



Compete.

Council on
Competitiveness

Technology Leadership & Strategy Initiative Dialogue 32

Summary Report

Lockheed Martin, Fort Worth, TX

June 9, 2026

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Table of Contents

Agenda	2
Participants	6
Summary	9
Welcome and Opening Remarks	10
State of the Council and the Competitiveness Landscape	12
Advanced Innovation & Manufacturing (AIM) Zones	17
What's Next for the TLSI	21
Council on Competitiveness Board, Executive Committee, General Members, Partners, Fellows & Staff	23

Agenda

MORNING

9:00 Welcome Remarks and Roundtable Introduction

Following a brief welcome and introductions from the TLSI Co-Chairs and attendees, a leader from Lockheed Martin will introduce the Fort Worth facility: its role within Lockheed Martin's overall enterprise, and its significance within the nation's industrial base.

The Hon. Deborah L. Wince-Smith
President and CEO, Council on Competitiveness

Dr. Tahllee Baynard
Vice President, System Prototypes,
Lockheed Martin

Dr. Sally Morton
Executive Vice President, Arizona State
Knowledge Enterprise, Arizona State University

Dr. Craig Martell
Vice President and Chief Technology Officer,
Lockheed Martin

Welcome from Lockheed Martin Executive Host:
Mr. Jerry Lambert
Vice President, Combat Systems

9:30 State of the Council and the U.S. Competitiveness Landscape

A strategic update on Council priorities and an overview of competitiveness-related policy developments.

The Hon. Deborah L. Wince-Smith
President and CEO, Council on Competitiveness

Open Discussion and Key Issues

An open exchange focusing on the major science, tech, and innovation trends shaping TLSI members' competitiveness priorities.

1. What constraints, gaps, or misalignments are limiting your ability to advance innovation, investment, or deployment inside your organization, industry, or region?
2. What one or two policy changes or actions would most meaningfully improve your innovation capability and competitiveness?

9:50 40th Anniversary Competitiveness Landscape: Framing the Next Era

A highlight of select findings from the Council's *draft* 40th anniversary competitiveness landscape review.

Introduction

The Hon. Deborah L. Wince-Smith
President and CEO, Council on Competitiveness

Kick-off Discussants

Dr. Andre W. Marshall

Vice President for Research, Innovation, and Economic Impact, George Mason University

Dr. Todd Pray

Chief Strategic Partnerships Officer, Lawrence Berkeley National Laboratory

Ms. Jaclyn Shaw

Senior Associate Vice Provost, Research, Strategy, and Operations, Tufts University

1. What emerging technology, industrial, and/or geopolitical shifts pose the greatest risk to—or opportunity for—U.S. competitiveness?
2. How are AI and other technologies reshaping the competitiveness arena—for example, the nature of work, talent, and organizational capacity in institutions; or, the nature of science, research, and the innovation process?
3. Are there opportunities for the TLSI to provide guidance, next practices to shape national strategy, influence policy, drive actionable outcomes?

Open Discussion & Key Issues

Following kick-off discussant remarks, the conversation opens to the roundtable.

10:30 Coffee Break

10:45 40th Anniversary Competitiveness Recommendations (e.g. American Innovation and Manufacturing (AIM) Zones)

The Council Board has charged membership to ideate, develop and deploy transformational, “10x” recommendations to meet the global competitiveness challenges and opportunities facing the United States.

This session will explore a recommendation that has emerged within membership: the American Innovation and Manufacturing (AIM) Zones.

AIM Zones would be strategically designed regional ecosystems to accelerate and scale the entire research, development, manufacturing and innovation value chain for emergent, critical technologies.

This session will introduce the concept to TLSI members—seeking critique and ideas on how to frame AIM Zones across the United States.

Introduction

The Hon. Deborah L. Wince-Smith

President and CEO, Council on Competitiveness

Kick-Off Discussants

Dr. Tom Campbell

Founder and CEO, FutureGrasp

Dr. Peter Dorhout

Vice President for Research, Iowa State University

Dr. Matt Hulver

Vice President for Research and Partnerships,
University of Oklahoma

Mr. Pete Isaac

Senior Vice President, Ancora

Dr. Massimo Ruzzene

Vice Chancellor, Research and Innovation,
and Dean of the Institutes, University of Colorado
Boulder

Open Discussion & Key Issues

1. What fundamentally differentiates AIM Zones from past U.S. competitiveness strategies—and what hard design choices (governance, incentives, authority, and accountability) are needed to make them succeed at scale?
2. If AIM Zones are to become a defining pillar of U.S. competitiveness, what structural and political conditions must be created, or overcome, to enable sustained alignment of federal, private-sector, and regional interests over time?
3. Where should the United States deliberately concentrate early AIM Zone investment—across technologies, industries, and geographies—to generate the greatest advantage in innovation, manufacturing capacity, and national security resilience?

11:45 What's Next for the TLSI

In light of the Council's 40th anniversary and the findings from the competitiveness landscape report, what might frame the next 1-2 years of work for the TLSI?

1. What is the most important “next big idea” TLSI should take on to strengthen U.S. innovation and competitiveness over the next decade?
2. What bold action or shift in approach is required to translate ideas into national capacity?
3. Where is TLSI positioned to have the greatest impact across technology, industry, financial, energy, and workforce systems?

Introduction**The Hon. Deborah L. Wince-Smith**

President and CEO, Council on Competitiveness

AFTERNOON**12:30 Lunch****1:20 Reflections on the Day**

A synthesis of the day's discussions.

Dr. Tahllee Baynard

Vice President, System Prototypes,
Lockheed Martin

Dr. Sally Morton

Executive Vice President, Arizona State
Knowledge Enterprise, Arizona State University

Moderator: The Hon. Deborah L. Wince-Smith

President and CEO, Council on Competitiveness

1:45 Innovation Snapshot: Advanced Manufacturing at Scale

Leaders from Lockheed Martin's F-35 production facility will share approaches to innovation in highly complex manufacturing environments and suggest lessons applicable to other advanced manufacturing systems.

Remarks

Dr. Tahllee Baynard

Vice President, System Prototypes,
Lockheed Martin

2:00 Transition to and Tour of Lockheed Martin F-35 Lightning II Manufacturing Facility

Kick-off Discussants

Dr. Parag Chitnis

Vice President for Research and Economic
Development, University of Wyoming

Dr. Sean Jones

Deputy Laboratory Director for Science and
Technology, Argonne National Laboratory

Mr. Mark Minevich

President, Going Global Ventures

Dr. Jeff Rhoads

Vice President for Research, University
of Notre Dame

Dr. Vijay Swarup

Chief Technology Officer (retired), Exxon Mobil

Open Discussion & Key Issues

Following kick-off discussant remarks, the conversation opens to the roundtable.

3:30 Dialogue Concludes

Participants

TLSI CO-CHAIRS & COUNCIL LEADERSHIP

Dr. Tahllee Baynard

Vice President
System Prototypes
Lockheed Martin

Dr. Sally C. Morton

Executive Vice President
Knowledge Enterprise
Arizona State University

EXECUTIVE HOST

Mr. Jerry Lambert

Vice President
Combat Systems Lockheed Martin

The Hon. Deborah L. Wince-Smith

President and CEO
Council on Competitiveness

PARTICIPANTS

Dr. Tom Campbell

Founder and CEO
FutureGrasp

Dr. Parag Chitnis

Vice President
Research and Economic Development
University of Wyoming

Dr. Peter Dorhout

Vice President
Research
Iowa State University

Dr. Lee Ellen Drechsler

Senior Vice President
Corporate Research and Development
The Procter & Gamble Company

Dr. Kingsley Fregene

Director
Technology Integration
Lockheed Martin

Dr. Natalie Gogotsi

Materials Engineer
Lockheed Martin

Dr. Matt Hulver

Vice President
Research and Partnerships
The University of Oklahoma

Mr. Pete Isaac

Senior Vice President
Ancora

Dr. Sean Jones

Deputy Laboratory Director
Science and Technology
Argonne National Laboratory

Dr. Sam Malloy

Director
Research and Development
ASCEND Engine
Innosphere

Dr. Andre Marshall

Vice President
Research, Innovation, and Economic Impact
George Mason University

Dr. Craig Martell

Vice President
Chief Technology Officer
Lockheed Martin

Ms. Ann McMahon

Senior Director
Council on Competitiveness

Mr. Mark Minevich

President and General Partner
Going Global Ventures

Mr. Michael Nelson

Vice President
Council on Competitiveness

Dr. Todd Pray

Chief Strategic Partnerships Officer
Lawrence Berkeley National Laboratory

Mr. Luc Reynaert

Chief Product Supply Officer
The Procter & Gamble Company



Photo courtesy of Lockheed Martin.

Air Force Plant 4, Lockheed Martin's facility in Fort Worth, Texas, where the F-35 Lightning II is manufactured."

Summary

The Council on Competitiveness convened the 32nd Dialogue of its Technology Leadership & Strategy Initiative (TLSI) on June 9 at Lockheed Martin's Fort Worth, Texas facility, the company's headquarters for its aerospace division, and where it has built F-16s, C-130s, and several other military airplanes. Leaders from Lockheed Martin hosted the Dialogue, bringing together stakeholders across industry, academia, and national laboratories for an exchange of ideas around challenges and opportunities to advance U.S. competitiveness, and showcasing an afternoon tour of the F-35 Lightning II production line.

The Dialogue comprised three sessions:

1. Welcome remarks, roundtable introductions, and presentation of a draft competitiveness landscape report.
2. Preview of draft "10x" policy recommendations for the Council's 40th anniversary and 2026 National Competitiveness Forum – including the concept of Advanced Innovation & Manufacturing (AIM) Zones.
3. A discussion on next steps for the TLSI.

Welcome and Opening Remarks

The TLSI Co-Chairs and executive hosts opened the day with stage-setting remarks.

Dr. Tahllee Baynard, Vice President for System Prototypes at Lockheed Martin and TLSI Co-Chair, framed the day's central challenge in operational terms: how do you achieve innovation at scale, across a complex supply chain, and do it faster than your competitors?

Dr. Sally Morton, Executive Vice President of the Knowledge Enterprise at Arizona State University and TLSI Co-Chair, focused her opening comments on the pressures facing the research university community. She identified four imperatives for universities navigating this moment:

1. Conducting research grounded in public values;
2. Communicating that work more effectively;
3. Partnering more deeply with national laboratories; and
4. Finding ways to use AI to accelerate the pace of discovery.

She also pointed to the Phoenix metropolitan area as a working example of place-based innovation at scale, with more than \$220 billion in investment and growing.

Dr. Craig Martell, Vice President and Chief Technology Officer of Lockheed Martin, used the F-35 production line as a metaphor for the broader challenge facing U.S. competitiveness. Customer nations own the aircraft, built in variants tailored to allied military services around the world. But he argued the F-35 program also represents a legacy model: more than a century of manufacturing logic embedded in processes, contracts, and supply chains not designed for speed or agility. The United States has lost manufacturing leadership in part because it has not been agile enough to adapt. Lockheed Martin is evolving to meet the moment, but no one yet knows exactly how to make at a faster pace something as large, complex, and consequential as the F-35. However, Arizona's semiconductor ecosystem, as Dr. Morton had previously mentioned in her opening remarks, is a signal of what a different model might look like.

Mr. Jerry Lambert, Vice President for Combat Systems at Lockheed Martin, served as the TLSI Dialogue's executive host for the day on behalf of Lockheed Martin. Mr. Lambert welcomed participants and oriented the group to the significance of the Fort Worth facility, describing a complex that manufactures across the full range of Lockheed Martin's aeronautics portfolio, including the C-130J, C-5M, F-16, F-22, and the F-35. Mr. Lambert characterized the aeronautics



Photo Credit: Lockheed Martin. Left to right, early arrivals to TLSI Dialogue 32: Dr. Sally C. Morton, Executive Vice President, Knowledge Enterprise, Arizona State University, and Co-Chair, TLSI; Dr. Jeff Rhoads, Vice President for Research, University of Notre Dame; Ms. Ann McMahon, Senior Director, Council on Competitiveness; Dr. Craig Martell, Vice President, Chief Technology Officer, Lockheed Martin; Dr. Tom Campbell, Founder and CEO, FutureGrasp; The Hon. Deborah L. Wince-Smith, President and CEO, Council on Competitiveness; Dr. Massimo Ruzzene, Senior Vice Chancellor, Research and Innovation, Dean of the Institutes, University of Colorado Boulder; Dr. Kingsley Fregene, Director, Technology Integration, Lockheed Martin; Dr. Natalie Gogotsi, Materials Engineer, Lockheed Martin; Mr. Michael Nelson, Vice President, Council on Competitiveness; Dr. Tahllee Baynard, Vice President, System Prototypes, Lockheed Martin, and Co-Chair, TLSI; and Dr. Vijay Swarup, Chief Technology Officer (Retired), ExxonMobil.

business as the company's largest enterprise, employing 35,000 people across eight locations. In fiscal year 2025, the Fort Worth facility delivered 191 F-35 aircraft, across three platforms (the A, Air Force; B, Marine Corps; and C, Navy), the highest annual output in the program's history.

Mr. Lambert also spoke to the facility's role in unmanned and next-generation systems development, noting growing international demand for

Unmanned Aircraft Systems (UAS) platforms and describing the F-22 as an increasingly important testbed for proving emerging technologies before broader deployment. His remarks set the tone for a day in which the gap between invention and production at scale was a constant reference point.

State of the Council and the Competitiveness Landscape

Presenter

The Hon. Deborah L. Wince-Smith

President and Chief Executive Officer,
Council on Competitiveness

Kick-Off Discussants

Dr. Andre W. Marshall

Vice President for Research, Innovation, and
Economic Impact, George Mason University

Dr. Todd Pray

Chief Strategic Partnerships Officer, Lawrence Berkeley National Laboratory

Ms. Jaclyn Shaw

Senior Associate Vice Provost, Research,
Strategy, and Operations, Tufts University

Following welcome remarks and introductions, The Hon. Deborah L. Wince-Smith provided a strategic update on Council activities and priorities, as well as an orientation to a developing, new competitiveness landscape report for the Council's 40th anniversary. The draft provides a platform for assessing the state of U.S. and global competitiveness, and is informing development of a set of transformational "10x" recommendations.

Ms. Wince-Smith stated when the Council was founded in 1986, Japan was the United States' principal industrial competitor, and concerns centered largely on productivity, manufacturing strength, and economic performance. Today's competitive environment is far more complex. The convergence of artificial intelligence, biotechnology, advanced computing, energy, and advanced manufacturing is reshaping the foundations of economic power, while strategic competition among nations is intensifying. Because these technologies are increasingly dual-use, the stakes extend well beyond markets and trade. Competitiveness has become inseparable from national security, making the ability to invent, scale, manufacture, and deploy emerging technologies one of the defining strategic challenges of our time.

She then highlighted the Council's [**Competitiveness Conversations Across America**](#) series, an initiative designed to broaden the geography and deepen the demography of U.S. innovation capacities and capabilities. Through regional summits, the Council is examining and highlighting the best and "next" practices emerging in a new evolution of "place-making" innovation—and amplifying how forward-looking regions are building distinctive innovation ecosystems, contributing to local, state, regional, and national productivity, security, and prosperity. Recent Conversations have focused on [**Maryland's**](#) emergence as a hub for AI, quantum, and advanced computing;

[Nebraska's](#) leadership potential in the bioeconomy; and an upcoming gathering in [San Diego](#) examining the region's "strategic innovation stack" of AI, advanced computing, energy, biotechnology, autonomy, and defense technologies. Ms. Wince-Smith noted the next era of U.S. competitiveness will require mobilizing more of the nation's talent, institutions, and productive capacity, making regional innovation ecosystems an increasingly important source of national strength.

Concluding her Council overview, Ms. Wince-Smith stressed the Council's mission has never been more relevant. As technological convergence, geopolitical competition, and economic transformation accelerate, innovation, productivity, national security, and shared prosperity have become inextricably linked. She noted the nation needs a trusted, nonpartisan, multisector institution capable of bringing together leaders from business, academia, and labor to shape a common competitiveness agenda and ensure the private sector has a strong and respected voice in Washington.

She then turned to a presentation of the draft competitiveness landscape and walked participants through data across seven domains, including: 1) U.S. competitive advantages, 2) global R&D investment trends, 3) manufacturing capacity, 4) energy, 5) economic statecraft, 6) innovation workforce, and 7) dual-use technologies.

Several data points anchored the discussion that followed:

- China surpassed the United States in gross domestic R&D spending in 2024, the first time in the post-war era the United States has not led.
- China's trade surplus reached \$1.2 trillion in 2025, becoming the first country to cross the \$1 trillion threshold.
- China leads production in 7 of 10 advanced industries and has expanded aggressively in biotechnology, now accounting for nearly a quarter of global pharmaceutical value-added.
- The United States retains significant advantages: 8 of 10 of the world's most profitable companies are U.S.-based; the dollar remains the dominant global reserve currency; and the United States leads in venture capital deal value, with 64 percent of the global share.
- The United States faces acute skilled labor shortages, with a projected 5.25 million worker gap by 2032 and significant declines in the STEM teacher pipeline.

Kick-Off Discussants Key Observations

The three discussants offered structured responses to the draft report, setting up a round-table conversation.

Dr. Andre W. Marshall organized his remarks around three takeaways. First, competitiveness is a system challenge, not a sectoral one: the report's strength, he argued, lies in its horizontal/vertical structure, linking talent, infrastructure, and policy to specific technology domains. Second, he argued the most consequential U.S. vulnerability is not insufficient invention but insufficient speed to scale. The country remains strong upstream in science and frontier innovation but is exposed downstream in infrastructure, manufacturing, and deployment. Third, AI is not only a force multiplier but a stress test on the entire system, revealing bottlenecks in energy, infrastructure, and workforce that extend well beyond AI itself. He also offered a structural recommendation: the report should more explicitly foreground the horizontals-and-verticals framework as an organizing logic for resource allocation, not just as stage-setting.

Dr. Todd Pray drew on his background in biotech and his laboratory's experience managing inbound industry collaborations to raise three concerns. The first concern revolves around AI safety and governance. Beyond cybersecurity and data protection, the United States needs a regulatory framework for AI in domestic infrastructure analogous to what the FDA provides for drugs. The

second concern relates to the untapped role of federally funded research centers beyond the U.S. Department of Energy National Laboratories, including NIH, FFRDCs, and military research facilities, all of which have underutilized scaling and piloting capacity for industrial development. The third concern is connected to the risk facing the innovation pipeline from declining federal research funding. The upstream output on which companies and laboratories depend originates from federally supported fundamental research. And that pipeline is under pressure.

Ms. Jaclyn Shaw reinforced the points related to scaling, and she raised two additional issues. One issue is the difficulty some university communities have in framing national competitiveness as a shared institutional priority, a cultural challenge with consequences for research alignment and partnership. The other issue is the structural tension arising from reliance on a declared competitive rival for the significant student revenue that funds graduate research. The problem is not one any single institution can resolve, but it is one the Council can help name and address at the policy level.

Open Roundtable: Key Themes

The roundtable produced a wide-ranging exchange with several recurring themes:

On the competitiveness framing, participants broadly endorsed the idea invention is insufficient and that U.S. competitiveness must encompass the capability to build, deploy, and manufacture at speed and scale. Participants raised examples—from COVID vaccine development, to Ukraine's improvised drone capability—to illustrate speed under urgency. But, reflecting on Ukraine's military strategy of using low-cost drones, Dr. Craig Martell, Vice President and Chief Technology Officer, Lockheed Martin, questioned what approach the country would have used with a longer planning horizon and greater resources.

Discussion then turned to research funding. Attendees agreed that the erosion of federal support for basic research creates a pipeline problem with long lag times and severe downstream consequences. Multiple participants noted private R&D, while substantial, is concentrated in near-term development and cannot substitute for the fundamental research that generates the discoveries private investment later commercializes.

On culture and institutional alignment, Dr. Jeff Rhoads, Vice President of Research at the University of Notre Dame, elevated the importance of fostering cultural integration across industry, national laboratories, and academia, arguing that competitiveness depends not only on technical capabilities but also the ability of institutions with different missions, incentives, and operating models to collaborate effectively, share knowledge, and move innovations more rapidly from discovery to deployment. Notre Dame's model of physically embedding researchers from national laboratories and major companies within the university, operating with the same access as faculty, is a working proof of this concept. Dr. Rhoads pointed to the ROTC model, in which military officers-in-training are embedded within civilian university communities, as a useful example for national competitiveness. He suggested a similar approach could more fully integrate industry and national laboratory partners into campus life, strengthening collaboration, talent development, and technology transfer.

On capital alignment, Mr. Mark Minevich, President of Going Global Ventures, noted the United States has no shortage of investable capital. The constraint is directing it toward the industrial and infrastructure challenges the Council is addressing rather than concentrating it in frontier AI model development. He pointed to major private equity commitments to AI infrastructure and data centers as evidence investors can mobilize patient capital

“The question is no longer whether the United States can invent first. It is whether it can build, deploy, and manufacture fast enough. We need to rethink the entire system.”

Dr. Andre Marshall

Vice President for Research, Innovation, and
Economic Impact, George Mason University

at scale. He argued further the right conditions, including tax incentives, regulatory clarity, and governance structures, could redirect a meaningful share of capital toward advanced manufacturing and critical technology development.

On international strategy, Dr. Martell pushed back on a purely U.S.-centric framing: allied nations want to be genuine partners in the innovation system, not simply recipients of technology transfer or junior participants in a U.S.-led program. Any serious competitiveness strategy must include a credible international partnership architecture. Multiple participants, including Dr. Vijay Swarup, Chief Technology Officer (retired), Exxon Mobil, raised India as a nation whose alignment with the U.S. innovation system could prove strategically significant, both as a source of talent and as a manufacturing and market partner.



Photo courtesy of Lockheed Martin.

Air Force Plant 4 in Fort Worth, TX, serves as the headquarters for Lockheed Martin Aeronautics.

Advanced Innovation & Manufacturing (AIM) Zones

Introduction

The Hon. Deborah L. Wince-Smith

President and Chief Executive Officer,
Council on Competitiveness

Kick-Off Discussants

Dr. Tom Campbell

Founder and CEO, FutureGrasp

Dr. Peter Dorhout

Vice President for Research, Iowa
State University

Dr. Matt Hulver

Vice President for Research and Partnerships, University of Oklahoma

Mr. Pete Isaac

Senior Vice President, Ancora

Dr. Massimo Ruzzene

Senior Vice Chancellor for Research and Innovation, University of Colorado Boulder

The mid-morning session introduced one of the “10x” transformative recommendations currently under development by the Council on Competitiveness for its 40th anniversary and 2026 National Competitiveness Forum—emergent from the landscape report and shaped by the Council’s

Board, Executive Committee, and National Commissioners: “Advanced Innovation and Manufacturing (AIM) Zones.”

Ms. Wince-Smith framed the concept’s genesis, emphasizing the concept is not a rehash to traditional enterprise zones or grant programs. Rather, the concept is more strategic and encompassing, with greater similarity to the efforts to transform and build regions and cities like the greater Shenzhen metropolitan area: a geographic concentration of aligned policy, infrastructure, capital, talent, and institutional commitment, producing at scale what no single actor can produce alone.

As conceived in the landscape report, AIM Zones would be geographically anchored ecosystems that integrate research institutions, manufacturing capacity, energy infrastructure, workforce pipelines, and a supportive regulatory environment into an end-to-end technology development pipeline, with each zone specific to a critical sector. At least six enabling pillars would be critical to any given Zone, including:

1. Skilled workforce;
2. Conducive and supporting regulatory environment;
3. Strategic governance;
4. Investment and tax incentives;
5. Infrastructure (including housing); and
6. Land.

Dialogue participants invoked the Arizona semiconductor ecosystem as close to an existing model in the United States, having leveraged CHIPS Act investment, city infrastructure commitment, a university-industry workforce partnership, and a streamlined permitting process—all coordinated under a single governance framework.

What Makes AIM Zones Different

Dr. Peter Dorhout proposed a concept for a National Innovation Recovery Authority as a governance framework for AIM Zones, drawing on the Tennessee Valley Authority (TVA) model but designed for a different era. The key point is that an authority, as a governmental organizational form, carries distinct powers and regulatory standing that a program office or interagency working group does not. Authorities like TVA are established by Congress with independent powers to plan, finance, acquire assets, partner, and execute large-scale projects across multiple jurisdictions. This governance structure allows authorities to coordinate across agencies, align public and private investment, and move more quickly from strategy to implementation. Dr. Dorhout also reviewed the historical record of enterprise zone experiments, noting successes were characterized by genuine ecosystem development, while failures were marked by rearranging existing activity rather than generating net new capacity.

Dr. Tom Campbell, drawing on a commissioned study of the core characteristics of Silicon Valley's success, cautioned against underestimating the complexity of replication. The six factors he identified that made Silicon Valley such a powerhouse from his study:

1. Include high-technology focus;
2. Startup culture and network density;
3. Active investor community;
4. World-class academic institutions;

5. Government and military support; and
6. High quality of life.

Each of these factors are individually present in many U.S. regions, but rarely concentrated together.

Zones that do not honestly assess which of these elements they lack, and invest in closing those gaps, are likely to achieve only partial success, he argued.

Dr. Massimo Ruzzene offered the Colorado-Wyoming-New Mexico corridor as a case study in what a quantum AIM Zone might look like.

Dr. Ruzzene pointed to the region's high concentration of federal laboratories—including the University of Colorado Boulder's 60-plus years of National Institute of Standards and Technology (NIST) collaboration through the JILA Institute, formerly known as the Joint Institute for Laboratory Astrophysics—a growing commercial quantum ecosystem, and strong connections to aerospace and space applications as examples of the concentration of quantum assets growing in the region.

Dr. Ruzzene also raised a design question that applies across AIM Zones: whether the right model separates R&D from manufacturing by geography, as market forces often drive, or insist on co-location. Luc Reynaert, Chief Product Supply Officer of The Proctor & Gamble Company, noted that proximity to consumption rather than proximity to R&D is often critical. Others agreed that each sector will vary based on the supply chain structure.

Dr. Matt Hulver highlighted the importance of durable, mission-focused funding mechanisms. He cited both MIT Lincoln Laboratory and the Johns Hopkins University Applied Physics Laboratory (APL) as models: institutions created to serve a specific national mission with decadal funding commitments rather than grant cycles. The National Science Foundation Engines and EDA

“If you do not solve the manufacturing piece, you do not actually solve the competitiveness problem.”

Dr. Tahllee Baynard

Vice President, System Prototypes, Lockheed Martin

Tech Hubs programs, while directionally aligned, have been funded well below authorization levels and structured in ways that create competition between regions rather than complementarity.

Design Questions the Group Flagged

The roundtable surfaced a set of design questions for the Council to consider in further developing the AIM Zone concept:

- **Governance structure:** What entity has the authority to fast-track permitting, cut regulatory timelines, and coordinate across federal, state, and local actors? The CHIPS Program Office was cited as a recent model; the TVA as a longer-horizon precedent.
- **Technology selection:** Who decides which technologies anchor which zones, and by what criteria? The group broadly favored zones with strong existing assets rather than greenfield designations.
- **Capital formation:** How are AIM Zones financed? The consensus view was the answer must involve multiple streams, including federal seed funding, state co-investment, tax incentives, and private capital directed through appropriate vehicles. Several participants noted patient capital for infrastructure is available but needs the right governance and return structure.
- **Geographic scope:** Should zones be state-level or multi-state regional? The Illinois-Indiana-Wisconsin corridor for advanced manufacturing and the Colorado-Wyoming-New Mexico corridor for quantum were raised as examples of regions where cross-state coordination might produce more than any single state could deliver alone.
- **Supply chain integration:** Dr. Ruzzene noted 80 percent of the supply chain for quantum systems is currently international. Zones that do not actively develop domestic supply chains for critical sub-components will remain vulnerable even after significant zone investment.
- **Complementarity with existing programs:** Several participants cautioned against reinventing pre-existing connective tissue (e.g., NSF Engines, Tech Hubs, Manufacturing Innovation Institutes). A goal should be to amplify and complete, not to compete.
- **Energy as a foundational design element:** Dr. Swarup and Dr. Jones, Deputy Laboratory Director for Science and Technology at Argonne National Laboratory, argued energy should be treated not only as a core enabler within every AIM Zone. In fact, an AIM Zone(s) devoted to energy manufacturing and production should be an option, given the U.S. competitive advantage in energy infrastructure.



*Photo by Chris Hanoch, courtesy
of Lockheed Martin.*

*Estephany Rascon using a scanner
at Lockheed Martin Aeronautics Company's
Fort Worth, TX, location.*

What's Next for the TLSI

Introduction

The Hon. Deborah L. Wince-Smith

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Kick-Off Discussants

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Vice President for Research, University
of Notre Dame

Dr. Vijay Swarup

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The final session, before the F-35 production facility tour, addressed the TLSI's future direction. Ms. Wince-Smith opened by noting TLSI has been an intellectual engine of the Council's most consequential policy contributions, including driving the America COMPETES Act, informing the CHIPS and Science Act, and other major policy developments. She added that the Council's 40th anniversary year presents both an opportunity and an obligation to chart the next generation of ideas and actions that will strengthen U.S. competitiveness.

Discussants were asked to reflect on the most important next big idea for TLSI, the boldest shift in approach needed to translate ideas into national capacity, and where TLSI is positioned to have the greatest impact.

Key Themes from Discussants and Open Roundtable

Dr. Parag Chitnis opened by raising institutional agility as a structural constraint. The traditional university model was designed for a different pace of discovery and a different model of industry engagement. AI and the accelerating convergence of technologies are compressing the cycle from research to deployment in ways that current university structures cannot easily match. The risk is that universities become less relevant to the

“Education and collaboration have driven all of the great transformational moments in American innovation. Get those two right and transformation follows.”

Dr. Vijay Swarup

Chief Technology Officer (Retired), Exxon Mobil

national innovation system not because they lack talent or ideas but because they cannot adapt at the speed the moment requires.

Dr. Sean Jones described the Department of Energy’s current organizational orientation, with emphasis on scale, speed, and reduction of barriers to collaboration, as broadly aligned with the AIM Zone concept. He proposed a companion policy paper, developed over the next year, could translate the AIM Zone concept into specific enabling policy changes: how to think about interstate competition and cooperation, how to structure governance to reduce regulatory friction, and how to align energy strategy across zones. He also raised the opportunity for TLSI to engage with the G7 Science track and other multilateral forums as part of a more explicit international partnership strategy.

Dr. Jeff Rhoads of Notre Dame returned to the cultural change argument raised in the morning session and proposed a specific TLSI action: modeling the behavior the country needs. The embedded researcher model at Notre Dame, in which national laboratory and industry researchers work daily alongside faculty and graduate students rather than in separate facilities, is producing the organic conversations. His challenge to the group was to similarly look for opportunities to make the TLSI conversations more continuous.

Mr. Minevich argued the defining constraint of the next decade is power and energy availability. AI is not a software phenomenon; it is heavy industry requiring gigawatts of power and physical infrastructure at scale. Mr. Minevich proposed TLSI’s most distinctive contribution might be at the intersection of AI governance and national security: establishing who sets the rules for sovereign AI infrastructure, how trust and provenance are established in AI systems embedded in critical applications, and what governance model the United States should champion internationally.

Dr. Vijay Swarup offered a historical grounding for the discussion. Previous U.S. transformations succeeded through a combination of government as first customer or market-maker, industry as operator, and universities as fundamental research partners. The roles were distinct but the relationships were tight. Dr. Swarup identified four things that have genuinely changed: the shift from linear innovation to circular ecosystems; from single-discipline research to systems integration across disciplines; from build-whenever siting to community-aware and resource-constrained siting; and from physical prototyping to AI-accelerated design. TLSI’s contribution, he suggested, should be mapping those differences honestly and building the blueprint that accounts for them.

The roundtable also surfaced strong support for renewing TLSI’s international engagement strategy, with Japan, the United Kingdom, Germany, Australia, and India named as priority partners. Dr. Swarup proposed a dedicated TLSI engagement with the Indian energy ministry as a near-term step.

The Dialogue concluded with a tour of Lockheed Martin’s F-35 Lightning II Manufacturing facility. The tour concluded with a brief Q&A session covering key workforce themes, including talent pipeline development, training and upskilling, and the role of labor unions represented at the facility.

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Contact

For more information, please contact:

Mr. Chad Evans

Executive Vice President and
Chief Operating Officer
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cevens@compete.org

Council on Competitiveness

900 17th Street, NW
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