Innovation & Entrepreneurship in the Energy and Environment Sector

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Enterprise Commitment to Environment

- CO₂ reduction
  - Supplier footprint
  - ‘4-walls’ targets
  - Products-In-Use performance

- Sustainable biofuels

- Advanced design
  - Advanced aerodynamics
  - Advanced materials
  - Re-engine existing platforms

- Efficient logistics

- Virtual Live Training

- Air Traffic Management

- Solar

- Distributed Power Generation
  - Fuel cells
  - Flywheels

- Boeing Energy business
How Do You Start a Business In Boeing?
Customer’s Problem
Optimize, Protect, and Connect the Electrical Supply Chain

Large renewable installations cause more intermittence

Distributed generation creates local generation options

Demand response

Boeing brings:
- SoS Integration
- Interoperability
- Cyber Security
- AMSE
- Logistics Services
- Brand
- Fed contracting exp

Plug-in electric hybrids create instability

Technology must interoperate
AMSE opportunities

Validated unmet need

Smart grid components
- Transmission
- Distribution
- EA/EE

Cross-cutting capabilities
- Integration/interoperability
- Modeling/simulation
- Command and control
- Information assurance

Real time command and control
Cyber security needs
We Saw a Complex Problem and an Inflection Point in the Industry

Market Summary
- Smart grid is the future of electrical power
- Optimizes the electrical supply chain
- Creates interoperable utility network
- $7B annual market growing at 10%
- Stimulus: $4.5B for smart grid
- Attractive services business model based
- International opportunity

Why Boeing
- Similar to Future Combat Systems and Logistics Command and Control
- Large scale integrator / unique offer
- Supply chain management / cyber
- System-wide situational awareness
- Leverages $600M DoD investment
- Experienced government contractor
Observations

• Know the difference between being an entrepreneur and being entrepreneurial
• Homework is cheap
• Know and leverage your own capabilities and assets
• Get alignment internally
• Create a plan and stick to it, but adapt as needed
• Balance strategy and execution
• Create customer pull
• Hone the value proposition
• Persevere
• It’s not A to B
• Fund at milestones; avoid too much capital
There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order . . .

— Niccolo Machiavelli