Intelligent Manufacturing
Real time based optimization through entire value chain

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Intelligent Manufacturing is Real time Based Optimization

- Craft Manufacturing
- Henry Leland Interchangeable Parts (Gun Industry)
- Henry Ford Assembly Line (Meat Packaging)
- Taiichi Ohno Lean Mfg. (Grocery Business)
- Real-time Optimization (World Wide Web)
Suppliers
Dealers
Customers
Assembly Plants

Real-time Factory

Supervisory Control
Asset Management
Intelligent Maintenance
Quality Control
Sensor Network

Real-time Factory

Suppliers
Assembly Plants
Dealers
Customers

Procurement
Supply Chain
Pricing
Demand Sensing
Risk Management

Real-time Enterprise

Intelligent Manufacturing – Innovation Program
Intelligent Manufacturing SCOPE

- Production (casting, welding, machining, painting...)
- Logistics
- Energy
- Manufacturing System
- Environment
- Supplier Network
- Material
- Product
So ... what does an intelligent Manufacturing System of the future comprise of?

Production (casting, welding, machining, painting......)

Logistics

Energy

Supplier Network

Environment

Some thought starters.......
Infinite Flexibility

- Flexible Tooling
- Smart Equipment
- Automation
- etc.

Agility

- RT scheduling
- RT ordering
- RT Tracking
- etc.

Movability

- Plant in a Box
- Flexible Enterprise
- After-sale Assembly
- etc.

Green +

- Energy
- Environment
- System Metrics
- etc.

Dexterous Robots

Wireless

DVT in a Box – General Assembly

Modeling of Energy Consumption
humans and robots working in harmony
Some questions for Session 1 Participants

What is needed to make manufacturing in this country “more intelligent” and solve the challenge of manufacturing -

What We Want
When We Want
Where We Want
How We Want

What technologies will transform USA manufacturing enterprises into the most attractive global manufacturing options?