



March 26, 2012



We Engineer Light™

Lumitex

- Cleveland, Ohio
- Irvine, CA
- Hsinchu, Taiwan

Value Proposition for Manufacturers



The goal of PRISM is to help SMM's realize their growth plans faster, cheaper, and with less risk! while creating a continuous flow of innovation from concept thru launch

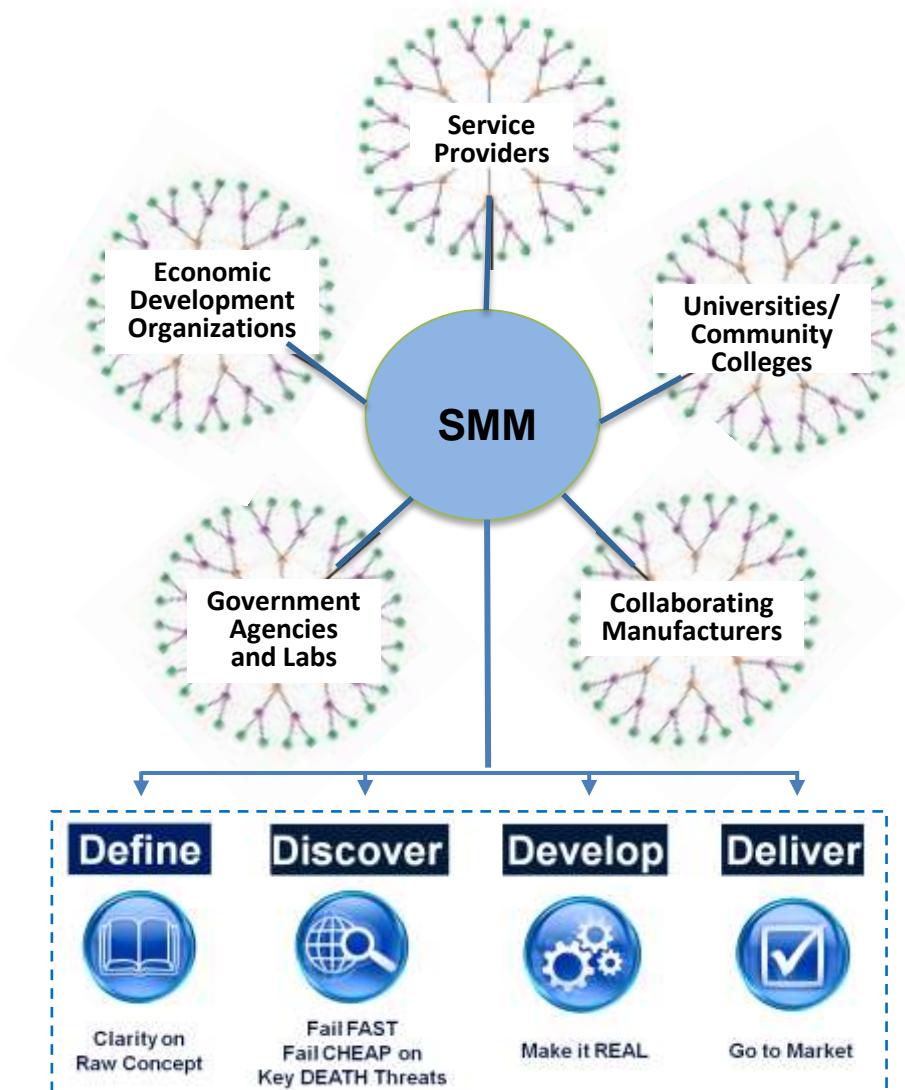
by

Leveraging the region's assets to create sustained manufacturing growth, including a flow of SMM job growth

PRISM Value Proposition



Win-Win-Win-Win



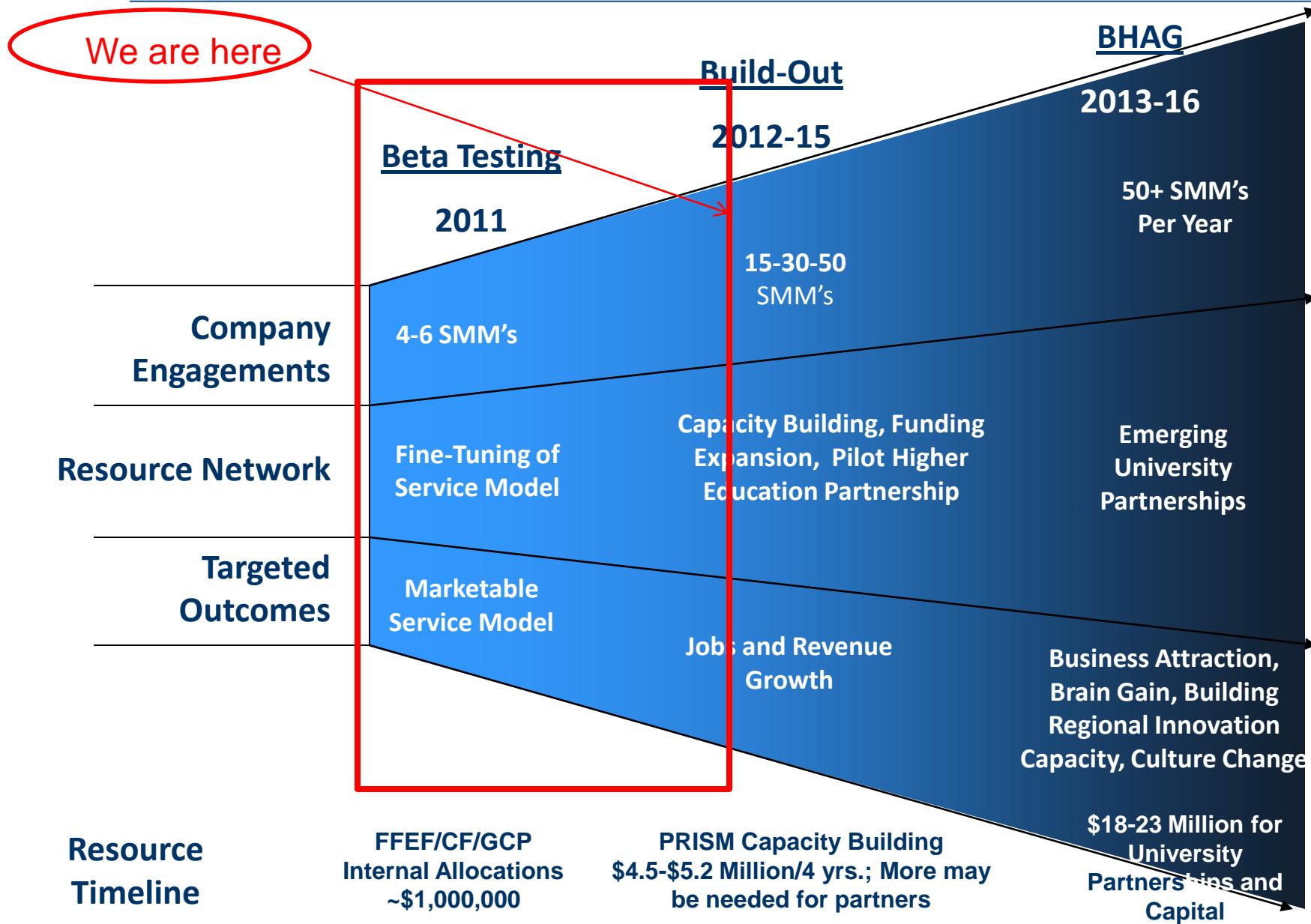
For Economic Development : regional economic growth through manufacturing innovation.

For Manufacturers: unique way to grow by leveraging internal technology with area assets.

For Educational Institutions: a new way to connect with business; a rich offering to draw students who want practical education in business, technology and markets.

For Seed Funders: A rich vein of opportunity.

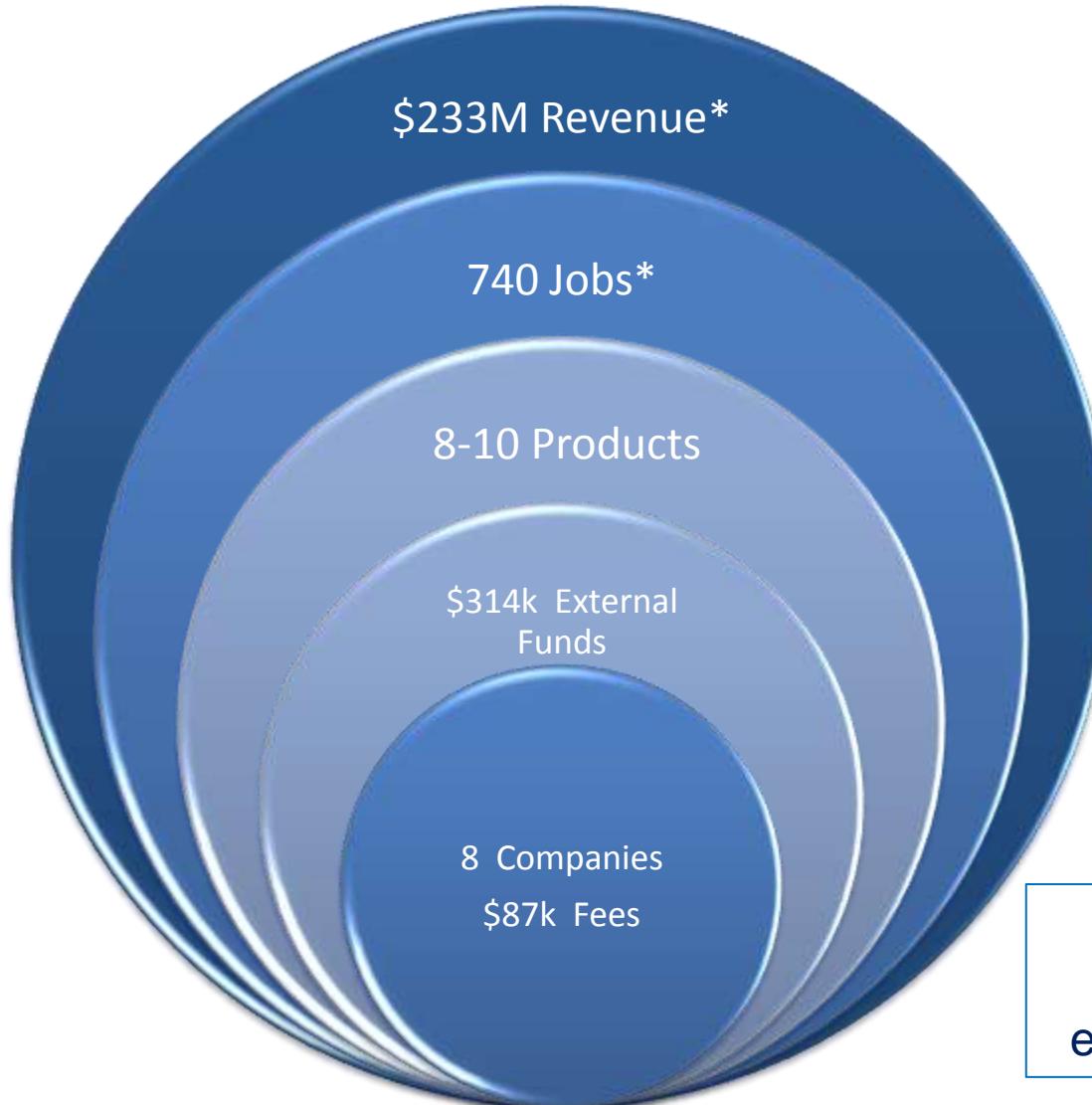
Review of Plan



Portfolio Impact Summary



*2014 projections



33 partner
engagements
executed/targeted

Eight Engagements to Date

Company	Innovation Project	Partners / Prospective Partners	Assets / Resources	Value Creation Categories
Equipment OEM	Develop equipment for plastic waste-to-crude-oil	NorTech, CSU, NIST-MEP, CWRU	Market experts, technical experts, MAGNET process development services, funding	New Capability for Crude Oil Production
Combustion Controls Manufacturer	Develop Biomass Combustion Controls	NorTech, CSU, local start-up, NIST-MEP	Technical experts, funding, technology, MAGNET program management services, PRISM retainer services	New Product to New Market
Contract Manufacturer	Develop quality management system for production of energy storage system	NorTech, Out-of-region technology firm, NEO city	MAGNET process development services, market expertise, funding	Supplier for New Product to Market

Eight Engagements to Date

Company	Innovation Project	Partners/ Prospective Partners	Assets/Resources	Value Creation Categories
Heater Manufacturer	Commercialize heater for solar processing market and others	CWRU, Fenn Foundation (funding for student research), Ohio Third Frontier, U. of Akron, BioEnterprise	Funding, analytical capacity (student market research), medical market expertise, PRISM retainer services	New Products to New Markets
Fuel Tank Manufacturer	Commercialize coatings for interiors of fuel tanks	U. of Akron Corrosion Edison ETAG	Technical experts, MAGNET program management services, funding	Better Product to Existing Market
Clean Water Technology (NEW)	Scale up absorbent media to remove heavy metals from water	Affinity Consultants, Edison-ETAG, CWRU	Funding, environmental permit research & documentation, mfg. plant layout, dispenser design	Increased and faster capacity for production

Eight Engagements to Date

Company	Innovation Project	Partners/ Prospective Partners	Assets/Resources	Value Creation Categories
Contract Manufacturer (NEW)	Actuators for Aerospace Applications (and others); addition of product development capabilities to company business model	CWRU, NASA, Ohio Aerospace Institute, JobsOhio, local actuator developer/ manufacturer	Funding, medical market expertise, actuator analytical capacity, intellectual property roadmapping capacity	New Products to New & Existing Markets
Catalytic Components (NEW)	Process development for new applications	NorTech, NIST-MEP, CWRU	Funding, market research capacity, process development resources	Better Product to Existing Market

Preliminary Metrics

	Company/Project Metrics	PRISM Program Metrics
Portfolio projected and actual economic impact (sales, jobs, investment)	x	
Products Launched	x	
SMM product time-to-market	x	
# of new opportunities identified as a PRISM client)	x	
SMM's in portfolio		x
Contracts/MOU's with academic institutions		x
SMM's in prospect pipeline		x
Partner engagements		x
SMM-funded industrial revenue/grant -funded industrial revenue		x
Grant milestones met		x
External funding for clients		x
Portfolio diversity (geography, by industry)		x

PRISM: Client Interviews

Value to Established SMM

- 1) Strategic Forums: catalyze thinking
- 2) Tactical Tools: make it tangible
- 3) Relationship Manager: Access to the Network with someone who understands their business

Summary Comment:

“I would rate my experience with MAGNET so far very high... What you’re doing is reasonably priced and the benefits we expect to be far greater, and will make us more self-reliant.”

Value to Start-Up

- 1) Seed Funding Channel:
 - *“The first \$50-100K seed capital was critical. We wouldn’t be here without it.”*
- 2) Network: Nortech, JumpStart, MAGNET
 - Led to key intro for development
 - 4 Intros led to key feed supplier
 - Helped build Board of Advisors
- 3) Early design assistance – *“The CAD models gave us credibility.”*

Summary comment:

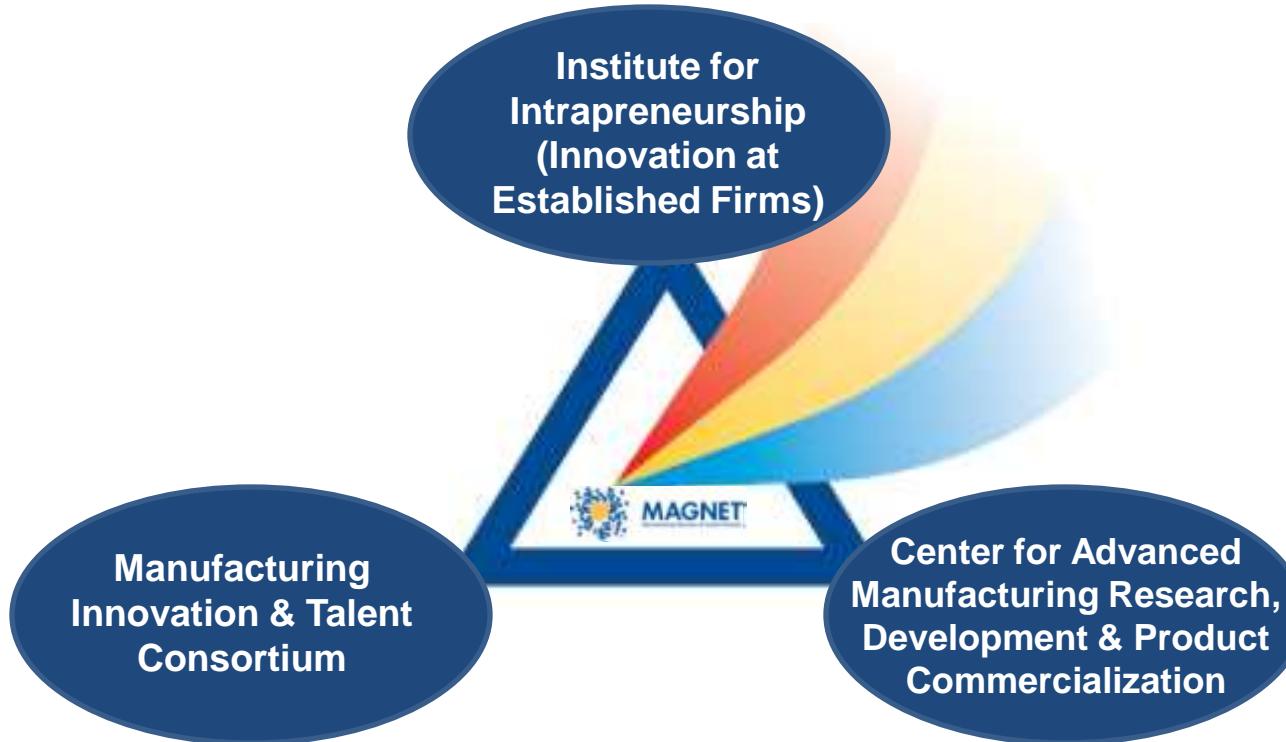
“I could build my company in Houston, NEO or the East Coast... I choose NEO, because Houston and the East Coast don’t have the catalytic element that we have here.”

PRISM: Client Interviews

Comments/Suggestions: Established SMM

- *“We got involved by attending a MAGNET Next Gen Manufacturing event at Timken...It catalyzed our thinking...We realized we weren’t happy just sustaining...we needed new products and markets...and we needed help.”*
- *“Practical tools are important – they take the strategy and make it real. They helped us map the next generation, and then institutionalize the ability.”*
- *“PRISM could bring things to the table that we didn’t have, and a list of companies who could help us...There are so many things MAGNET has expertise in – we want to come to them when we’re thinking about a topic and ask for direction to people who can help.”*
- *“The Relationship Manager is important. For someone to understand our business helps – there’s a big learning curve.”*
- *“Staying on track is difficult when you’re short-staffed...it’s helpful to be pushed to quantify...but it’s also helpful to minimize administrative time and maximize project time.”*

BHAG Elements: Early Conception



Overview of University Discussions

Capabilities in “Game Changing” Network

Organizing Innovation

Intrapreneurship
(Innovation at
Established Firms)

Manufacturing
Innovation & Talent
Consortium

Advanced Manufacturing
Research, Development &
Product
Commercialization

Staffing/Executing Innovation

- Network of community/technical colleges in the region with a focus on skilled workforce development and commercialization support

Operationalizing Innovation

- Major four-year research educational institution(s) as partner(s) in non-profit entity(ies); focus on conception/design/development/commercialization of manufactured products

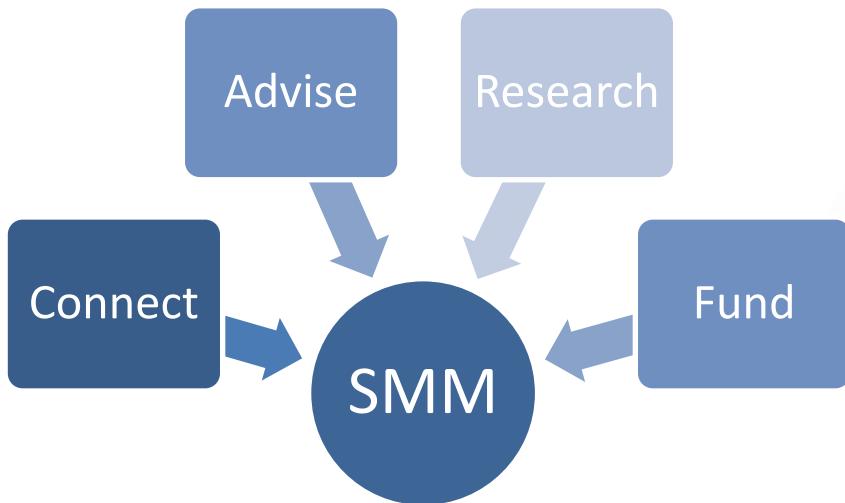
Overview of University Discussions

Goal of BHAG: An engaged network of higher-education-based assets, that link SMM market knowledge and University R&D capabilities for the development of innovative new products, markets, services

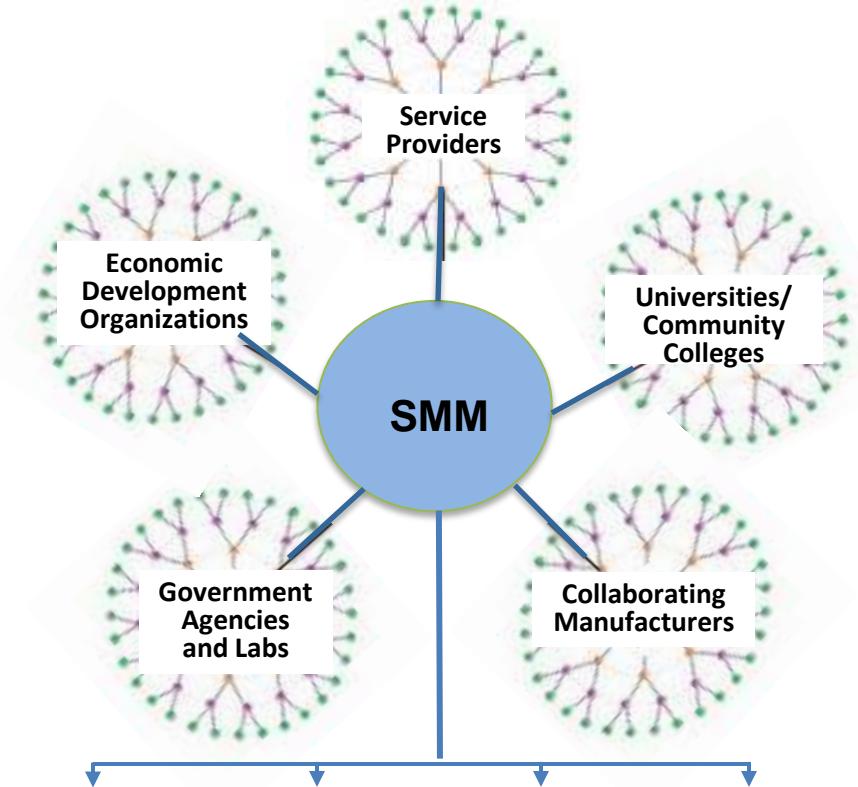
- MAGNET-managed/facilitated
- Curriculum/programs offering unique hands-on experience for associates/B.A.-B.S./masters students who want to “Make Things”
- Active network with NEO SMM’s & support resources
- Mechanisms to apply university-sourced technologies, skills, facilities and equipment in innovation
- Infrastructure for skunkworks, spin-offs, internal development, market-based research collaborations
- Flexible capital pool with debt/mezzanine/equity, tailored to projects

PRISM Engagements

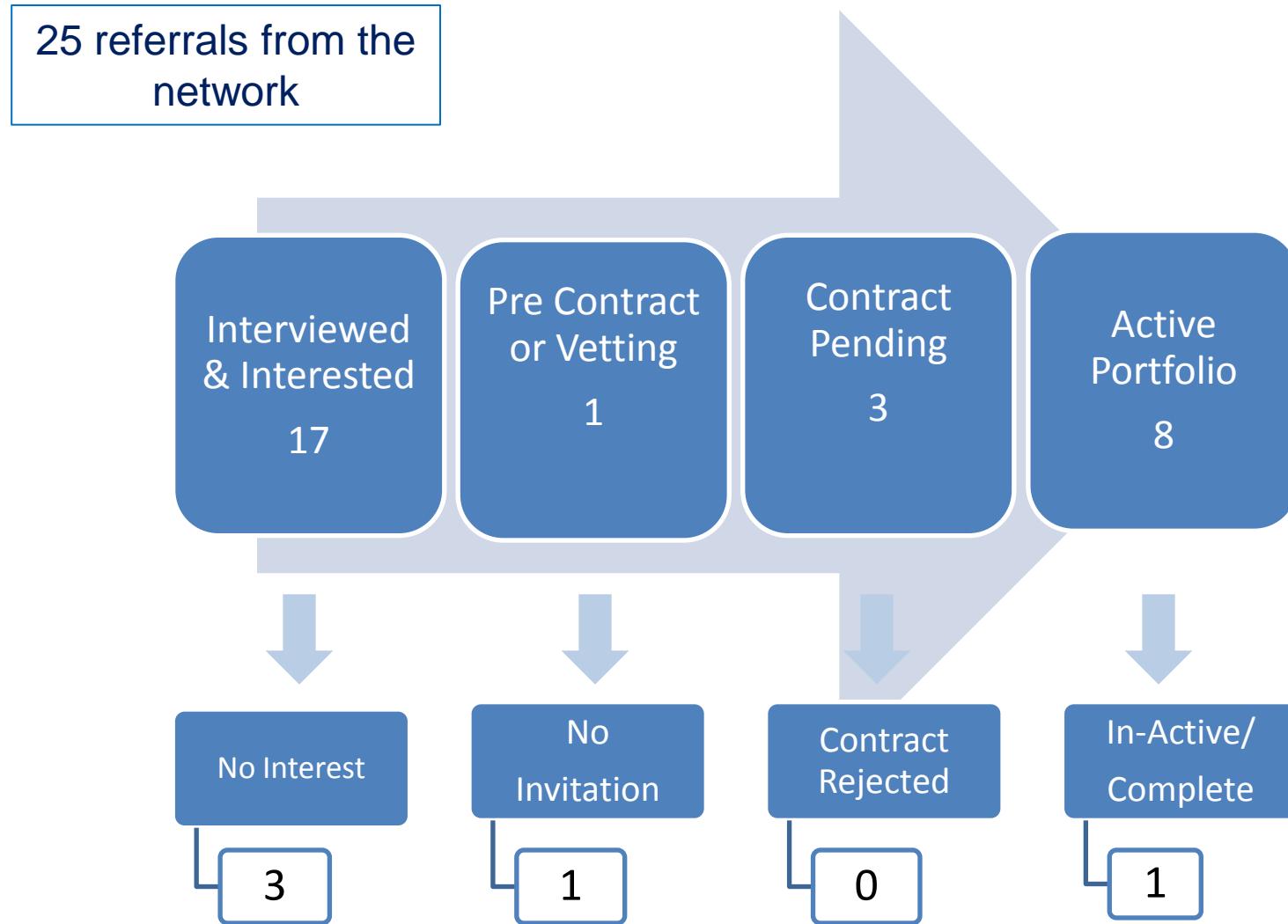
PRISM Roles



PRISM Network



PRISM Pipeline



PRISM: Client Interviews

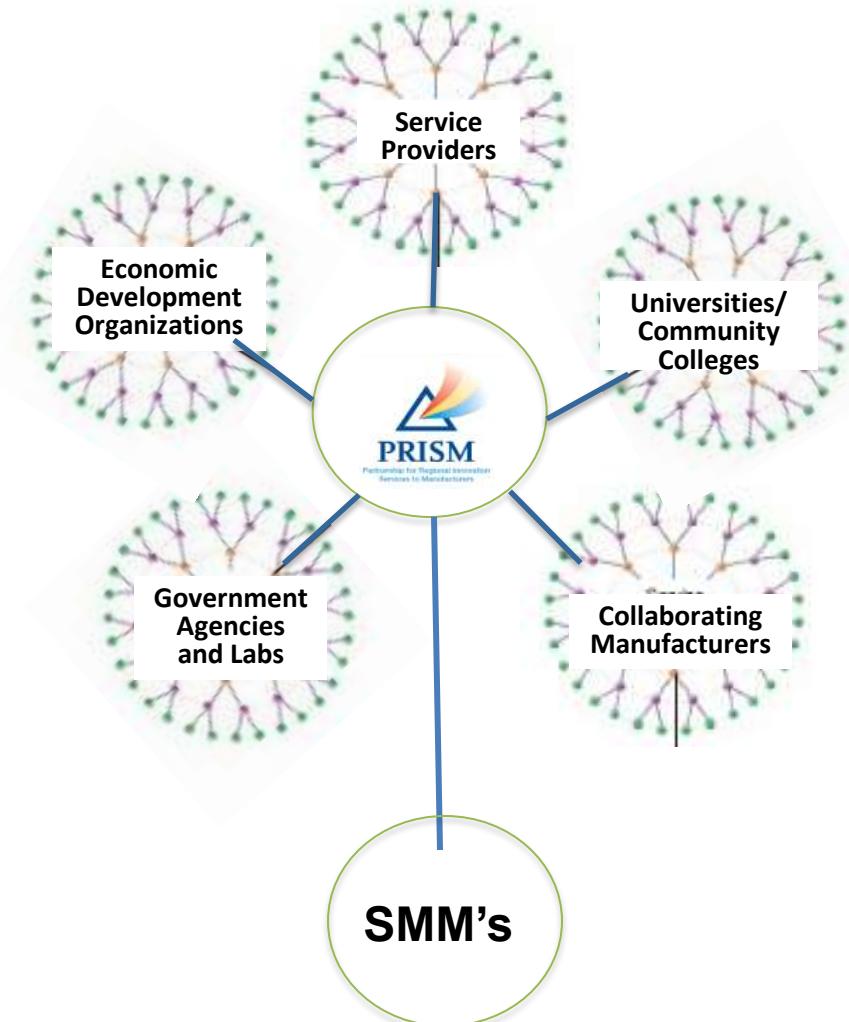
Comments/Suggestions: Start-Up

- “I’m not quite sure exactly how the key contact happens...it’s not one thing – one thing leads to another, and eventually, things come together. The network is catalytic.”
- “Plant more seeds...Nobody knows who the winners are. \$50K seeds are worth their weight in gold to a start-up...By the time you get to \$250-\$500K, it’s clear.”
- “MAGNET should participate in the upside. Convertible debt with 5% interest? We would have taken that.”
- “More integration with CWRU, Akron and CSU, with all the stuff going on. It happens, but not yet smoothly...CWRU’s ThinkBox incubator should be integrated with MAGNET, because CWRU won’t do it efficiently.”
- “Start-ups need low-cost consulting. We can’t pay \$200/hour for a professor.”

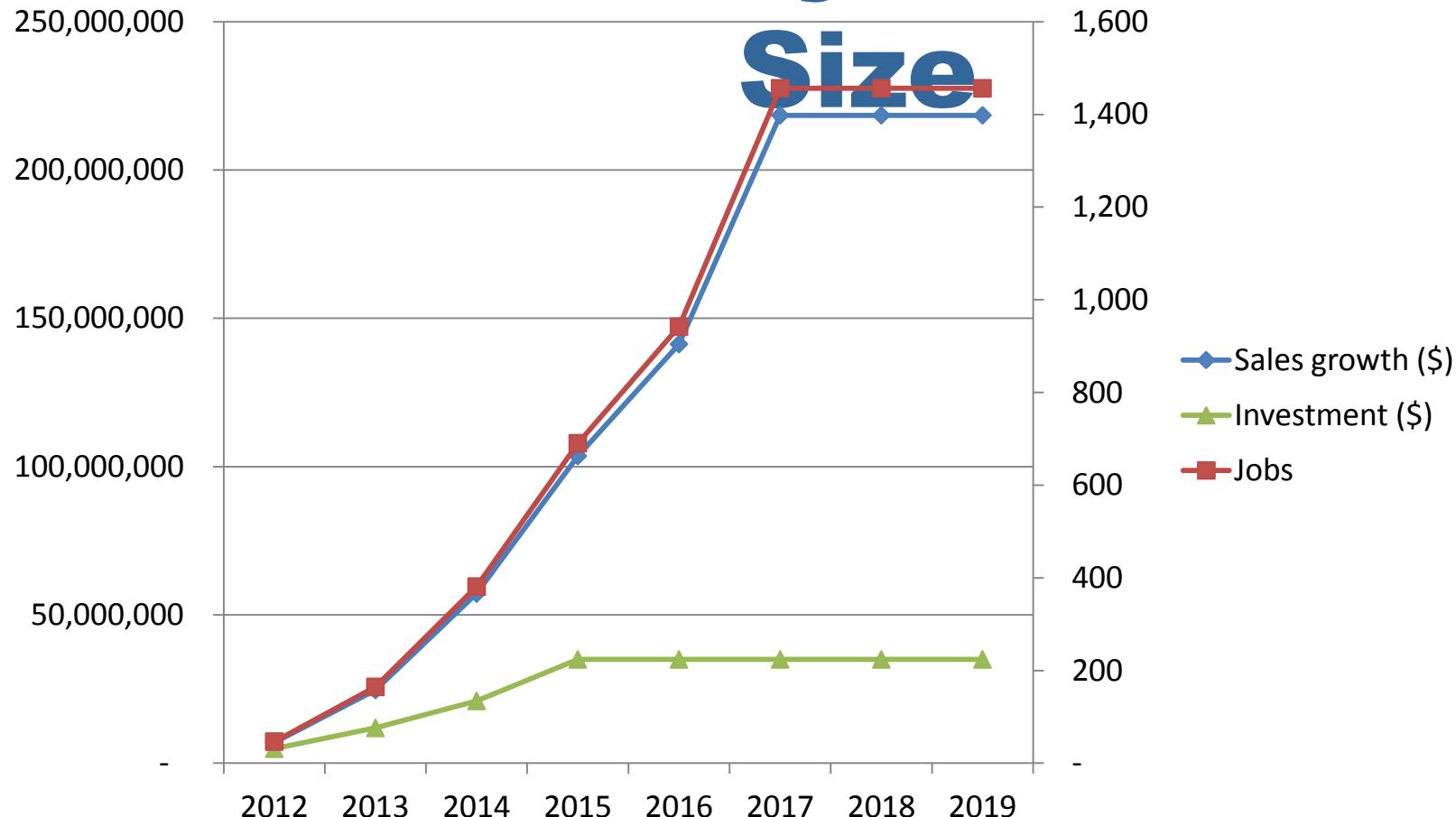
PRISM Linkages

How can PRISM find/connect SMM's with best resources?

- T-cons, e.g., with university “nodes” who assess/place lead resources
- Blogs
- Network forums:
 - Problem-owners
 - Solution-providers
- “Secondments” – MAGNET/ Network institutions lend/share key staff



SMM's by Portfolio



Key assumptions

From portfolio in year X, EI is realized in year X, X+1, X+2	Portfolio probability = 50% through 2014, 66% thereafter
Portfolio is 7, 17, 30, 50 SMM's at beginning of '12, '13, '14, '15, respectively, and at 50 every year thereafter	Minimum annual growth rate per company = 10%
Average revenue of SMM in portfolio = \$20M	Annual SMM funding = \$100k
SMM sales per employee = \$150k	Capital expenditures /Investment as a % of sales = 3.5%

Resource Requirements



Funding Target/Use	Calendar Year			Total
	2013	2014	2015	
Portfolio size at start of year	17	30	50	
MAGNET/Network Capacity*	\$1,300,000	\$2,300,000	\$2,600,000	\$6,200,000
Company Capital**	\$1,700,000	\$3,000,000	\$5,000,000	\$9,700,000
Total***	\$3,000,000	\$5,300,000	\$7,600,000	\$15,900,000

Background

- * This amount includes the \$750,000/yr. that MAGNET already is using for PRISM from outside sources, which must be sustained
- ** Average of \$100,000 per company in form of grants/low interest debt
- *** Does not include funding for BHAG

Return on Investment



	Conservative*	Realistic*	Aggressive*
Annual Portfolio Sales Growth	\$124 Mil.	\$218 Mil.	\$390 Mil.
Annual Portfolio Jobs Growth	828	1,456	2,604
Portfolio Sales Growth/Regional Investment*	20	29	51
Regional Investment/Job*	\$7,700	\$5,200	\$2,900

***Background**

- Assumes 50 companies in portfolio every year but turnover within the portfolio. Key variables include portfolio growth rates and average company size
- Does not include estimates for BHAG