



CONCLUSIONS AND SUMMARY

- A Message of Hope -

- Session Eight -

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The Perfect Storm: A catalyst for transformational change . . .

Session Eight Overview:

1. Assumptions for transformational change
2. Historical precedents: It can be done
3. Transformational SWOT factors
4. Pre-conditions for success
5. Transformational new engines for economic growth
6. A closing message of hope

The Perfect Storm: Assumptions for transformational change . . .

1. Current *Perfect Storm* trajectories are unsustainable
2. Upon reaching critical mass, a tipping point will be triggered – rendering the status quo obsolete and unmanageable
3. Over time, the pain of inaction will exceed the pain of acting
4. The political pre-conditions – and will – to act will then be created; a national strategy is now possible.
5. Unparalleled challenges create unparalleled opportunities – as we shall see
6. It has happened before – it can happen again

Historical precedents for successful change are numerous...

Overview: There have been numerous examples of effective American and global responses to daunting challenges. A few examples:

- Pearl Harbor and aftermath – creating the “arsenal of democracy”
- Man-on-the-moon by decade’s end – a massive technological triumph
- The “Montreal Protocol” and ozone depletion – a global call to arms
- Ike’s Interstate Highway System – national infrastructure plans are possible

Key Point: We’ve prevailed over massive challenges before; we can do it again

Transformational SWOT factors – an American perspective. . .

“Face reality as it is, not as we want it to be.”

Strengths:

1. Technology, R&D and innovation
2. Viable platforms to launch efforts
3. Global leader: History of success

Weaknesses:

1. Political gridlock and complacency
2. Short term thinking – lack of strategic focus
3. Slowness to respond; impediments to change

Opportunities:

1. Transformational repositioning
2. Safeguarding the American Dream
3. Intergenerational stewardship

Threats:

1. Educational and institutional decline
2. Myopic inaction, apathy & complacency
3. Quick fixes that trump long-term solutions

Transforming America: Six pre-conditions . . .

1. Strategic National Plan: A focused - not fragmented - effort
2. Pre-emptive legislation - to fast-track programs
3. Funding Strategies - to finance transformational growth:
 - Tax policies - incentives and disincentives - aligned with strategies
4. Manhattan Project-type focus on research, education and training
5. Public and private sector partnerships - highlighting America's core competencies
6. Clear vision of the transformational opportunities in aggressively responding to the Perfect Storm

Transformational engines of economic growth . . .

Growth Sector Criteria: The 23 different growth engines identified herein and organized around four themes are:

1. In direct response to the threats of the Perfect Storm
2. Of sufficient magnitude to transform the entire economy
3. Within the scope of our core competencies, and
4. Inter-connected to maximize effectiveness

Engine #1: Demand reduction and conservation. . .

Opportunity: Conserve energy and scarce resources for sustainable growth

Focal points:

- Building Retrofits
- Smart Systems
- Demand Reduction
- Water Systems
- Behavioral

Growth engines focused on:

- Commercial and residential (McKinsey Report)
- Technologies optimizing energy usages
- Re-using, repurposing and rightsizing – cottage industries
- Water management and purification systems
- Reward and incentive systems, audits and consulting

Benefits:

- Reduced operating costs
- Carbon footprint reduction
- Stewardship and sustainability culture at all levels

Engine #2: Electrical transformation of America . . .

Opportunity: Modernize electro-centric systems - from power plants to end-users - to provide clean, reliable and secure domestically-produced energy

Focal points:

Growth engines focused on:

- | | |
|------------------------|---|
| • Power Stations | Clean energy retrofits or replacements |
| • Electrical Highways | National – smart grid – electrical super-highway |
| • Systems Architecture | Distributed power, intermittency and energy storage |
| • Energy Platforms | Renewal energy supportive infrastructures |
| • Grid Protection | Cyber-threats and terrorist countermeasures |

Benefits:

- Robust, reliable 21st century energy superstructure
- Fueled by clean, domestically-produced energy
- Reduced carbon footprint – when fueled by clean energy systems

Engine #3: Transformed energy and transportation systems . . .

Opportunity: Develop sustainable energy and transportation models less reliant on oil – using blended fuel systems to meet diversified needs

Focal points:

- Renewable Energy
- Nuclear Energy
- Natural Gas
- R & D
- Transportation
- Vehicles
- Infrastructures

Growth engines focused on:

- Fuels, efficiencies and infrastructures
- Retrofits and new generation reactors
- Bridging* fuel systems taking us into the future
- Basic research – heavy emphasis on hydrogen energy
- High speed rail, modernized rail & public transit systems
- Engine and vehicle retrofits; new rolling stock
- Supportive infrastructures for new fuel systems

Benefits:

- National security enhancement
- Economic sustainability and job creation
- Intergenerational stewardship and sustainability

Engine #4: Synthetics and productivity-enhancing industries . . .

Opportunity: Doing more with less; conserving and replacing scarcer resources with synthetics and new productivity-enhancing technologies

Focal points:

- Petroleum
- Renewables
- Agricultural
- Production
- Resources
- Education

Growth engines focused on:

- Synthetic substitutes for oil-based products
- Storage capacity and intermittency solutions
- Feedstock substitutes for fossil fuels
- Robotics, digital, diagnostic and “smart” technologies
- Technologies to reuse, recycle and replace waste
- Research, education & skill-set training to meet needs

Benefits:

- Plays well to America’s core competencies
- Exportable technologies that could benefit the world – change our image
- Intergenerational sustainability and responsibility

Perfect Storm summary and message of hope . . .

1. We are approaching a Perfect Storm of game-changing proportions. Denial is not a strategy
2. We can be a part of the problem or part of the solution. Our response will have a powerful intergenerational impact
3. With great challenges come great transformational opportunities. Properly done, our #1 problem could be labor – not job – shortages
4. The rewards will be great; the alternatives too ugly to imagine
5. Start now: a) Awake, b) engage and c) leverage your efforts.

Please contact: www.WeatheringTheStorm.net for more information

Discussion: Your feedback, please . . .

1. Did this course meet its stated objectives to provide:
 - * A clear understanding of the perfect storm and its impact?
 - * A framework for addressing the storm & connecting the dots?
 - * A portfolio of tools, resources & information to use in the effort?
2. What would you like to have seen more or less of?
3. Open question: What else would you like to comment on?

*My heart-felt thanks to all of you: You have been a wonderful group of folks to share ideas and good conversation with. Best wishes always,
Mike Conley*