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DOE and DoD Multi-topic Workshop
Modern Fiber and Textiles
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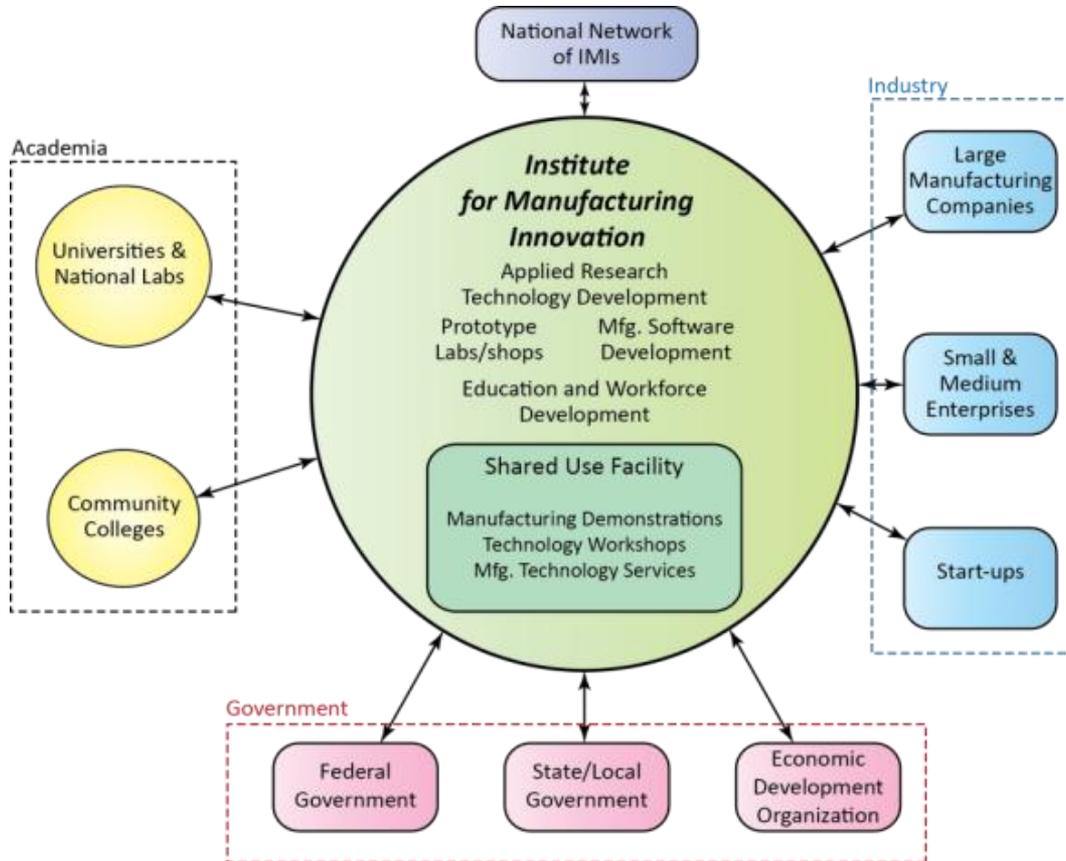
Institute Design Salient Features



- Public Private Partnership – a three legged Stool.
- Led by a non profit - an Honest broker
- Self Sustaining in 5 years.
- Applied Research in Focus Area
- Driven by Industry.
- Workforce component



Institute Design





Objectives



- Advance the Focus Area for the benefit of the **US economy**
- Help Industry through Product oriented research
- Help Create better market share for the Industry
- Encourage ecosystem growth
- Develop workforce through training and retraining

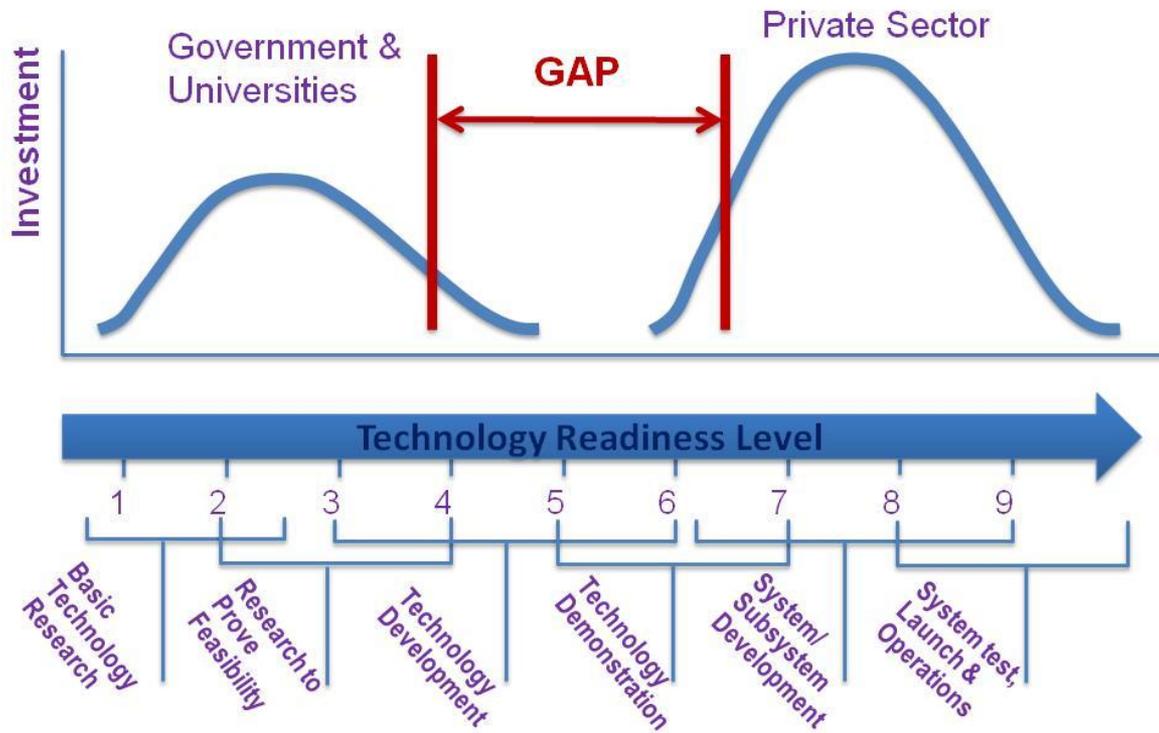
“It is not just for Defense applications”



Institute Operations



Gap in Manufacturing Innovation





TRL and MRL

	TRL 1:	Basic principles observed and reported	MRL 1:	Manufacturing feasibility assessed
	TRL 2:	Technology concept and/or application formulated	MRL 2:	Manufacturing concepts defined
	TRL 3:	Analytical and experimental critical function and/or characteristic proof of concept	MRL 3:	Manufacturing concepts developed
NNMI Target	TRL 4:	Component and/or breadboard validation in a laboratory environment	MRL 4:	Capability to produce the technology in a laboratory environment
	TRL 5:	Component or breadboard validation in a relevant environment	MRL 5:	Capability to produce prototype components in a production relevant environment
	TRL 6:	System/subsystem model or prototype demonstration in a relevant environment	MRL 6:	Capability to produce prototype system or subsystem in a production relevant environment
	TRL 7:	System prototype demonstration in an operational environment	MRL 7:	Capability to produce systems, subsystems or components in a production relevant environment
	TRL 8:	Actual system completed and qualified through test and demonstrated	MRL 8:	Pilot line capability demonstrated; Ready to begin Low Rate Initial Production
	TRL 9:	Actual system proven through successful mission operations	MRL 9:	Low rate production demonstrated; Capability in place to begin Full Rate Production



Discussion



- Government investment ~ \$75 million over 5 years.
- Matching Funds at least \$75 million
- Select Focus area/s that this amount can make maximum Impact to the US economy.
- It helps if the area is growing rapidly and the US leads in the Area.



Focus Areas -1



New / Modern Manufacturing Technologies

Modelling, Simulation, Visualization, Rapid Prototyping, Compressing Development time, Automation, Waste reduction, Bio degradable materials



Focus Area -2



Technical Textiles and Advanced Technologies

Structural, Biomedical, Safety, Sports, Construction, Geotextiles, Agro textiles, Polymers, increased comfort fibers and finishes, biological protective finishes, e-textiles, photovoltaic, piezoelectric wearable devices



Focus Area - 3



Composite Substrates

Polymers, Carbon, Glass and ceramic Fibers,
3D weaving and knitting, near net shape
braiding, novel structures, Laystitch®
technology



Focus Area - Conclusion



Potential Opportunities for an Institute

Discussion regarding Market Pull, Matching funds, Self-Sustainment, Focus area for \$75 M