Strategy for a Technology Enabled Puerto Rico

REACH Consortium Partners
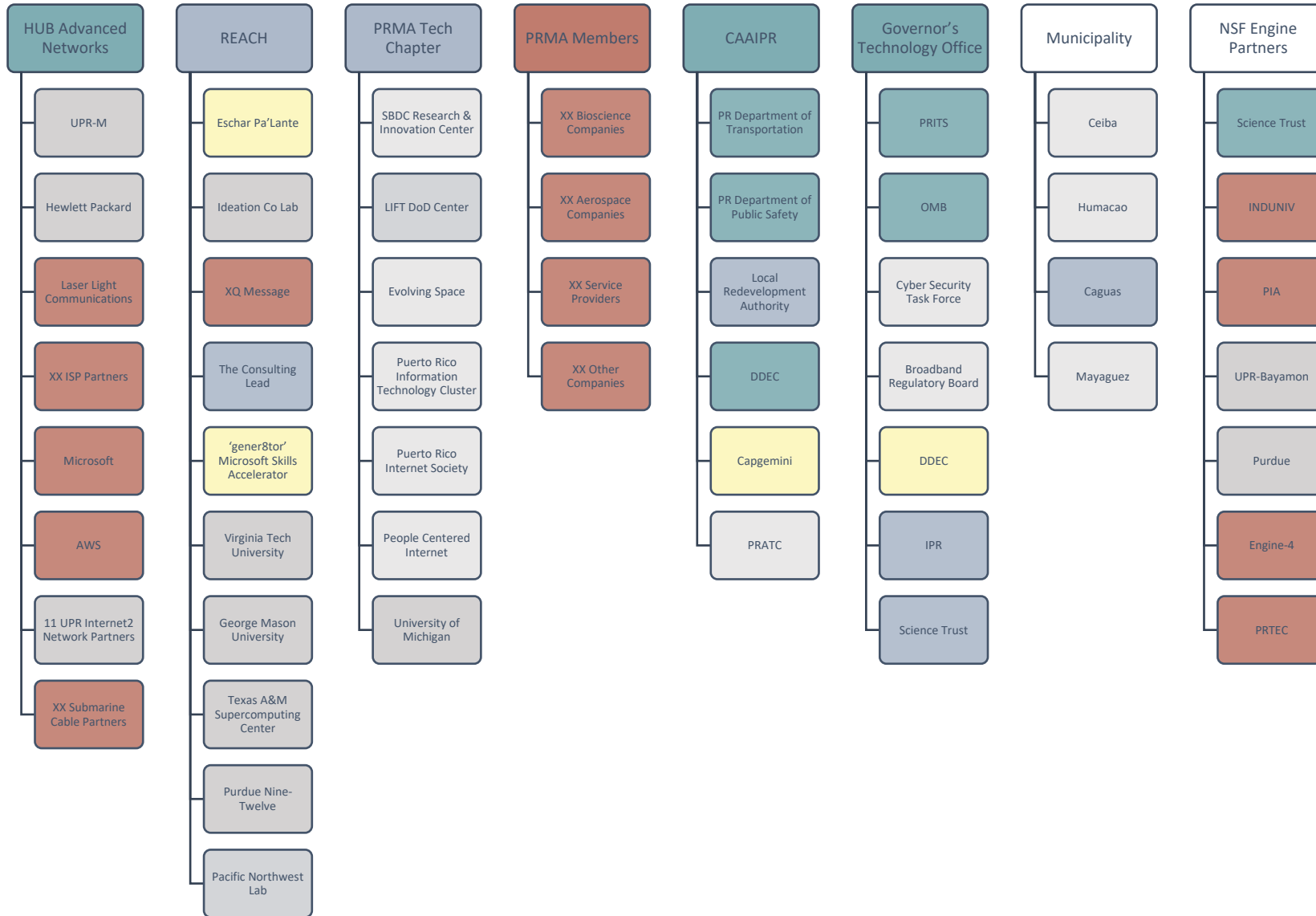
WHY Puerto Rico

R&D Tax Credits

- 50% salable tax credits for R&D expenditures
- Hard to recruit employee tax credits

Talent Statistics

- 6th highest concentration of Scientists and Engineers
- 50% of University graduates have degrees in stem fields

Rent Value

- Average commercial office rental cost is $40/sq ft.
- 95% of the Island is an opportunity zone with 3 Foreign Trade Zones.

Advanced Logistics

- U.S., Latin America, the Caribbean, and Europe.
- A central hub between U.S., Latin America, the Caribbean, and Europe.

Prime Location

- Average temps year round of 85 degrees with 200 days of sunshine.
- Vibrant International culture seeped in arts , history and beautiful natural settings.

Unique Network

- Only US location with research platform with the convergence of foreign/domestic, terrestrial/non-terrestrial, and cooperative/non-cooperative networks.

Jurisdiction Policy

- Follows all regulatory components of US policy.
- Operates on dual US based and Spanish based Law.
- Uses U.S. currency and is a dual language economy.

Energy Solutions

- $10.5B in Federal Funds have been appropriated for Energy Grid enhancements.
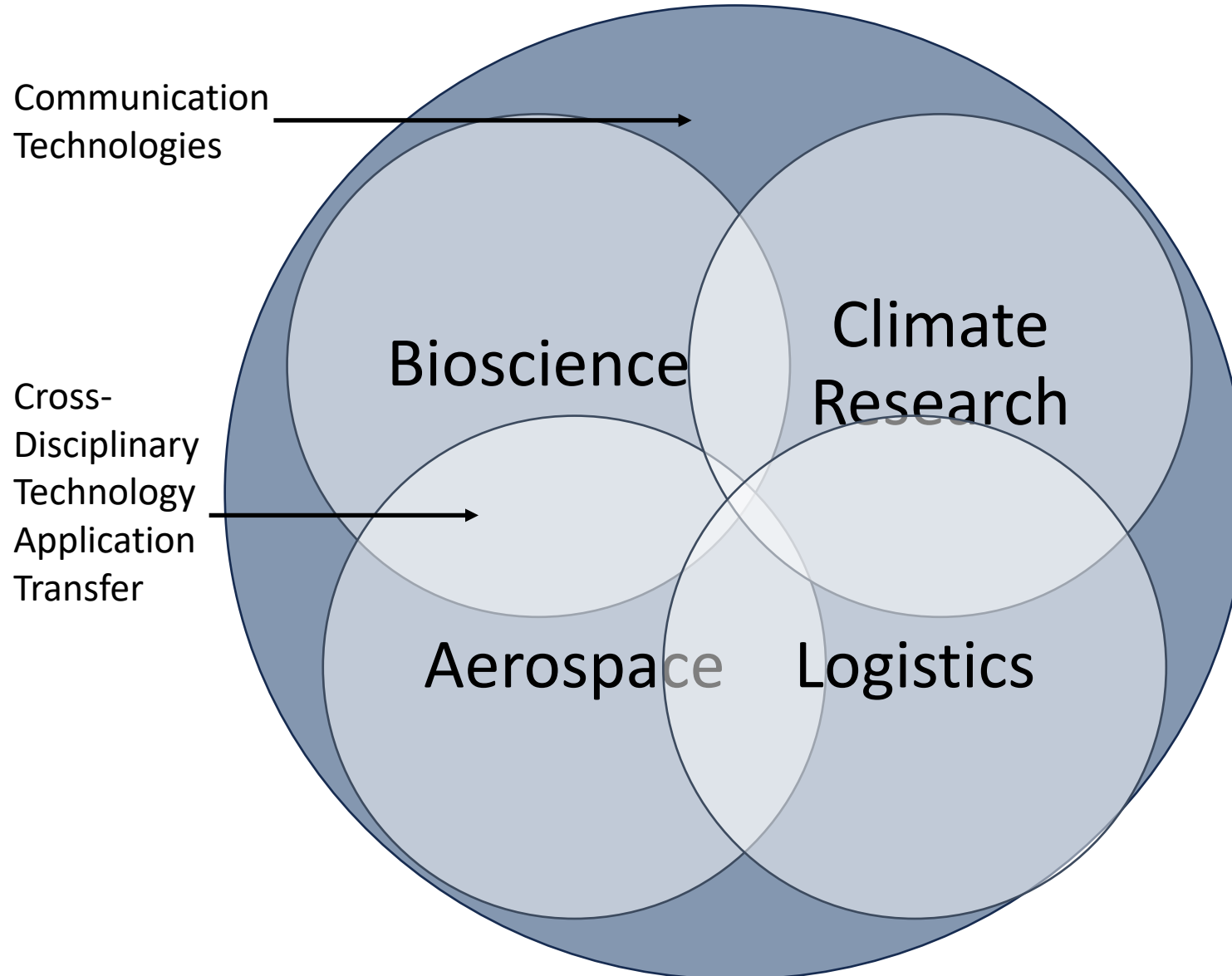
Diverse Population

- 98% of the population is Latino, with strong ethnic diversity within that population.
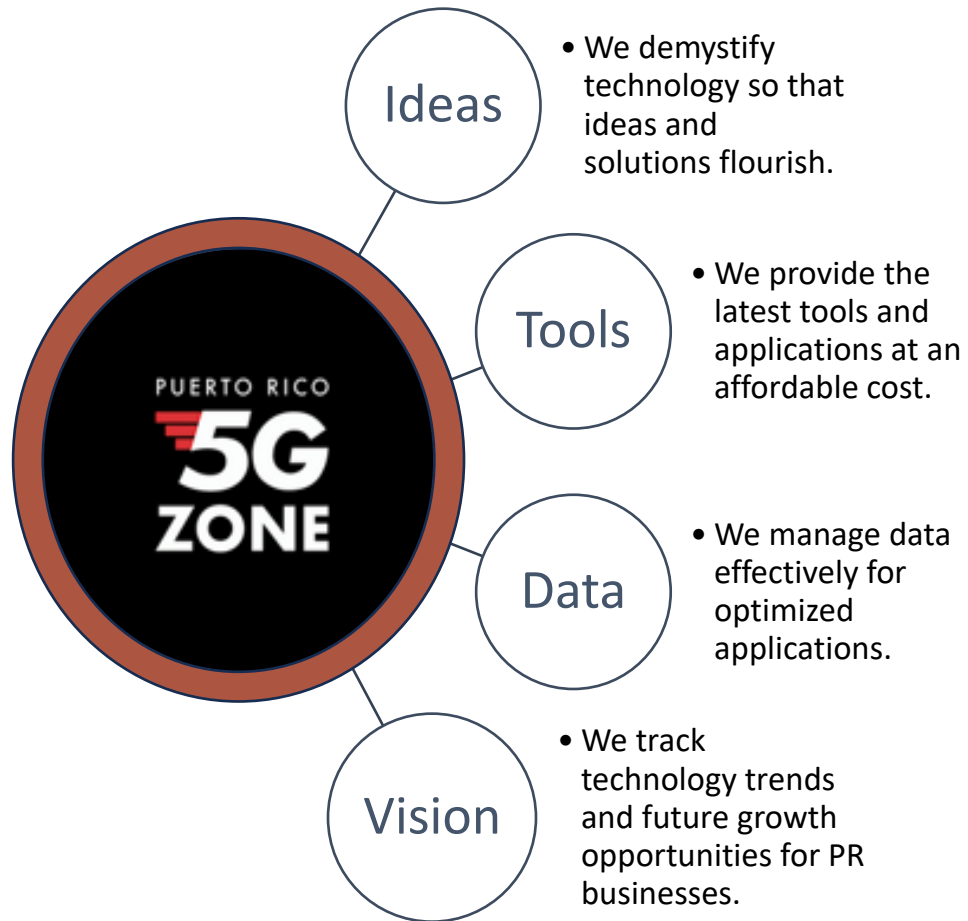
Academic Excellence

- Number One feeder school to NASA for both Latino and Female Engineers
- 80 Universities producing over 20K STEM graduates a year.

Communication Based Technology Research

Communication Technologies

Cross-Disciplinary Technology Application Transfer

Bioscience

Climate Research

Aerospace

Logistics

- We would leverage the nationally unique network convergences in Puerto Rico to design new products, services, and applications for communication-based tools.
- These convergences are of specific value regarding secure applications of 5G/6G, AI, Blockchain, DLT, ML, AR/VR, and ML.
- We'd connect with key industry consortium on the Island, identified by potential for CAGR growth by a University of Michigan research report, to develop innovation strategies that maximize global competitiveness.

About the PR5G Zone

Ideas
- We demystify technology so that ideas and solutions flourish.

Tools
- We provide the latest tools and applications at an affordable cost.

Data
- We manage data effectively for optimized applications.

Vision
- We track technology trends and future growth opportunities for PR businesses.

PR5G Zone is a non-profit founded in 2020 with a single mission: to be the most creative, ground-breaking, and impactful advocate for critical intelligent infrastructure in Puerto Rico. We approach business challenges with fresh eyes to develop unique, customized strategies.
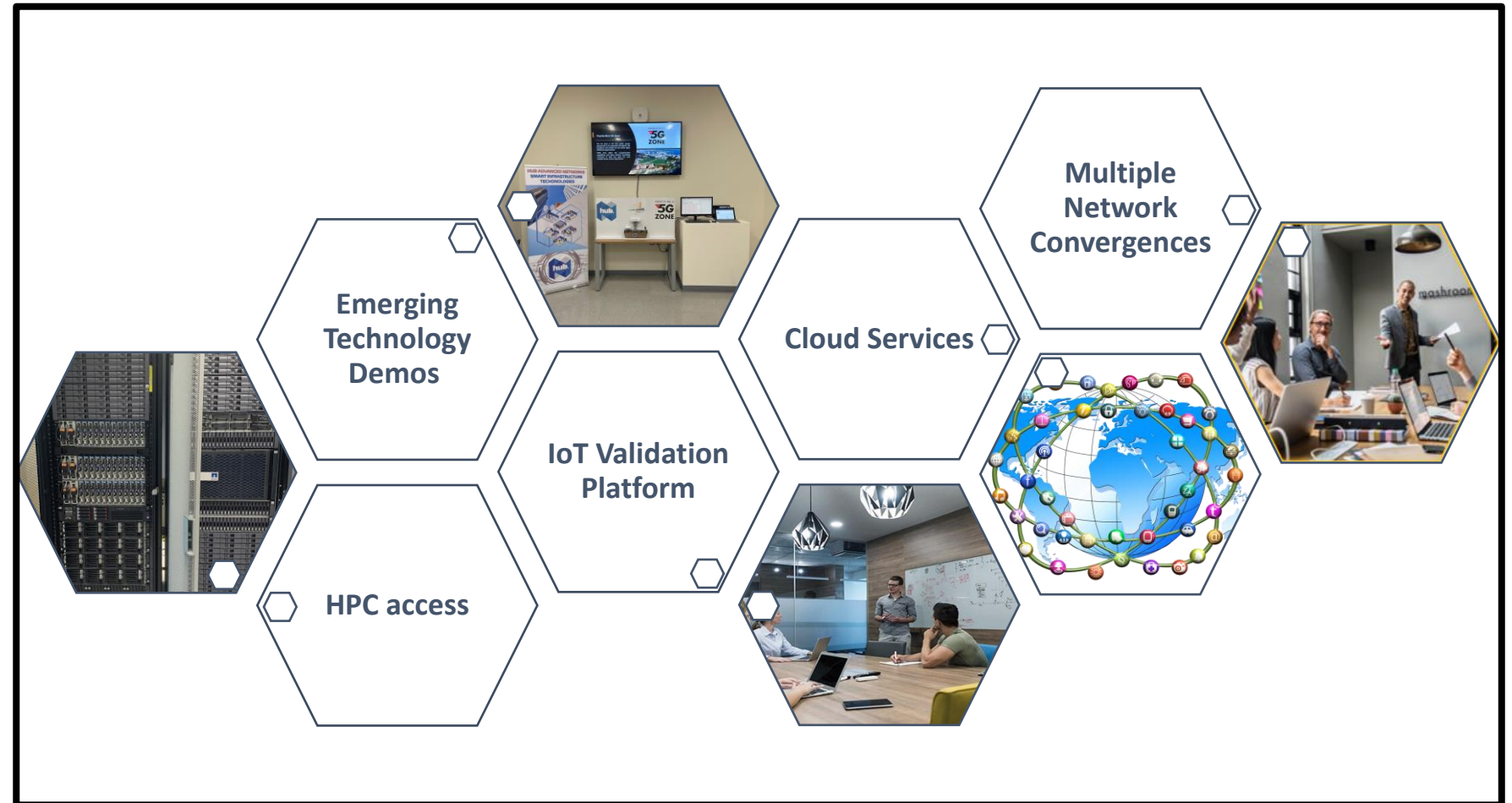
We see that data and communication technology is increasingly complex and it's difficult for businesses to navigate the landscape. Our goal is to work with industry to translate their challenges into easily navigable technology solutions.

We have a team of project management, finance, private investing, technology validation, and government compliance experts with global experience.

The PR5G Zone Labs as a Service

We offer low-cost access to Zero Trust Data secure labs with the most advanced data tools in the Caribbean, and a place to pollinate ideas with other expert global collaborators.

From these facility businesses, innovators, and research entities can utilize all the assets of HUB Advanced Networks and the PR5GZ which includes:

Emerging Technology Demos

Multiple Network Convergences

Cloud Services

IoT Validation Platform

HPC access

Creating Connected a Lab Network

Puerto Rico

- We currently have two labs with one more in development and plans for a total of eight in the network.

- Each lab would be connected to the fiber optic, internet 2, and laser satellite networks, as well as to the research being done within each Lab.

- Each lab would have a different area of research focus all connected by a common need for advanced communication technology.
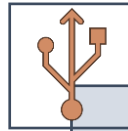
The Master Strategy

PR5GZ Labs

- Designed with the most advanced tools.
- THIS is where research, innovation and Validation occur.
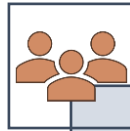
REACH

- The 'Research Empowered Advanced Communication Hub Structure brings collaborators together to pollinate ideas across the multi-disciple research in each individual Lab.

Digital Tools

- Powerful AI Tools will be combined with the human element to create customized resources for Puerto Rico.
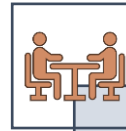
Engagement

- Local Industry and Organizational Partners will be brought together to roundtables to define their business challenges.

Validate

- Engagement partners test and validate solutions through the engagement networks, which then informs the REACH consortium on successes, gaps, and opportunities for new products, services, or research.

Our Labs

BRAINSTORM WITH INDUSTRY PARTNERS

Aerospace	Bioscience	Climate	Energy	IoT
•Research •Compliance •Validation	•Design •HIPAA •Microgravity	•Tracking •Solutions •Innovation	•Grids •Management •Sustainability	•Integration •Applications •Data Use

Cross Disciplinary Collaboration
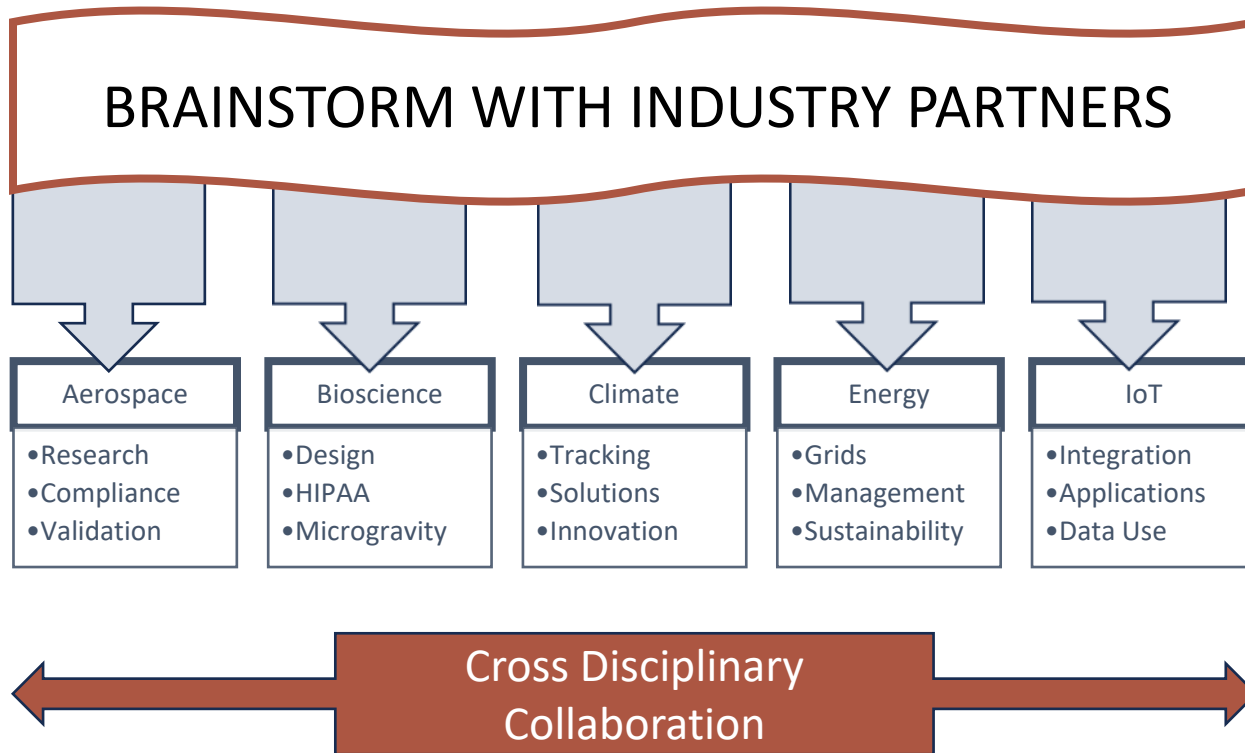
We have low-cost sophisticated data and communication technology labs each with individual areas of expertise and solution focus.

These labs make advanced digital and data tools available to everyone.

There are currently labs in Isla Verde and at UPR-Mayaguez with one more in development on the east-coast of the Island.

These labs are connected to other research labs and national and global researchers and research partners.

Equipment Specific to Needs

Equipment purchases will be made based on a recent research project by University of Michigan which identified key growth industries for Puerto Rico and aligned it to the enabling technologies needed to be globally competitive.
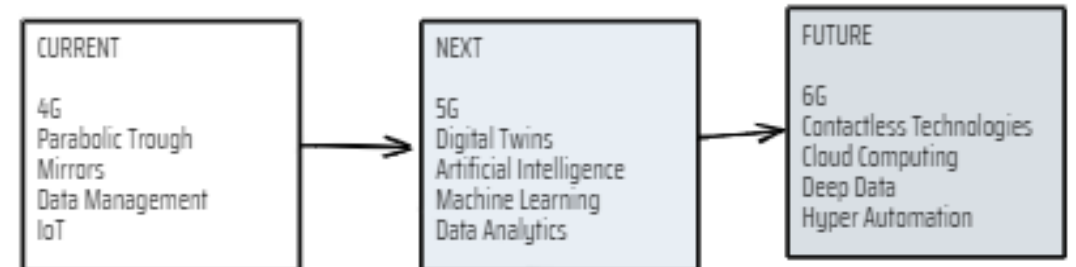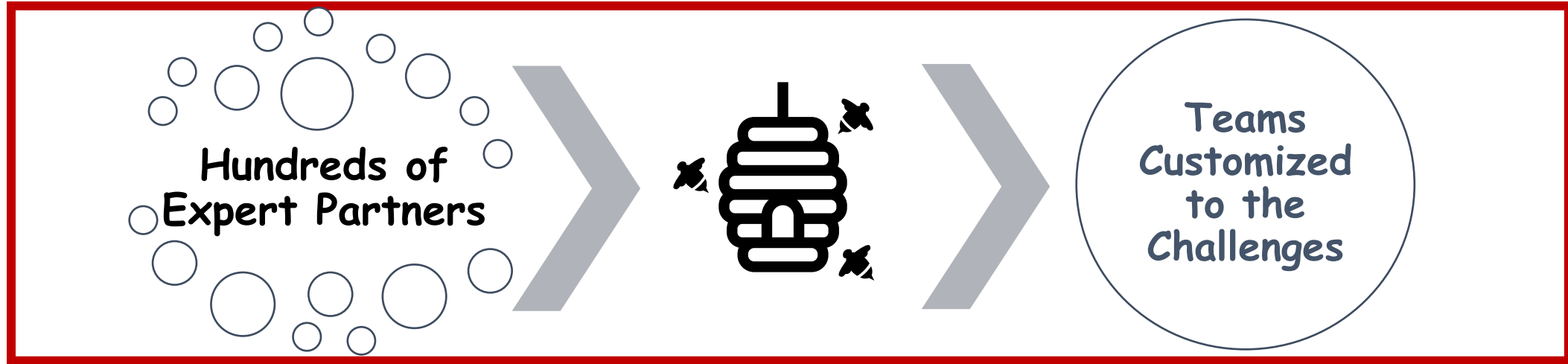
AEROSPACE

CURRENT

3D Printing
Additive Manufacturing
Prototyping
Digital Management
Automation

NEXT

Drone Applications
Data Analytics
Cybersecurity
AI
Blockchain

FUTURE

Quantum Computing
Augmented Reality
Virtual Reality
Swarm Robots
Soft Robotics

FINTECH

CURRENT

Machine Learning
Cloud Computing
Zero Trust Data
Artificial Intelligence
Blockchain

NEXT

No-code Development
Artificial Intelligence
Laser Communications
Open Banking
Embedded Finance

FUTURE

Neobanking
Hyper Automation
Big Data Analytics
Robo-Advisors
Event Driven Software

PHARMA

CURRENT

Bioidenticals
Customized Medicine
Optimized Process
Machine Learning
Single Function Robots

NEXT

HPC Clusters
Nanotechnology
Data Analytics
Artificial Intelligence
Private Networks

FUTURE

Data Mining
Quantum Computing
Bio Printing
Swarm Robotics
Augmented Reality

SOLAR ENERGY

CURRENT

4G
Parabolic Trough
Mirrors
Data Management
IoT

NEXT

5G
Digital Twins
Artificial Intelligence
Machine Learning
Data Analytics

FUTURE

6G
Contactless Technologies
Cloud Computing
Deep Data
Hyper Automation

'REACH' Collaboration Structure

Hundreds of Expert Partners → Teams Customized to the Challenges
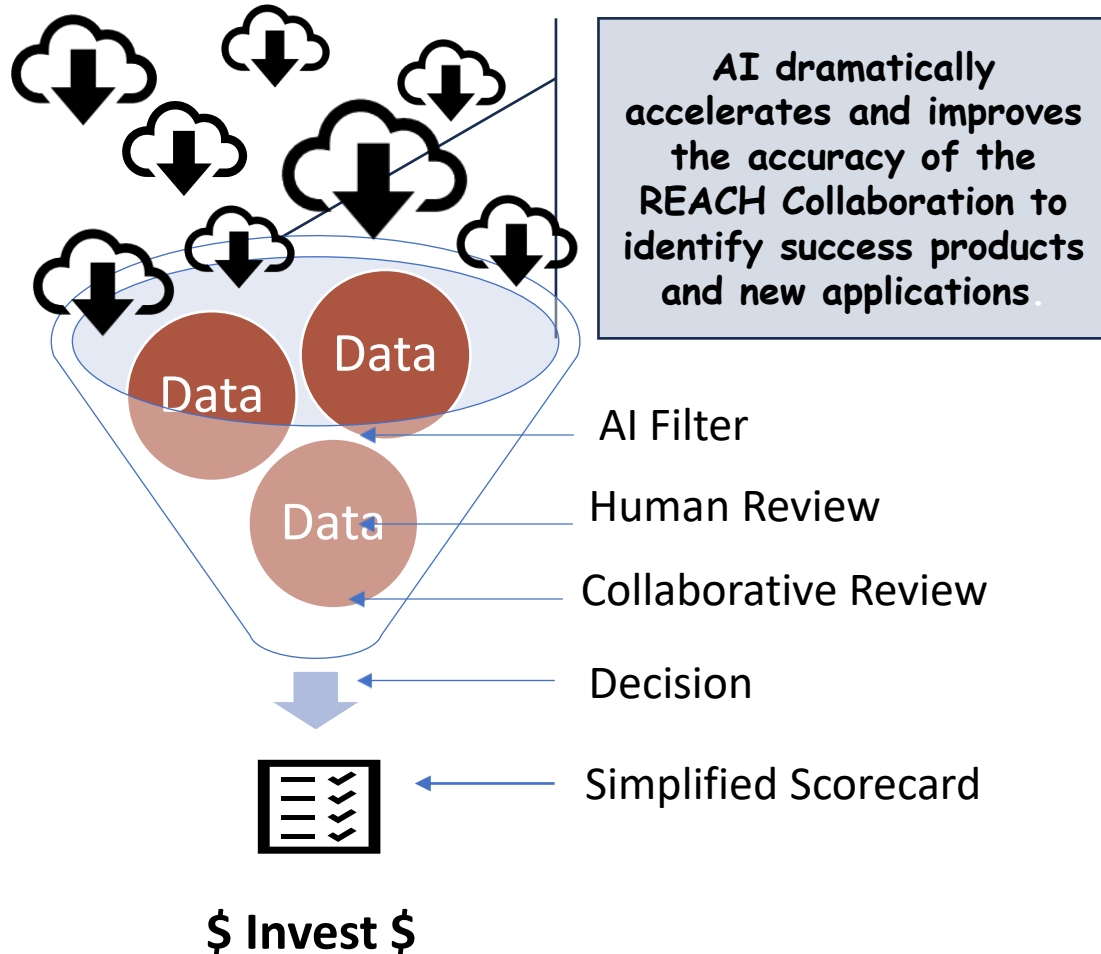
- Our 'Research Empowered Advanced Communication Hub' (REACH) concept was designed to manage pollination between the labs and their innovators.

- Partners interact and priorities are defined by the consortia partners themselves using the 'Strategic Doing' methodology.

- Pollination between partners will result in teams customized for individual challenges.

- Consortia partners will be connected by AI tools to stimulate cross-discipline technology transfer using AI enabled tools.

- The AI tools, like TDP, will accelerate data-led decision making for rapid validation or 'fast fail' results.

TDP Capabilities

AI dramatically accelerates and improves the accuracy of the REACH Collaboration to identify success products and new applications.

Data

Data

Data

AI Filter

Human Review

Collaborative Review

Decision

Simplified Scorecard

$ Invest $

TDP (The Decision Platform) was created in Silicon Valley to 'level the playing field' for identifying investment opportunities by AI enabled comparative analysis.

It now includes hundreds of millions of data sources, nationally and globally, with hundreds of algorithms to filter that data into simple score cards. It is being utilized by governments, major industry, and the UN to accelerate analysis of all kinds of opportunities.

These score cards have a proven accuracy rate of 90%, leaving the last 10% of evaluation to the human factor of compassionate review. This human engagement element can occur at any time in the evaluation process for reviewing of emerging regional opportunities.

Puerto Rico Manufacturer Association as the Industry Engagement Partner

The REACH consortium will soliciting input through a series of roundtable discussions on current challenges from industry on the Island of Puerto Rico.

Through this structure we can also provide input back to industry which will include AI tools for navigating content on technology and educational resources.

Those challenges will then be 'translated' into actional technology solutions by technology innovators. TDP will also identify additional existing products that solve these challenges.

Qualified researchers will then identify the optimal navigational process to help entities easily determine the correct tools for their challenges.

Training on these navigational process will then be packaged into training and redistributed via the same networks that identified the challenges originally.
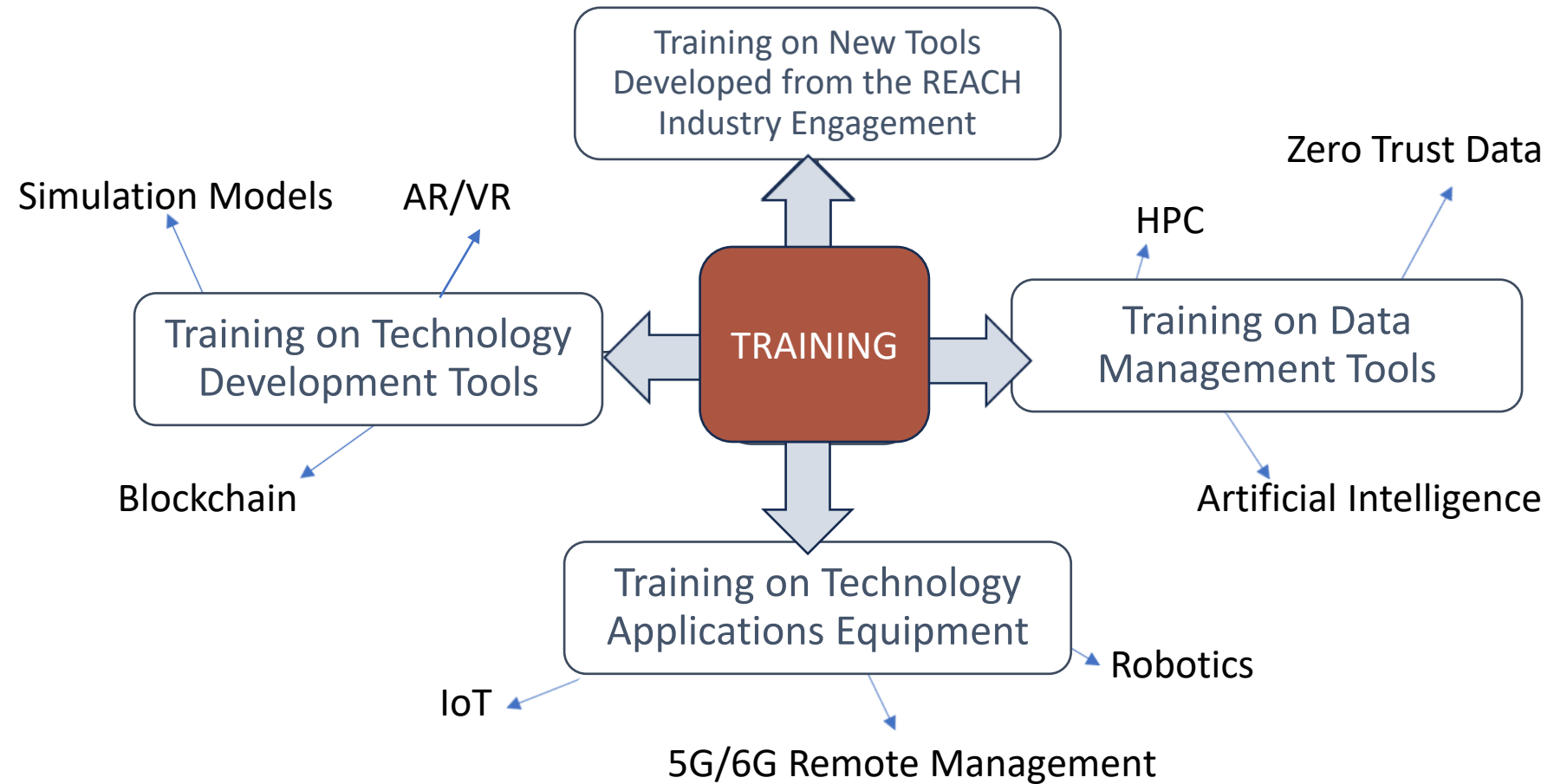
Linkage to National and Global Labs

Puerto Rico Labs

National Landing Lab

Texas A&M

Purdue

Pacific Northwest Lab
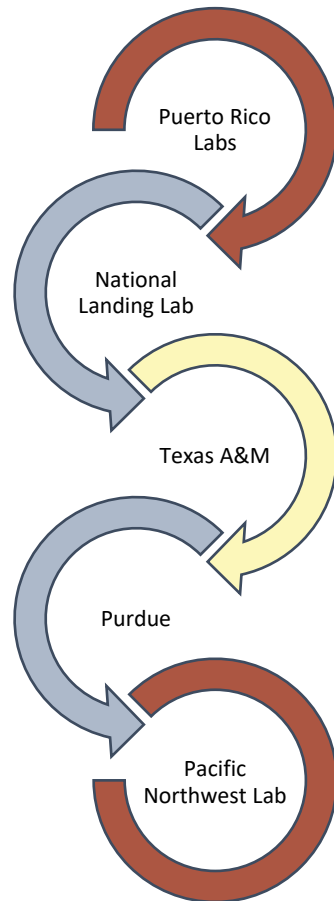
- Via established partnerships the Lab system in Puerto Rico would be connected to other labs in the U.S. and globally.
- The labs in Puerto Rico would serve as the 'sandbox' for communication technology convergences.
- Key personnel in the partner labs would be part of the REACH network as expert resources based on the project.
- Technical resources between labs could be shared so that collective equipment would represent the 'best of class' available until demand verified the need to upgrade any lab's regional need.

Responsive Training

- Engagement partners can choose to self-navigate the options or receive customized consultations from local non-profits or for profit entities.

- A Diverse and Inclusive population engagement would be a priority consideration.

Training on New Tools Developed from the REACH Industry Engagement

Simulation Models

AR/VR

Zero Trust Data

HPC

Training on Technology Development Tools

TRAINING

Training on Data Management Tools

Blockchain

Artificial Intelligence

Training on Technology Applications Equipment

Robotics

IoT

5G/6G Remote Management
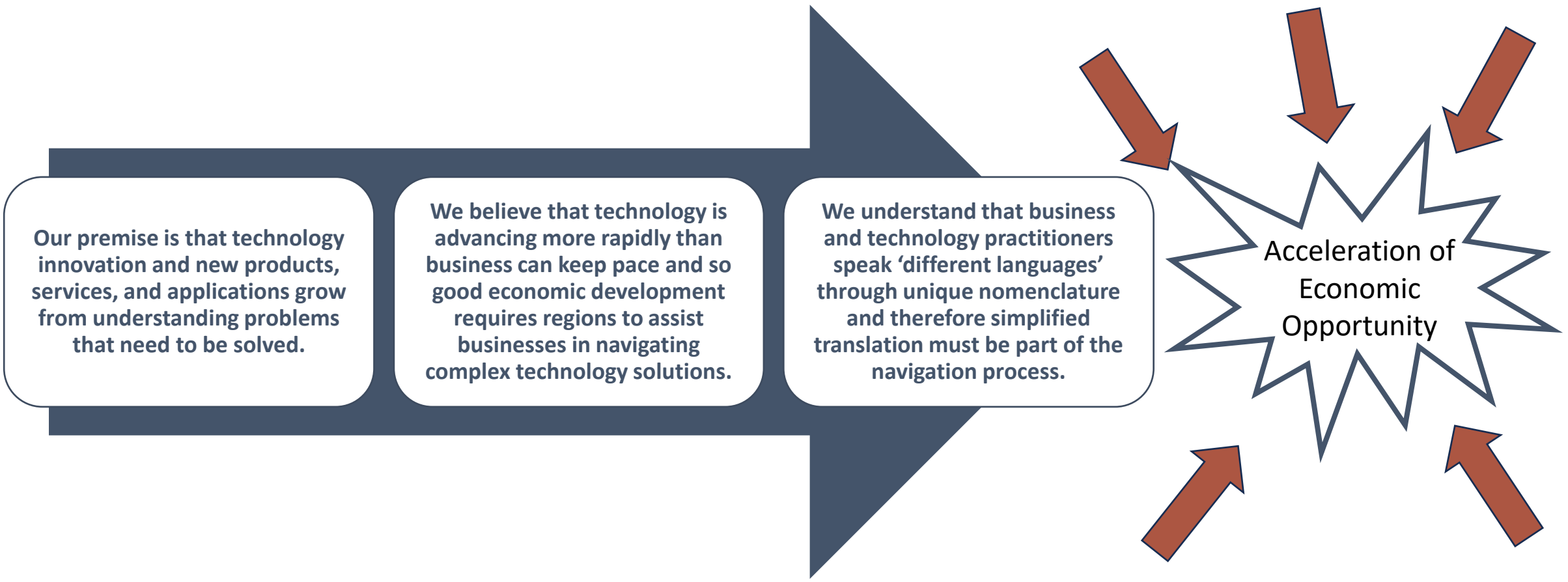
Envisioned Result

BY SOLVING THESE PROBLEMS WE CREATE A NEW PARADIGM OF OPPORTUNITIES

Our premise is that technology innovation and new products, services, and applications grow from understanding problems that need to be solved.

We believe that technology is advancing more rapidly than business can keep pace and so good economic development requires regions to assist businesses in navigating complex technology solutions.

We understand that business and technology practitioners speak 'different languages' through unique nomenclature and therefore simplified translation must be part of the navigation process.

Acceleration of Economic Opportunity

Phase I Proposed Scope of Work

Convene a 'Strategic Doing' workshop of all core partners to define a collective process for how the partners will optimally interface and prioritize activities for Phase II.

Establish the PRMA 'Roundtable' activities to gather information from the members on challenges and then with the University of Michigan research team translate the business challenges into technology solution options.

Host 'Skills Awareness' activities to frame the exact skills related to the technology solutions identified through the roundtable activities.

Use TDP to identify other potential national or global regions of optimal research collaboration based on the alignment Tdf strengths and/or gaps and to provide customized business service sample reports by Evolving Space for companies that are roundtable participants.

Actively expand the local, national, and global networks for a stronger pipeline of projects, markets, and research opportunities. Use the TDP analysis as well as PCI and Capgemini global networks.

Work with TDP, The National Minority Business Council and SBA to identify new methodologies for calculating qualification in the 8a program now that the Supreme Court has rejected Affirmative Action and the Federal Courts have rejected 8a based on racial qualifications.

General Phase I Budget Recommendations

Org Name	Purpose
PR5G Zone	Consortium Management & External SME Consulting
UPR-M	Strategic Doing Facilitation
The Consulting Lead	Research Grant Compliance
Evolving Space	University Student Engagement
PRMA	General Industry Engagement
PRMA Technology Chapter	Tech Org Partner Engagement
Gener8tor w/Microsoft/PRTEC	Skill Acceleration
Ports/ Local Redevelopment Authority	Roosevelt Roads Engagement
TOTAL	

Phase II Proposed Scope of Work

Establish a project management process for all identified consortium partners using the recommendations made by the 'Strategic Doing' workshop conclusions.

Expand the PRMA 'Roundtable' activities to gather information from the members on challenges and include other targeted professional associations such as INDUNIV, PRTEC, PRATC, and Medical Device Cluster.

Host skills training programs aligned to the exact skills related to the technology solutions identified through the roundtable activities and aligned to those identified in the 2023 University of Michigan 'Tech Enablers Report' which identified high-growth industries with strengths in Puerto Rico.

Customize TDP to the local regional needs based on previous reports made. Expand customized business service sample reports by Evolving Space for companies engaged in the identified high-growth industries.

Actively expand the local, national, and global networks for a stronger pipeline of projects, markets, and research opportunities. Use the TDP analysis as well as PCI and Capgemini global networks.

Continue work with TDP, The National Minority Business Council and SBA to identify new methodologies for calculating qualification in the 8a program now that the Supreme Court has rejected Affirmative Action and the Federal Courts have rejected 8a based on racial qualifications.

Invest in expanding the critical intelligent infrastructure to support the high-growth industries including adding HPC capabilities at HUB787, expanding the UPRM/5G Zone Lab to include the 5G Green Energy Testbed, customize the capabilities at HUB939 to meet the specific high-security needs of the Spaceport, and invest in a new connected Lab portal in Caguas.

General Phase II Budget Focus

Org Name	Purpose	
HUB787	Add HPC Capabilities	
UPR-M 5G Green Energy Testbed	Expand Existing Lab and Add VT linked lab	
HUB939	Customize Capabilities to Spaceport	
City of Caguas	Lab Portal	
PR5G Zone	Network Development and Management	
The Consulting Lead	Compliance	
Gener8tor/Microsoft	Business and Skill Acceleration	
Capgemini/PCI	Global Network Expansion	
PCI/TDP	Total Customization	
PRMA	Industry Engagement Strategy	
PRITC	Event Development and Expansion	