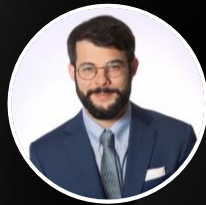




BETTING ON BREAKTHROUGHS

Justifying the value of long-term innovation
in 2025

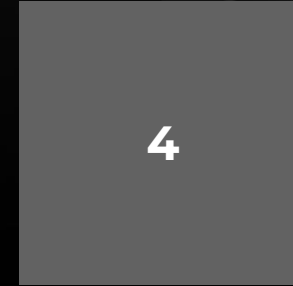
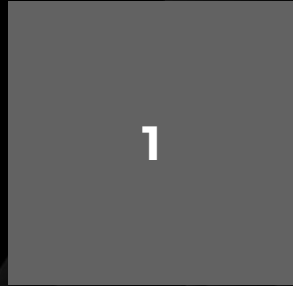


Anthony Schiavo
Principal Analyst and
Senior Director



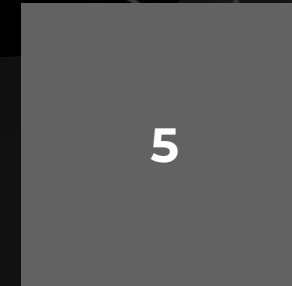
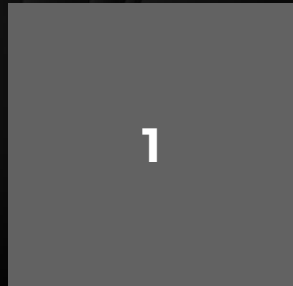
Naveen Krishnamurthy
Senior Vice President,
Executive Programs

Group 1



Which group had better returns?

Group 2



AGENDA

01 | Introduction

02 | How to measure innovation

03 | Building the narrative to support innovation

A NEW ERA OF INNOVATION

- Reduced budgets
- Pressure on profitability
- Cuts to headcount
- Shorter timelines
- Changing government incentives
- Venture capital drying up



INNOVATION TEAMS UNDER PRESSURE

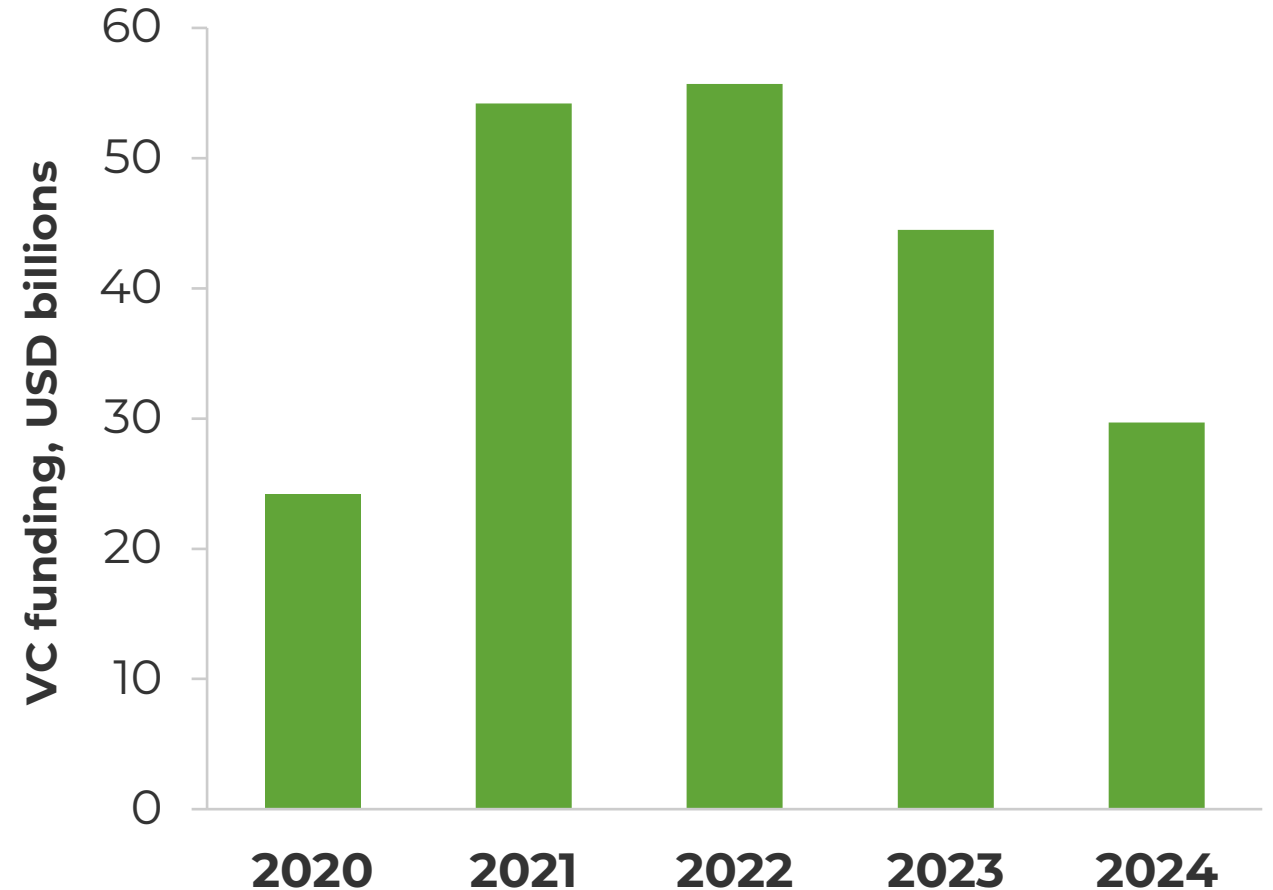
31 OCT, 2024

Layoffs surge in US white collar jobs as rates, AI alter office work

ARTIFICIAL INTELLIGENCE • CLEAN TECH AND ENERGY • VENTURE

Cleantech Funding Weakened In 2024

Cleantech VC Funding



TRUMP HAS FROZEN INNOVATION FUNDS



Trump hits NIH with 'devastating' freezes on meetings, travel, communications, and hiring
Researchers facing "a lot of uncertainty, fear, and panic"

Trump administration makes deep cuts to science funding

FEBRUARY 10, 2025 · 5:00 PM ET

Trump funding freeze leaves IIJA, IRA projects in limbo

CEOs SHIFT TO GROWTH, AWAY FROM TRANSFORMATION

2024 CEO Priorities Survey:

Business
Growth

+26%

Business
Transformation

-8%

Advanced
Technology

-8%

Climate and
Sustainability

-10%

“ ”

...We are aware that the value creation for our shareholders has not met expectations...our strategic direction for BASF needed rethinking.

– Dr. Markus Kamieth, CEO, BASF
Strategy and Markets Day 2024





**Innovation leaders need to justify
long term innovation — to justify
their existence!**

AGENDA

01 | Introduction

02 | **How to measure innovation**

03 | Building the narrative to support innovation

MEASURING INNOVATION IS KEY TO JUSTIFYING INNOVATION



Demonstrate that innovation spending creates leverage



Demonstrate that innovation projects create meaningful ROI

“ ”

The problem of getting enough resources to flow into basic research is basically the classical external economy problem: that research results often are of little value to the firm that sponsors the research, though of great value to another firm...

– Richard R. Nelson, The RAND Corporation, 1959



INNOVATION TEAMS CREATE LEVERAGE BY CAPTURING VALUE

$$\text{Leverage} = \frac{\text{Funding accessed}}{\text{Innovation program funding}}$$

WHAT DOES GOOD LOOK LIKE?

Activate

**USD 3.4 billion in
follow-on funding**

44× leverage



**USD 530 million in
follow-on funding**

~55× leverage

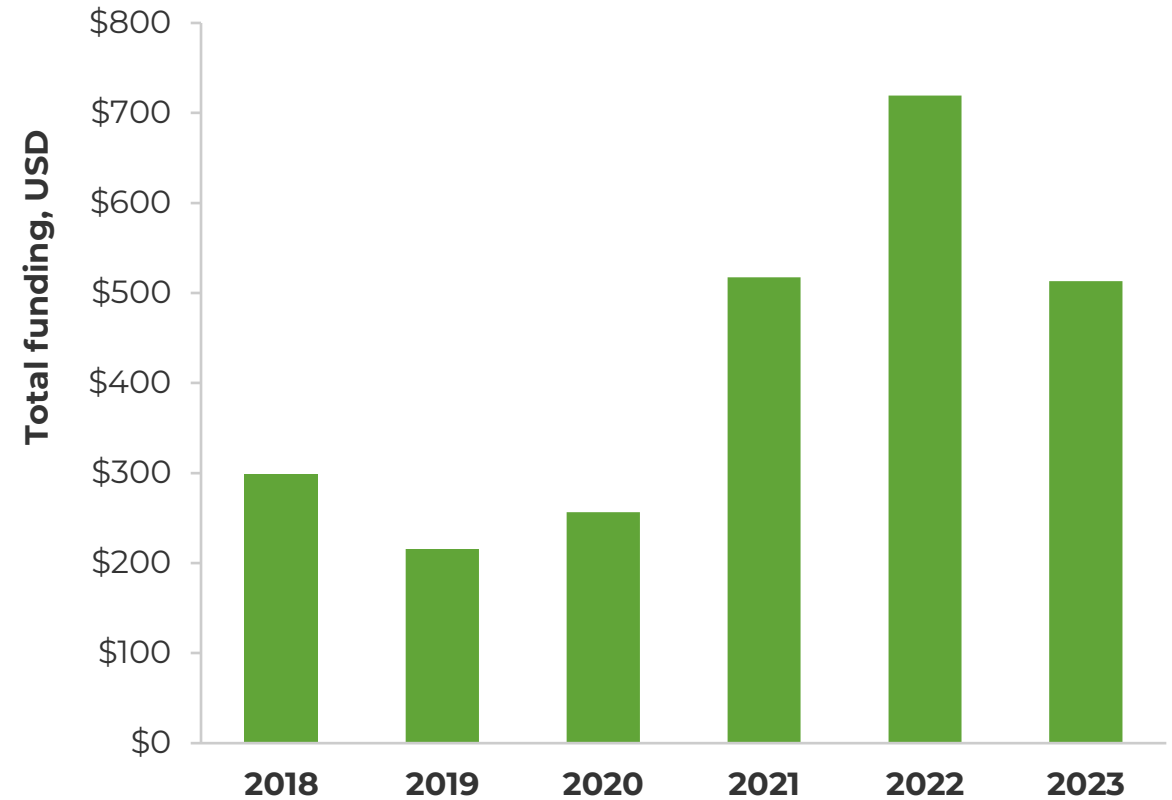
CASE STUDY: CHEVRON TECH VENTURES

chevron technology ventures

integrating technology to the core

$$\text{Leverage} = \frac{\text{USD 3.16 billion}}{\text{USD 400 million}} = 7.9\times \text{leverage}$$

Chevron Tech Ventures Total Funding



MEASURING INNOVATION IS KEY TO JUSTIFYING INNOVATION

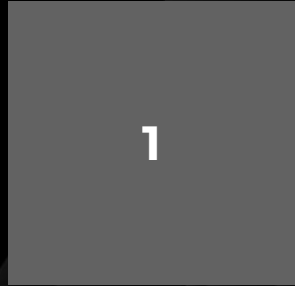


Demonstrate that innovation spending creates leverage



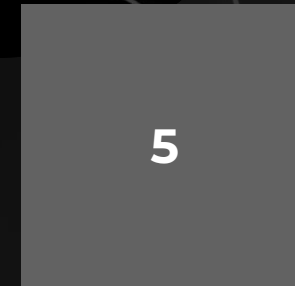
Demonstrate that innovation projects create meaningful ROI

Group 1

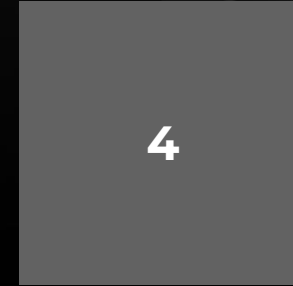
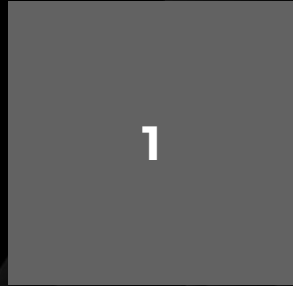


Which group had better returns?

Group 2

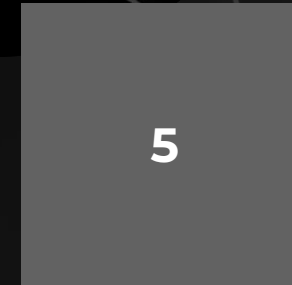


Group 1



Knowledge of low-risk, modest-return options limited the hunt for breakthroughs

Group 2



NBER

National Bureau of Economic Research

NBER WORKING PAPER SERIES

THE STREETLIGHT EFFECT IN DATA-DRIVEN EXPLORATION

Johannes Hoelzemann
Gustavo Manso
Abhishek Nagaraj
Matteo Tranchero

Working Paper 32401
<http://www.nber.org/papers/w32401>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
May 2024



Suggestive empirical evidence from genetics research illustrates our framework in a real-world setting: Data on moderately promising genetic targets delays valuable discoveries by 1.6 years on average...

– NBER working paper 32401



CALCULATING ROI ON AN INNOVATION PORTFOLIO

Number of projects:	25
Success rate:	20%
Project addressable market:	USD 1 billion
Market secured:	20%
	USD 1 billion

MEASURING AN INNOVATION PORTFOLIO

Number of projects:	25
Success rate:	20%
Project addressable market:	USD 1 billion
Market secured:	20%
	USD 1 billion

MEASURING AN INNOVATION PORTFOLIO

Number of projects:

Success rate:

Project addressable market: **USD 10 billion**

Market secured:

1%

50%

CASE STUDY: CHEVRON STUDIO



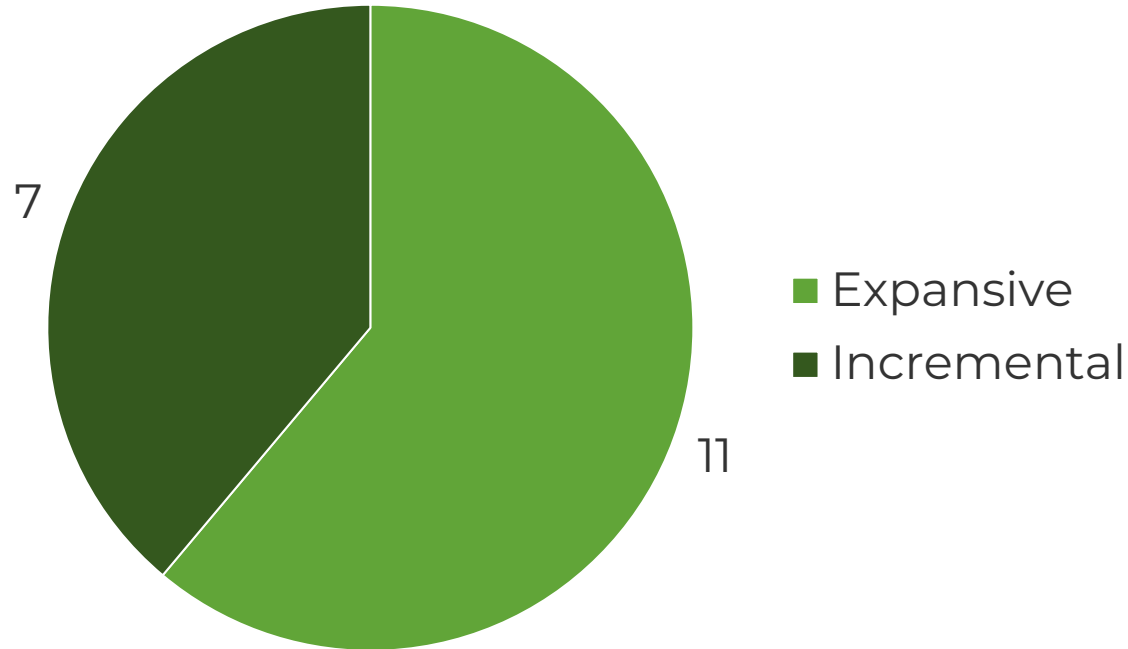
chevron studio



Technology title	Technology partner	Technology summary	IP eligibility
<p>Novel Biphasic Solvents and Approaches for Carbon Dioxide Capture</p> <p>CARBON UTILIZATION</p> <p>TRL 5 COHORT 5</p>	<p>University of Illinois Urbana-Champaign</p>	<p>Dr. Yongqi Lu from ISGS has developed a novel biphasic system that can be used for the capture of CO2 in a much more cost effective way. This system uses an organic compound for phase regulation. Since phase regulation is not dependent on the amine component, this solvent system is much more efficient for biphasic separation of CO2.</p>	<p>Everyone</p>
<p>Rapid Fabrication of Elastomers</p> <p>CIRCULAR ECONOMY</p> <p>TRL 5 COHORT 5</p>	<p>University of Illinois Urbana-Champaign</p>	<p>Researchers from the University of Illinois have developed a new technique for rapidly fabricating elastomeric materials, namely 1,4-polybutadiene and co-polymers of 1,4-polybutadiene, with minimal energy inputs. The technique employs frontal ring-opening metathesis polymerization, an exothermic reaction, to fabricate high-quality materials that</p>	<p>Everyone</p>
<p>Hydrogen is a desired form of energy as it does not release harmful emissions, however, producing</p>		<p>Hydrogen is a desired form of energy as it does not release harmful emissions, however, producing</p>	

CASE STUDY: CHEVRON STUDIO

Chevron Studio projects



Number of projects: 18

Success rate: 1%

Project addressable market: USD 12.3 billion

Market secured: 50%

USD 1.1 billion

“ ”

“If you start forcing people to eliminate risk, then all you end up doing is what has been done before or what everyone else is doing.”

– Former Research Director, U.S. chemicals company





Big bets are crucial to making the math work on innovation ROI

AGENDA

01 | Introduction

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ALIGNMENT WITH C-LEVEL PRIORITIES IS CRITICAL



**Keeping Up
with the Pace
of Change**



**Transforming
How Innovation
Is Done**



**Driving Enterprise
Growth Through
Alignment**



**Proving the
Value of
Innovation**



**Cultivating
Exceptional
Cultures**

“ ”

**I need to satisfy my investors today —
I can't turn down low-risk projects to
fund moonshots that won't pay off for
years.**

– CEO Objection #1



I don't need you to prove you *could* generate a billion dollars in returns — I need to know that you *are* going to get the most out of your limited budget.

– CEO Objection #2



Your failures in transformational innovation offer free education for our competitors — and they could upset our most important relationships with customers and suppliers.

– CEO Objection #3

KEY TAKEAWAYS

1

Metrics are crucial to justifying innovation, but are not sufficient.

Demonstrating value is a starting point. Building a narrative that aligns with C-level priorities is crucial as well.

2

High-risk, long-term innovation is still a critical part of the portfolio.

While the C-suite may favor lower-risk bets, those big swings are crucial to both long-term returns and company culture.

3

Innovation isn't just a long-term prospect — it can have real near-term value for executives.

Innovation creates company culture, it helps meet the demands of investors, and it builds on and reinforces relationships in the value chain.



THANK YOU



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questions@luxresearchinc.com

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Our mission is to advise leaders about commercially viable science and technology to enable sustainable innovation. We deliver research and advisory services to inspire, illuminate, and ignite innovative thinking that reshapes and grows businesses. Using quality data derived from primary research, fact-based analysis, and opinions that challenge traditional thinking, our experts focus on finding truly disruptive innovations that are also realistic and make good business sense.

The “Lux Take” is trusted by innovation leaders around the world, many of whom seek our advice directly before placing a bet on a startup or partner — our clients rely on Lux insights to make decisions that generate fantastic business outcomes. We pride ourselves on taking a rigorous, scientific approach to avoid the hype and generate unique perspectives and insights that innovation leaders can’t live without.



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