



Sandia National Laboratories
Exceptional service in the national interest

ENABLING INNOVATION IN ALL ASPECTS OF THE ENTERPRISE



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Sandia National Laboratories is a multi-mission laboratory managed and operated by National Technology and Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.






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


1

Agenda



- Sandia National Laboratories Overview
- Key Principles for Enabling Innovation
 -  Drive from the top
 -  Empower the workforce
 -  Reward and recognize behaviors
 -  Drive a spectrum from daily to formal innovation
 -  Embed in all areas of the business
- Questions



2

OUR HISTORY IS TRACED TO THE MANHATTAN PROJECT

THE WHITE HOUSE
WASHINGTON
May 13, 1949

Dear Mr. Wilson:

I am informed that the Atomic Energy Commission intends to ask that the Bell Telephone Laboratories accept under contract the direction of the Sandia Laboratory at Albuquerque, New Mexico.

This operation, which is a vital segment of the atomic weapons program, is of extreme importance and urgency in the national defense, and should have the best possible technical direction.

I hope that after you have heard more in detail from the Atomic Energy Commission, your organization will find it possible to undertake this task. **In my opinion you have here an opportunity to render an exceptional service in the national interest.**

I am writing a similar note direct to Dr. O. S. Buckley.

Very sincerely yours,
Harry Truman

Mr. Leroy A. Wilson,
President,
American Telephone and Telegraph Company,
150 Broadway,
New York 7, N. Y.

- July 1945: Los Alamos creates Z Division
 - Nonnuclear component engineering
 - Federally Funded Research and Development Center
- November 1, 1949: Sandia Laboratory established
- March 8, 1956: Sandia California officially opened
 - AT&T: 1949-1993
 - Martin Marietta: 1993-1995
 - Lockheed Martin: 1995-2017
 - Honeywell: 2017-present

- Facilities Across - 15900 Employees - \$4.4B Annual Revenue

Main Sites:
Albuquerque, New Mexico
Livermore, California

NATIONAL SECURITY IS OUR MISSION

Sandia delivers essential science and technology to address the nation's most challenging security issues



PURPOSE	We render exceptional service in the national interest
VISION	We make Sandia a leader in keeping the world safe and secure
MISSION	We use innovative science and engineering to anticipate and solve the most challenging national security problems
OBJECTIVE	In 10 years, we will have unleashed high-velocity engineering to counter global threats

5

5

SANDIA HAS FIVE MAJOR PROGRAM PORTFOLIOS








- Advanced Science & Technology
- Nuclear Deterrence
- Global Security
- National Security Programs
- Energy & Homeland Security

6

6

Key Principles for Enabling Innovation

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7

Drive From The Top

- NNSA's Enhanced Mission Delivery Initiative to significantly improve efficiency and effectiveness of ND programs
- Sandia's Strategic Goals:
 - Accelerate Innovation
 - Modern Engineering
- Leadership commitment at all levels
- Accountability
- Innovation call to action by the Laboratory Director



8

Drive From The Top

LABS STRATEGY GOAL Accelerate Innovation

By FY27, Sandia will be a **leader in scientific, engineering and operational innovation** and an employer of choice for highly innovative and creative talent.

WHY innovation?

To counter threats, Sandia must be nimble in generating and applying novel ideas.

HOW will we accelerate innovation?

Elements to achieve this Goal:

- Innovation Strategies
- Innovation Tools
- Innovation Skill-Building
- People & Culture
- Innovation Pilots
- Exemplars

WHAT is innovation?

Innovation is developing and applying an idea, expert knowledge, or technology in a novel way to address a specific challenge and achieves value for the laboratories or our partners.

Highly innovative and creative talent has courage to challenge the status quo and is enabled by an environment and culture that supports and celebrates risk-taking and failure in pursuit of new and improved solutions to business and technical challenges.

Empower the Workforce

Unleash Excellence: Excellence vs Perfection Behaviors

When focused on excellence rather than perfection, Sandia employees have more opportunities to take intelligent risks, challenge the status quo, experiment, fail as a means of learning and suggest red tape-cutting efforts.

		CULTURAL ATTITUDES		
		INTELLIGENT RISK TAKING = INNOVATION SUCCESS <i>Sandians see intelligent risk taking as crucial to the innovation process</i>	EXPERIMENTATION > GUARANTEED SUCCESS <i>Sandians value experimentation over guaranteed success</i>	FAILURE = LEARNING <i>Sandians see failure as a means of learning and growing</i>
CULTURAL BEHAVIORS	COURAGE <i>Act courageously to discover and convey truth to achieve the mission today and into the future</i>	We recognize and reward intelligent risk taking before an outcome is known	We challenge the status-quo to constantly pursue learning and excellence	We expect to fail or to be wrong, and we view it as an opportunity to improve
	CONNECTED <i>Connect with others; leveraging diverse perspectives that are guided by shared purpose to succeed collaboratively</i>	We leverage diverse perspectives and engage customers to deliver exceptional results	We seek feedback and collaboration to improve our critical thinking	We share our own failures (and successes) to help others
	PURPOSE-DRIVEN <i>Serve the nation with purpose, passion, tenacity, and creativity</i>	We think of the N th order impacts (negative and positive) to our mission	We take data-informed intelligent risks to drive down uncertainty	We learn through iteration and failure

Empower the Workforce

Unleash Excellence: Crowdsourcing for Ideas

- System for all members of the workforce to submit ideas for cutting red-tape and increasing the efficiency and effectiveness for how we do work.
- Over 300 ideas submitted to date, approximately 20% being implemented.



People and Culture Strategy

- Aimed at maximizing the success of our people and is focused on the continued care of our people and the maximization of organizational performance.
- Four pillars aimed at examining and enhancing key elements that impact success of every MOW.



Workforce Capabilities



Workforce Effectiveness



Organizational Culture



Employee Health and Well-Being

11

Reward and Recognize Behaviors



New recognition categories added for Innovation and Operational Excellence.



Behaviors as part of the performance management system:
 Courageous: innovative solutions; intelligent risk taking



All 3 behaviors are essential.

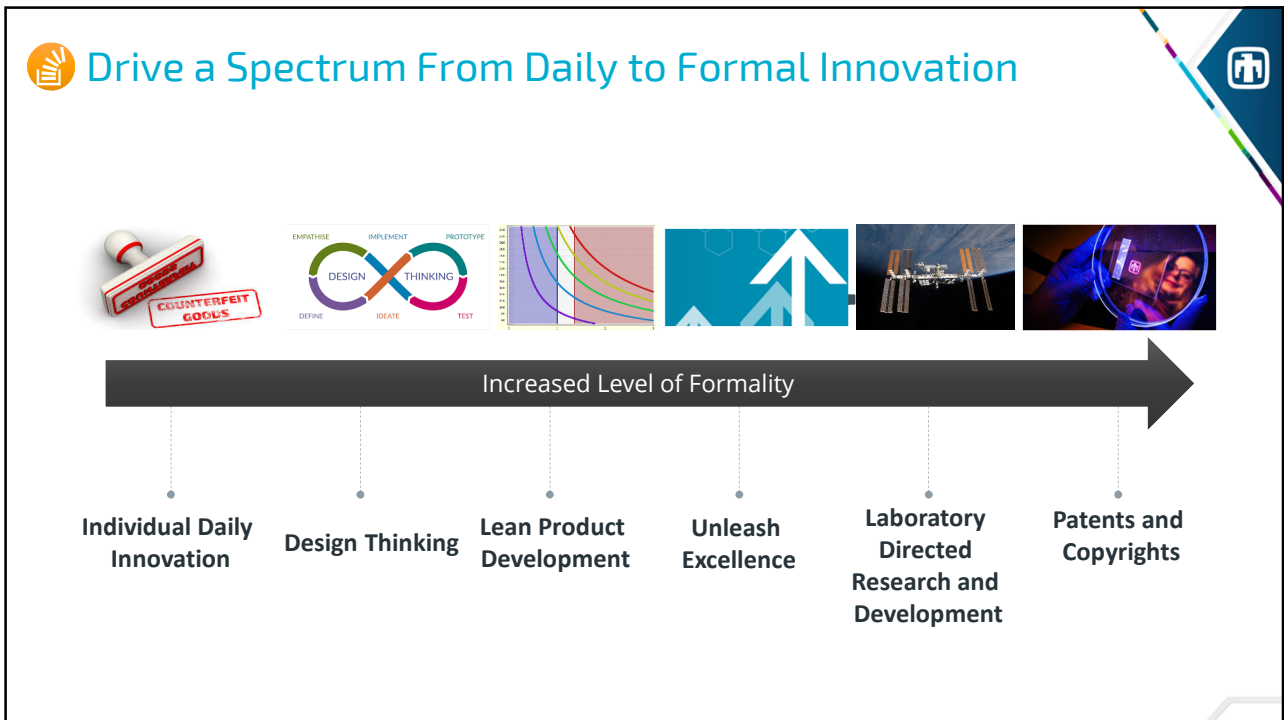


New recognition categories added:

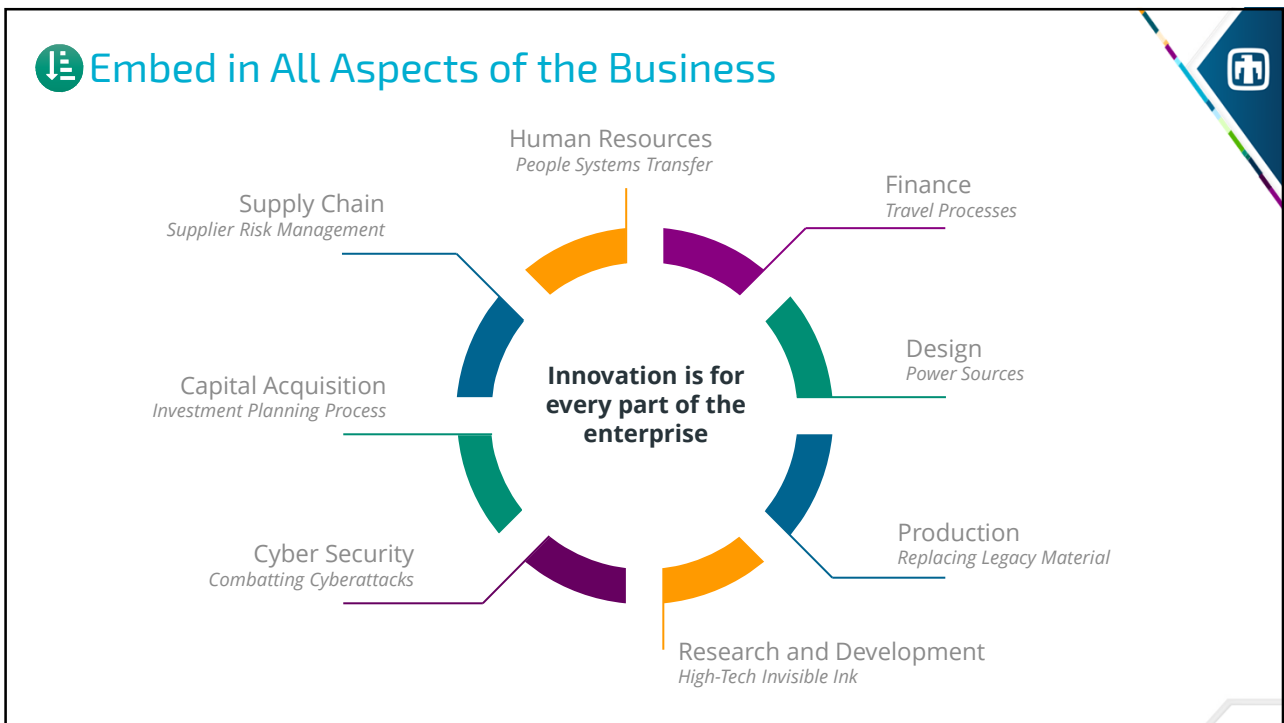
Innovation Mindset – creates value by applying novel solutions to meaningful problems

Intelligent Risk Taker – embraces critically thought out risk to bring added value to the Labs.

12



13



14

Finance - Travel Processes



How might we improve the business travel experience?

Problem

- Booking travel is painful

Approach

- Removal of excess approvals
- Policy redesign with a user focus
- Streamlined reporting and reimbursement processes
- Additional booking options
- Case management

Result

- Increased travel satisfaction

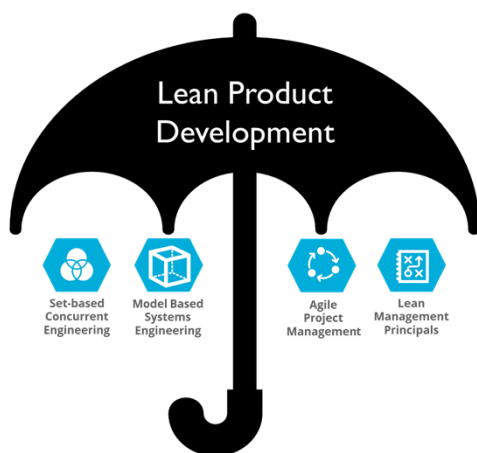


15

Design – Power Sources



Increase speed and flow of product development from idea generation to successful delivery



Problem

It takes too long to yield a good design

Approach

Set Based Concurrent Engineering
Successes for power sources

Result

- Producing designs in half the time
- Evaluating and assessing design options faster (75-90% reduction in time)

16

Cyber Security – Combatting Cyber Attacks



Cyberdefense for military aircraft against a machine learning system trained to break it

Problem

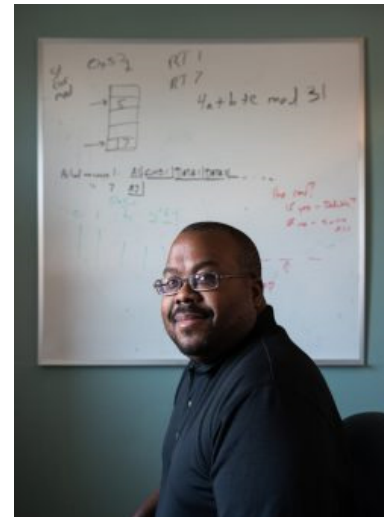
- Securing military networks is a national security imperative
- Unique cyber security challenge are small networks

Approach

- Build a big wall
- Detect
- Moving target

Result

- Randomization combating machine learning



17

Production – Replacing Legacy Material



Build a culture of innovation where there is high complexity and high consequence if we get it wrong

Problem

Legacy material will no longer be manufactured

Approach

Design Thinking

Result

- Proven example of applying innovation
- Better, cheaper replacement material



18

Capital Acquisition - Investment Planning Process

Goal: Create a single prioritized list of facilities and infrastructure needs

Problem

There are 30 data calls and investment and the enterprise is not getting its capital acquisition needs met.

Approach

- Structured Problem Solving
- User Centered Design

Result

Effectively embedded a sustained innovative and lean culture, including lean leadership behaviors and the team iteratively designing with the user in mind

19






Embed in All Aspects of the Business

Innovation is for every part of the enterprise

- Human Resources
People Systems Transfer
- Finance
Travel Processes
- Design
Power Sources
- Production
Replacing Legacy Material
- Research and Development
High-Tech Invisible Ink
- Cyber Security
Combatting Cyberattacks
- Capital Acquisition
Investment Planning Process
- Supply Chain
Supplier Risk Management

20

Key Principles for Enabling Innovation

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21

Questions?



22

