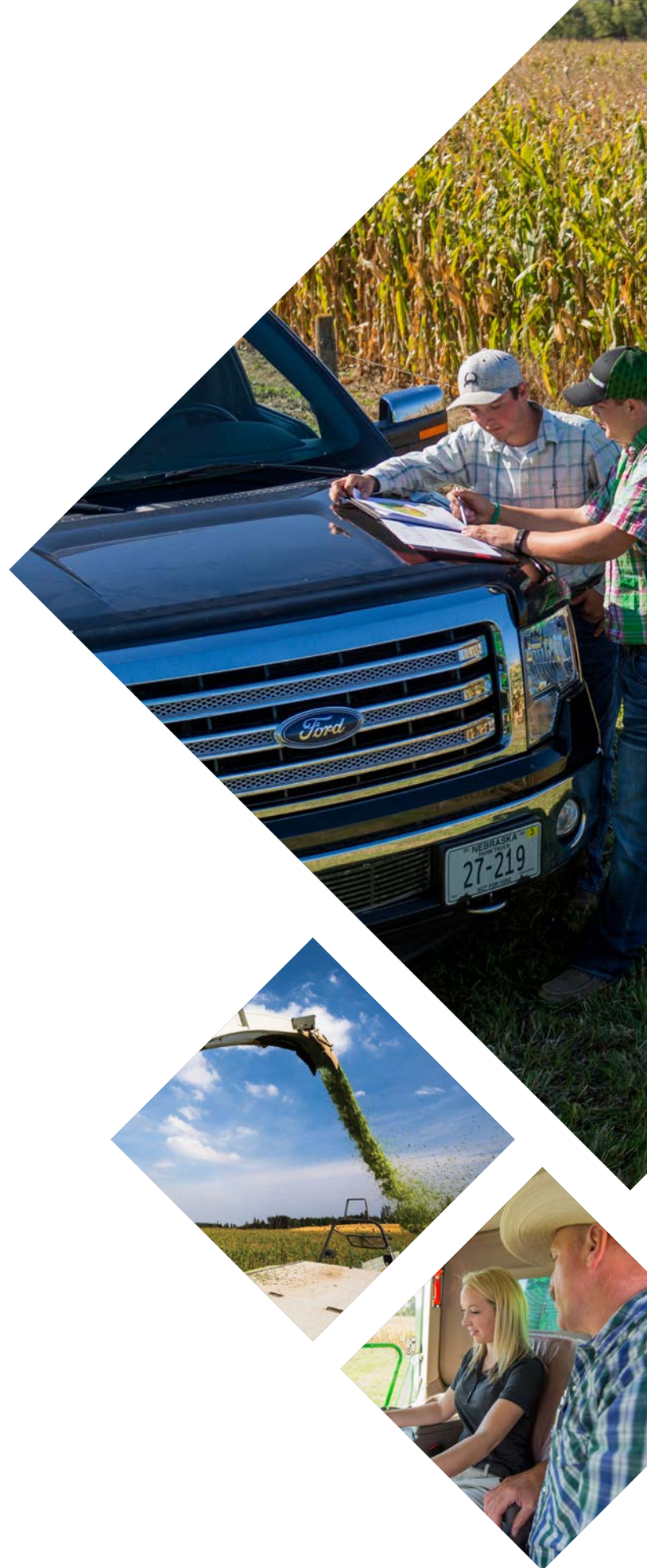
FOCUS

The sectors of focus will be in agriculture, water, energy/sustainability, and advanced technologies.

Why Agriculture?

With the world population expected to grow to 9 billion by 2050, food production must increase by 70%. Unpredictable weather patterns and increasing temperatures can have a significant impact on livestock and crop production. **It is therefore of critical importance to innovate farming and agriculture to ensure the safety and security of our food chain.**

Northeast Nebraska is a great place to propel this innovation. The impact of Nebraska agriculture is large and goes beyond crop and livestock production. It provides people with jobs, significantly contributes to the economy, and as “the bread basket of the world,” feeds many. One out of every two jobs in northeast Nebraska is related to agriculture, 63% of the total gross regional product in northeast Nebraska comes from the agriculture industry and 92% of Nebraska’s total land area is used by farms and ranches for production purposes. Ranked 5th among the 50 states, Nebraska agriculture is valuable to growing the nation’s economy and feeding the world population.





Why Water?

Water is one of the most important elements of life on planet earth, making water safety, security, and availability crucial. **Agriculture has a complex relationship with water:** water insecurity can have a significant impact on livestock and crop production, and yet agriculture accounts for about 70% of global water withdrawals.

Given the importance of agriculture to Nebraska, it is clear that water safety, security, and availability are top priorities. Water is also an essential component to every part of Northeast's agriculture curriculum including optimizing usage, water regulations, water management, water law, runoff and water quality, and climate changes.



Why Energy/Sustainability?

In an increasingly digitized world, energy is becoming a critical resource as the fuel that powers it all. To accommodate the increased demand for energy, energy sustainability including security, management, and diversification has received increasing investment.

The Omaha World Herald reported in 2017 that **“Nebraska’s wind capacity is fourth-best in the country when it comes to the potential for producing electricity, but the state lags behind 16 others when it comes to actually tapping that resource.”** Northeast is a strong driver in changing this reality, offering programming focused on wind and other sustainable energy sources, training students with higher skill level to be more successful in the workforce.

Why Advanced Technologies?

As the World Economic Forum published, “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before [...] a Fourth Industrial Revolution [...] is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.”

Advanced technologies such as the internet of thing (IoT), artificial intelligence (AI), and blockchain are cutting across all sectors, including agriculture, water, and energy. **Northeast and Nebraska must be active players in this field to remain relevant and drive the innovation.**



In an increasingly digital world, energy is becoming a critical resource

WHY NORTHEAST COMMUNITY COLLEGE

Track Record

As a nationally recognized top ten community college (out of 1000+ colleges nationwide; Aspen Institute), Northeast Community College is poised to meet the challenge of the next economy to transform the workforce and the region that it serves.

Additional differentiators include:

- 9 out of 10 graduates stay in Nebraska.
- \$274.5 million total income added in the region.
- 4,816 total jobs supported in the region (operations spending, student spending, alumni impact).
- 3.5% of region's gross regional product (GRP).
- Track record of receiving grants from a variety of government and non-profit organizations (e.g. five-year multi-million-dollar Title III grant from US Department of Education for online and distance education programs; Peter Kiewit foundation grant to create data analytics department).

Specialty in Agriculture

- 8th highest number of associate degrees in agriculture awarded nationally.
- 500 contiguous acre farm.
- 14 applied research partners.
- 11 agriculture programs with 343 students.
- 129 associate degrees in agriculture awarded in 2018.

What Else Does Northeast Have That Others Don't

- **Designated land** and a **committed post-secondary institution** spearheading the establishment of the park and community engagement.
- The expanded **Agriculture & Water Center** – a development in progress that can be at the heart of the proposed park (which validates the focus).
- Two tenants in discussion, with additional marquee tenants to validate **opportunities in advanced technologies and energy.**
- A focus on **Experiential Learning & Workforce Development:** Northeast will be a leader in North America – which will drive student engagement and attraction.

Other Benefits:

- Nebraska has a **great track record at creating and maintaining a local, high-quality workforce:** 92% of students attending remain in Nebraska upon completing education.
- There is a **\$2.20 taxpayer return on investment for every \$1** of public money spent.
- Community colleges and their students have contributed **\$3.9 billion income to the state economy** in FY 2013.

COMPONENTS

Below is a list of potential components to be housed in the park. This list builds on existing assets, interests, capabilities, and needs within the college and the region.

Emerging Technology Innovation Center (Degree and Business & Industry Training)	Programming with industry recognized certifications, project based learning, and applied research to provide an advanced degree path that prepares students to enter the workplace or to continue on with their education
Industry Employment Program	Place students into internship-apprenticeship-mentorship models designed to train students to be effective employees for the tenants of the park as well as industry
Corporate Innovation Labs	A “real world” lab environment where its students can learn and apply their education and training hands-on
Showcase Space	Wide-open space to illustrate technological innovations of regional and national businesses including agriculture, manufacturing, industrial engineering, information technology and STEM type programming.
Conference Center	Space for business and industry events
Business & Growth Services	Provide access to business and entrepreneurial expertise to give early-stage companies a jumpstart through obstacles
Technology Makerspace	A place to gather and collaborate for peer learning to invent; provide access to tools and resources such as 3D printers, scanners, computers, and lending libraries.
Energy and Sustainability Initiatives	Purchase power from remote green sources or provide various types of green energy sources on site

TARGET OUTCOMES

As previously mentioned, Technology Parks are a catalyst for technological and economic growth, particularly when there is a focus on specific innovative technologies. The Advanced Technology Park will have strong ties to the College, and a focus on agriculture, water, energy/sustainability, and advanced technologies – which positions it well to foster an increase in:

- Growth and transformation of technology-based educational programming;
- Growth of existing companies;
- Attraction and creation of new companies;
- Commercialization of applied research;
- Creation of new, high-paying jobs; and
- Retention of homegrown technology talent and income.

POTENTIAL TENANTS

The target tenant mix contains three primary market segments that the park will need to target to be successful:

- **Corporate innovation centers** that use technology, college programming, and access to students as an advantage (*40% of the target mix*).
- **Existing companies** with innovative technology ready to scale [less than \$10 million in revenue] (*40% of the target mix*).
- **Established companies** looking for truly innovative R&D operations [more than \$20 million in revenue] (*20% of the target mix*).

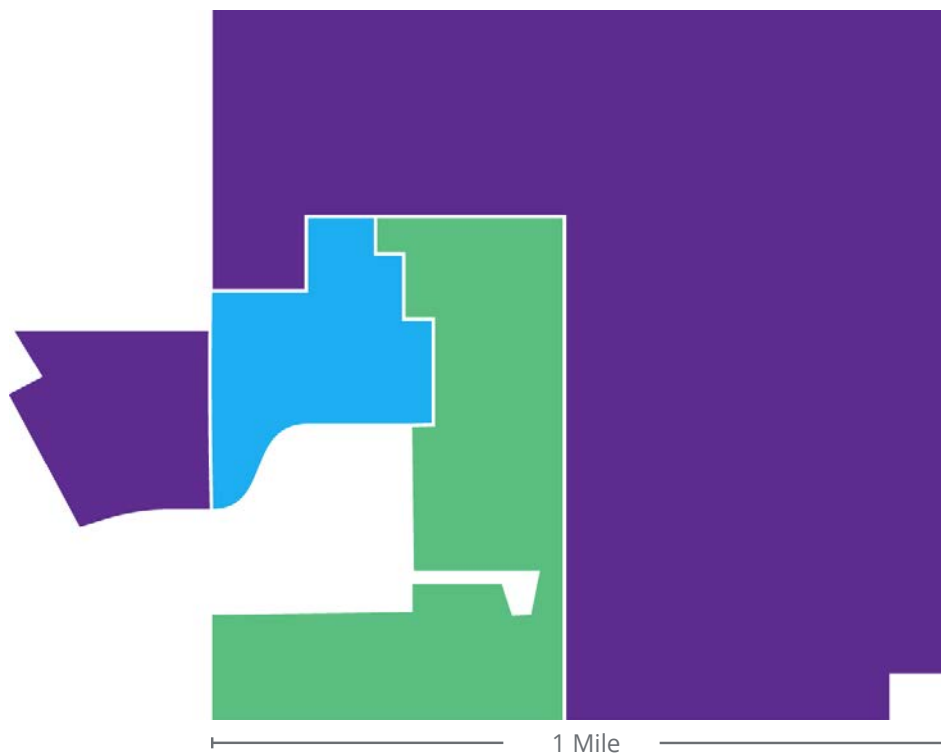
Initially, recruiting efforts should be focused on existing and established companies that can benefit from the local affordable workforce, as well as from the business collaboration that the park can provide its tenants. The park can provide developers with leased land to build facilities to lease to tenants or to build their own facilities.



LOCATION

The park will be allocated 50+ acres out of the over 800 contiguous acres where the Northeast Community College Norfolk Campus resides (Figure 1). The designated land is a combination of purchased private property and gifted land by the State of Nebraska for the intentions of a technology and applied research park.

Figure 1: Northeast Advanced Technology Park Site



1. AGRICULTURE & WATER CENTER OF EXCELLENCE

2. ADVANCED TECHNOLOGY INITIATIVES & PROGRAMMING

3. ENERGY INITIATIVES & PROGRAMMING

AGRICULTURE & WATER CENTER OF EXCELLENCE

The impact of Nebraska agriculture goes beyond crop and livestock production.

- 1 out of every 2 jobs in northeast Nebraska is related to agriculture.
- 63% of the total gross regional product in northeast Nebraska comes from agriculture.
- 92% of Nebraska's total land area is used by farms and ranches for production purposes.

Coupled with the increasing urbanization and the challenges facing traditional farming in the constantly automated and innovating world, the region must reinvent itself and join the knowledge and innovation economy.

Northeast recognized this trend and is spearheading the transition through the expansion of The Nexus – an Agriculture & Water Center of Excellence at Northeast.

The center will serve as a nexus of innovation, partnership, and success for our communities, business, producers and manufacturers.

The center will educate farmer and rancher scientists with the hands-on experience and problem-solving skills needed to meet the demands of the future. The center will explore innovative, comprehensive experiences related to crop and livestock production as well as improved conservation practices. Applied research allows students to study the most current agronomic practices and science, experiment with new technologies, and prepare for the workforce.

Additional goals for the center include:

- Development of classrooms and labs for the future.
- Innovation and demonstration of diversified agriculture opportunities.
- Examining expanded programming.
- National training and demonstration center.

The center will serve as an anchor to and will augment the proposed park.



POTENTIAL PARTNERS

There are three primary categories of partners that should be targeted to ensure the park's success. The three categories and example organizations that fit each category are shown below.

Resource Partners

- City of Norfolk
- City of South Sioux City
- Greater Norfolk Foundation
- Nebraska Public Power District

Professional, tech, and financial expertise

- Technology industry representatives
- Technology entrepreneurs
- Legal, business, financial/banking, marketing, and real estate/development resources

Economic Development

- Northeast Economic Development District
- South Sioux City Chamber of Commerce
- Action Council
- Norfolk Chamber of Commerce
- Nebraska Public Power District



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GOVERNANCE

Northeast Advanced Technology Park Ownership

Northeast Community College intends to lease the designated 50+ acres indefinitely through the park for development.

Organizational and Legal Structure

The park will require structures both for vision and decision-making as well as a to manage operations. Although it's attractive to utilize Northeast's existing structure for convenience and efficiencies in day-to-day operations, this could lead to barriers as the park tries to work "like a business" utilizing an educational/government like structure. The park needs to compete in the business world, and as such, will need to work at the speed of business.

In consideration of preliminary feedback from stakeholders and standards with other research and technology parks in the US, one **potential** model that the park may want to consider is shown in Figure 2. This structure provides the greatest flexibility for operations and positions the park to be able to adapt to changing market dynamics and needs into the future. The structure also best positions the park for potential access to public funding and private donations that are frequently required for operations and benefits to stakeholders.

Figure 2: Organizational Diagram



Governing Board

One of the outcomes of the strategic plan will be to develop a governance structure, which typically includes a management and/or advisory board. The Board will consist of individuals and organizations that share the vision for the park and provide expertise that contribute to the ability of the park to fulfill its purpose. The Board is typically comprised of approximately 7-11 members. The Board typically consists of representatives from each type of partner – the college, resource, private sector, and economic development.

Management/Staffing

The park will include a full-time executive director and part-time administrative assistant. The staff will provide services to businesses, cultivate resource networks, manage facility development, and manage ongoing operations. Subsequent increases in staffing hours and levels would depend on increase in workload and funding availability.





What's Needed

In order to move this initiative forward, we need to:

- Prepare a 20-year strategic plan with five-year milestone targets.
- Develop a 20-year multi-phased master development plan.
- Engage third-party resources.

At the conclusion of this exercise, the outcomes will include:

- Clear direction for the community on how to lead and succeed with this initiative.
- A development plan that can be marketed to potential tenants and potential developers.
- A site plan to solicit buy-in and support from various levels of government for seed and capital investment that will be required.
- A governance structure that has community buy-in and support.
- A financial model outlining the path to sustainability for the park and the region.
- An estimation of the benefit to the community through the number of jobs created, based on the average AURP job multiplier of 2.57.

SUPPORT

Northeast Community College is a strong supporter of and is spearheading the park initiative.

The College is committing land, resources, leadership, and long-term commitment to the park.

Letters of support and short-term funding including financial and in-kind support are needed.

What the Short-Term Funding Will Do:

- Provide resources to **help confirm long-term development funding.**
- Confirm **five-year master plan for the park** & direction for the community.
- **Validate the concept** & confirm **long-term support.**
- **Accelerate the process & development** of the park.





Next Steps and Timing

2 years (2018-2020)

-  **AG & WATER CENTER**
 - Phase I Funding Complete
 - Phase I Ag & Water Building Construction Started
-  **NORTHEAST ADVANCED TECHNOLOGY PARK**
 - Park Strategic Planning Complete
 - Park Governance Model Complete
 - Park Site Planning and Programming Complete


5 years (2021-2023)

-  **AG & WATER CENTER**
 - Phase II Master Programming & Planning Complete
 - Phase II Building Construction Started
-  **NORTHEAST ADVANCED TECHNOLOGY PARK**
 - 1-2 Partners Secured and Located on Site

10 years (2023-2028)

-  **AG & WATER CENTER**
 - Ag & Water Complete Project Finished
 - National Demonstration Center
 - Growth from 350 to 500 students in Ag
 - Northeast a national leader in Agriculture
-  **NORTHEAST ADVANCED TECHNOLOGY PARK**
 - 3-5 Partners on Site
 - Increased Economic Development as a direct result of the Park

20 years (2028-2038)

-  **NORTHEAST ADVANCED TECHNOLOGY PARK**
 - 8-10 Partners on site
 - Possible new funding models
 - Intellectual Capital



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