



# 2026 Board of Trustees Retreat

March 17-18, 2026

Boar's Head  
Charlottesville, Virginia

# Welcome

A. Scott Andrews  
Chairman,  
VRS Board of Trustees



# Welcome

Patricia Bishop  
Director



# Welcome

Andrew Junkin  
Chief Investment Officer



# Guest Speaker: Defined Contribution

Bill Ryan  
Managing Director  
Head, Retirement Solutions

Carlyle



# Guest Speaker: Defined Contribution

## Bill Ryan | Carlyle



Bill Ryan is a Managing Director and Head of Retirement Solutions at Carlyle. He is based in Chicago. He also serves as a member of the US Department of Labor ERISA Advisory Council.

Bill has over 25 years of industry experience leading defined contribution and retirement investment consulting businesses across North America, as well as working within human resources and treasury functions at a large plan sponsor. Prior to joining Carlyle, he was the Defined Contribution Team Leader at NEPC LLC, where he managed a consulting practice advising more than 160 clients with over \$600 billion in retirement assets.

Previously, he led Aon's North America DC Multi-Asset Solutions team and, prior to that, oversaw the University of California retirement programs across the entire system in roles spanning both human resources and the Office of the Chief Investment Officer.

Bill earned his MBA from the University of California, Irvine, where he served as President of the Merage Student Association. He holds a BS from Rensselaer Polytechnic Institute and is a CAIA charterholder and member of the Chicago CAIA Society.

CARLYLE

# Private Markets & Retirement Income DC Trends

March 17, 2026

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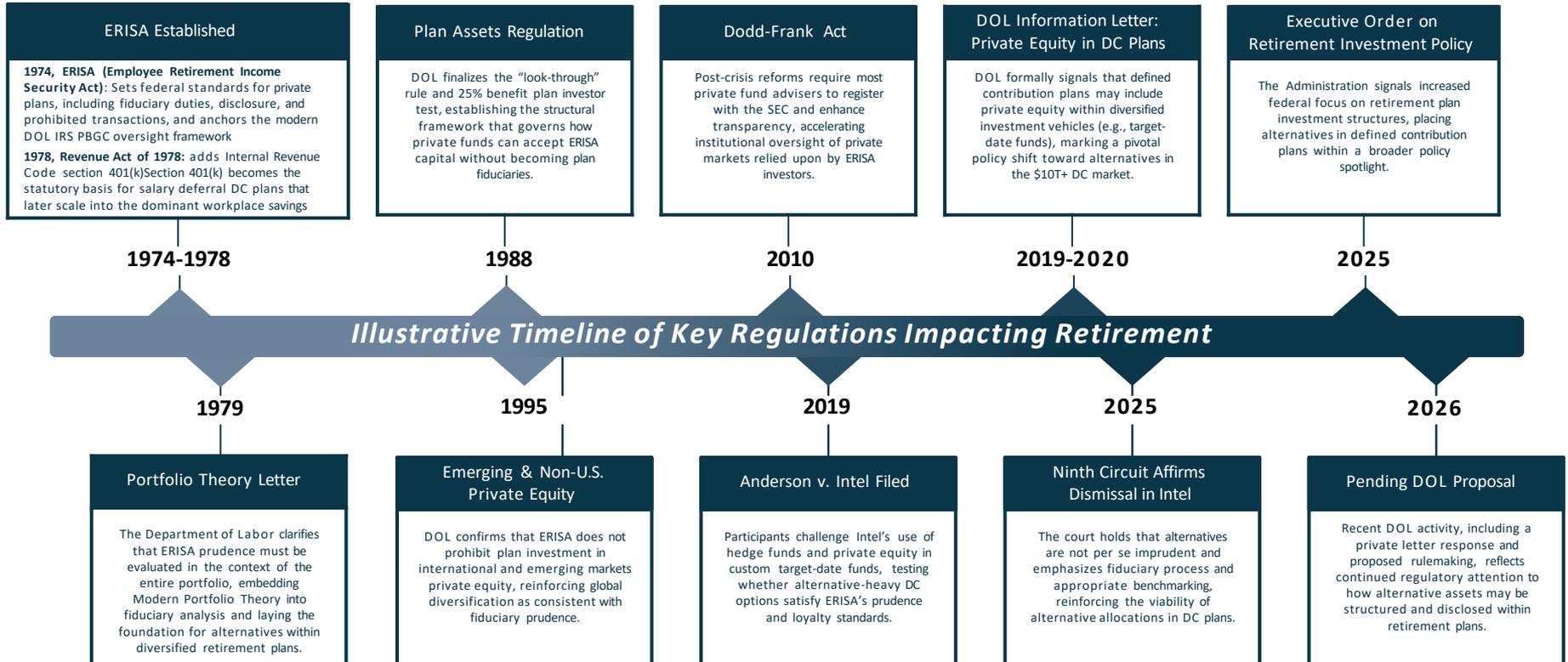
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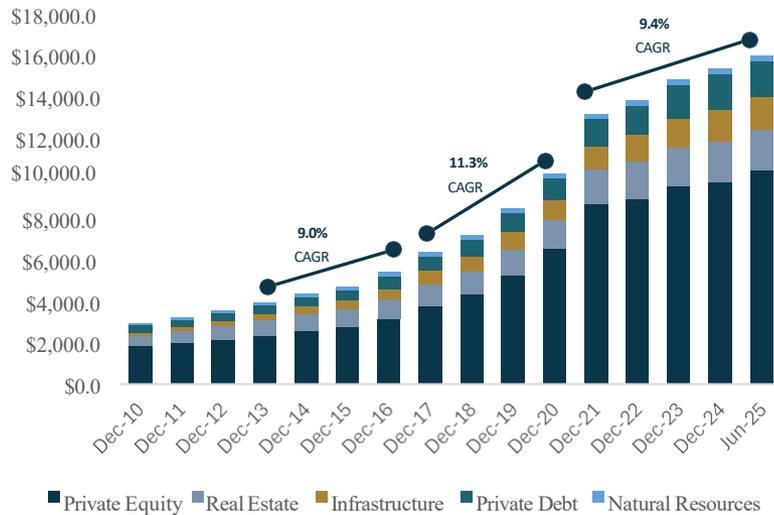
# Private Market Considerations for DC

# Over 40 Years of ERISA Evolution



# Supply & Demand Tailwinds Support Continued Private Markets Expansion

## Supply: Private Markets AUM Growth (\$tr)

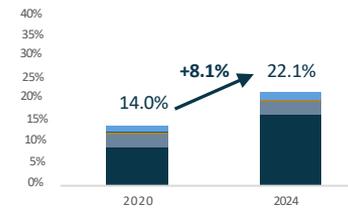


### Comments:

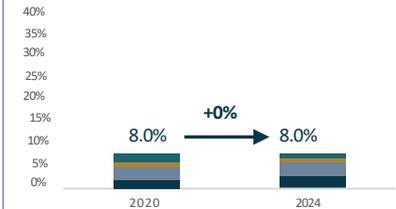
Private markets fundraising has steadily expanded over the last decade, indicating sustained supply growth across strategies

## Demand: Institutional Allocation Growth

### Endowments:



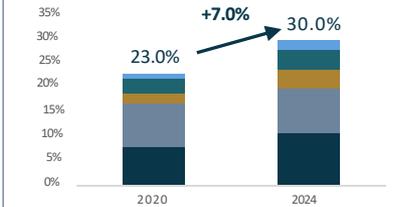
### Insurance Companies:



### Private Pensions:



### Public Pensions:



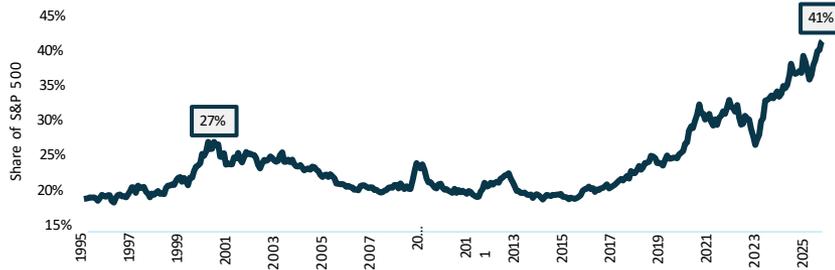
### Comments:

Institutional demand is also increasing, with endowments and pensions showing the most meaningful allocation growth from 2020 to 2024

# Current State of Public Markets

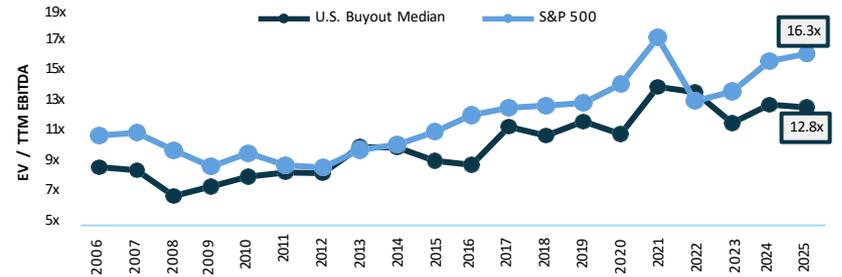
- 1 Public market concentration in large caps has become extreme in modern times

Top Ten Largest Stock's Share of S&P 500 Market Capitalization<sup>1</sup>



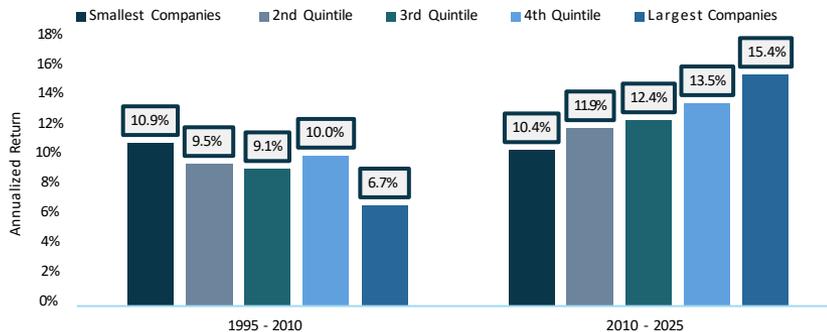
- 2 Public large cap multiples continue to hover near their 2021 peak and ~20% higher than 10-year average

Median US Buyout Purchase Price Multiples vs. S&P 500 Multiples



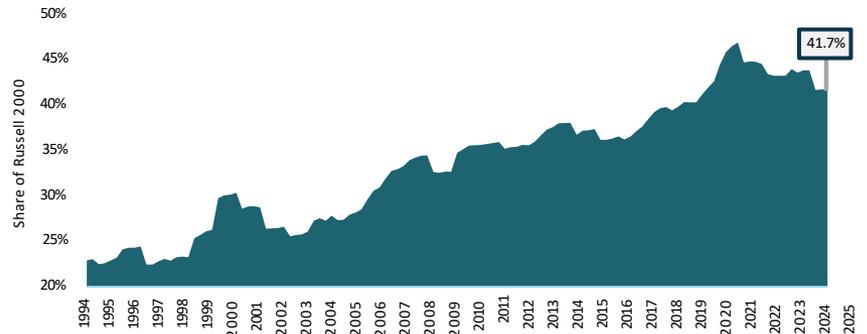
- 3 Splitting public companies into portfolios based on size, we observe performance in the small cap premium reverse post-GFC

Performance in Size-Based Portfolios Pre-GFC and Post-GFC



- 4 Profitless small caps remain elevated in the Russell 2000 underscoring a shifting complexion in the small cap universe

Share of Russell 2000 Companies With Negative Trailing 12-Month EPS



For illustrative purposes only. There is no assurance any trends described or depicted will continue.

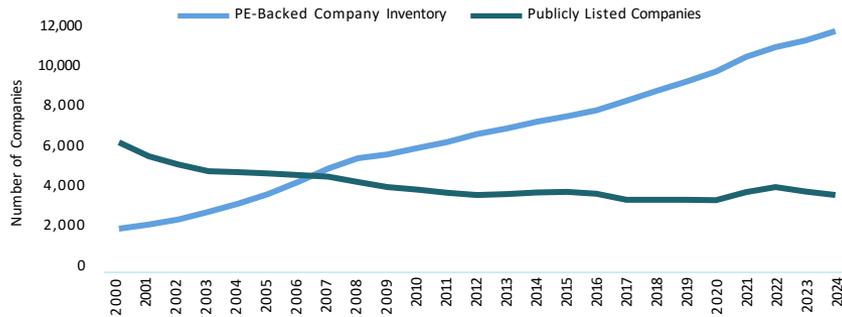
Source: Carlyle Global Research & Investment Strategy (GRIS) Analysis; Bloomberg, Pitchbook, Fama French Oct 2025. There is no guarantee any trends will continue.

<sup>1</sup>10 largest stocks on a market-cap weighted basis in the S&P 500 are: NVIDIA, Microsoft, Apple, Amazon, Alphabet, Meta, Broadcom, Tesla, Berkshire Hathaway, JPMorgan Chase. Data as of October 2025.

# The Rise Of Private Markets

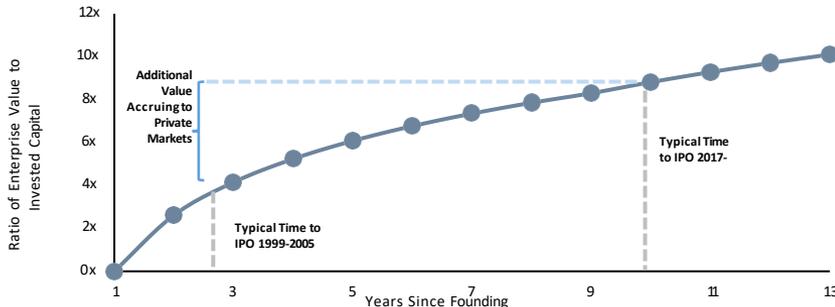
1 The opportunity set for equity investors has shifted with private companies significantly outnumbering public companies

## PE-Backed Private Companies Outnumber Public Companies



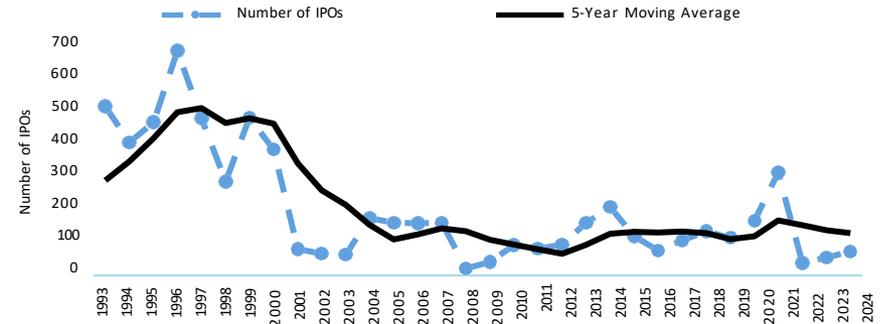
3 In this new paradigm, value that was previously captured in the public markets now also accrues in the private markets

## Private Markets Capture 50% More of Value in Companies <10 Years Old<sup>1</sup>



2 Companies increasingly prefer private capital; IPOs down 70% over last 30 years. If they do IPO, it often occurs later in the company lifecycle

## IPOs Down 75% Over Last 30 years



4 And we believe this new environment has durable tailwinds

## Favorable Characteristics in Modern Private Equity

- ▶ Regulatory landscape is evolving in favor of Private Markets
- ▶ New mechanisms for liquidity have lowered reliance on traditional exit
- ▶ Increased privacy may help protect intangible assets and other IP
- ▶ Longer-duration capital can reduce exposure to short-term market pressures

*For illustrative purposes only. There is no assurance any trends described or depicted will continue.*

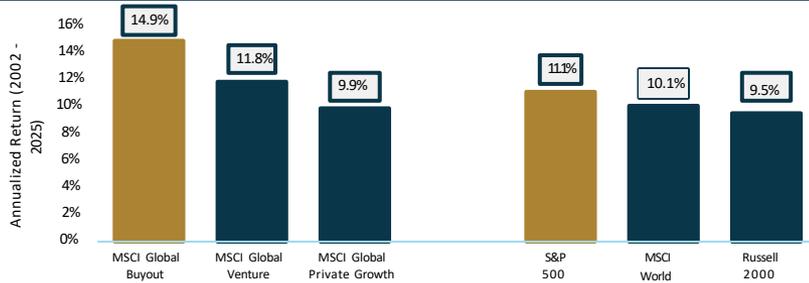
Source: Carlyle Global Research & Investment Strategy (GRIS) Analysis; Pitchbook, CSRP, Oct 2025. There is no guarantee any trends will continue.

<sup>1</sup>Source: Carlyle Analysis; Brown, Keith C., Wiles, Kenneth W., "The Growing Blessing of Unicorns: The Changing Nature of the Market for Privately Funded Companies," Journal of Applied Corporate Finance, 2020. There is no guarantee any trends will continue.

# Attractive Features of Diversified Private Equity

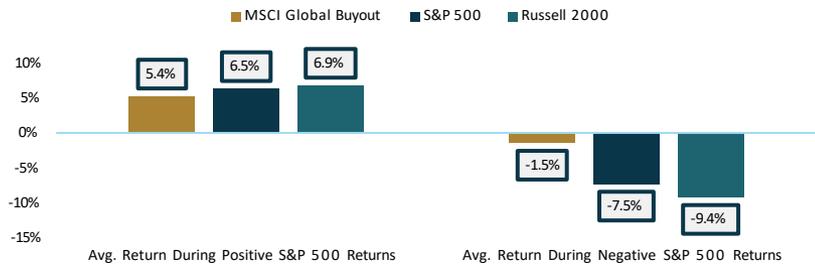
1 Historically, private Equity has outperformed other equity strategies over a +20-year time horizon

Annualized Returns By Public and Private Equity Strategy (Over 22 Years)



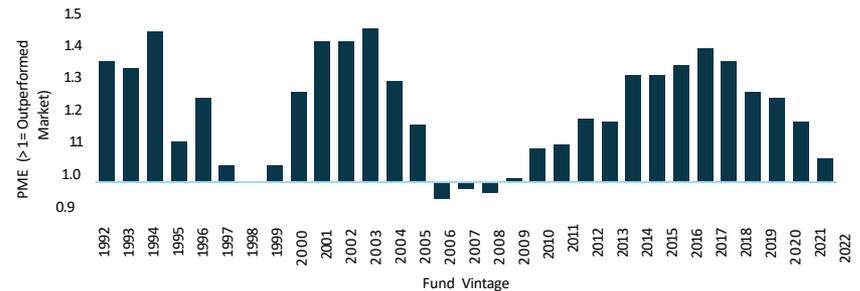
3 Private Equity historically mitigates negative public equity returns on average while participating in upside

S&P 500 Upside and Downside Participation by Private Equity



2 Across cycles, global buyout funds have historically matched or outperformed equivalent investments in liquid benchmarks

MSCI Global Buyout Direct Alpha vs. Russell 2000 by Fund Vintage



4 These features combine to create a potentially compelling risk-return profile vs. traditional public equities

Summary Risk and Return Statistics

Return Metrics	Russell 2000	S&P 500	MSCI Global Buyout
Annualized Return	9.5%	11.1%	14.9%
Annualized Volatility	20.9%	15.7%	10.2%
Avg. Return During Positive S&P 500 Returns	6.3%	6.5%	5.4%
Avg. Return During Negative S&P 500 Returns	-7.7%	-7.5%	-1.5%

# DC Core Investment Menu Recommendations

Asset Class	Institutional Consultants	Advisors
Domestic equity	2.8	4.6
Non-U.S. equity	1.2	1.3
Global equity (includes U.S.)	0.1	0.3
Domestic bond funds	1.2	1.3
International bond funds	0.3	0.3
Non-target-date balanced funds	0.2	0.5
Money market	0.5	0.5
Inflation protection	0.7	0.6
<b>Total</b>	<b>7.0</b>	<b>9.4</b>

# Participant Stats – Balance & Fund Usage

**3.6** average number of funds held by participants

**5.2** average number of non-TDF funds held by participants

Avg # of Core Funds:

12

Avg Tenure:

10

Avg Contr. Rate:

8.8%

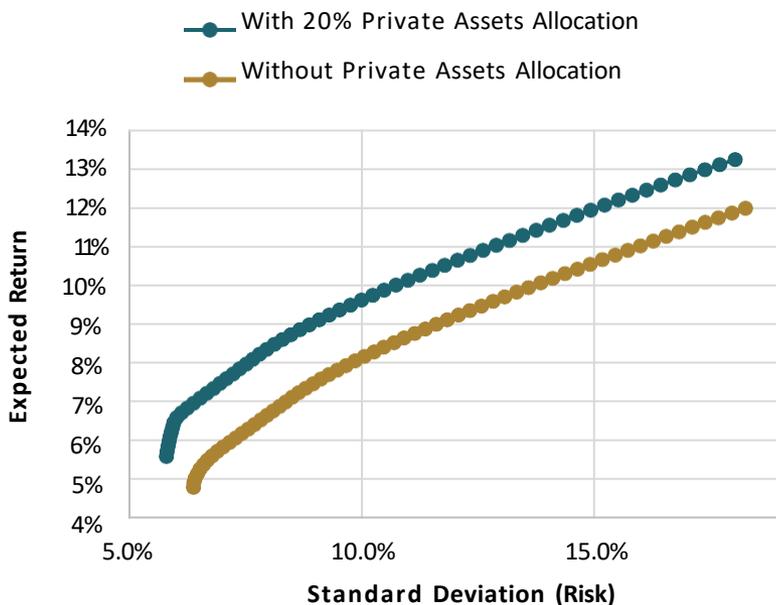
Career Stage	Starting Career	Early Career	Mid Career	Late Career	At Retirement	In Retirement
Median # of Funds Held	1	1	1	1	2	2
Average # of Funds Held	2.7	3.3	3.6	3.9	4.2	3.2
Median # of Non-TDF Funds Held	4	4	4	4	4	2
Average # of Non-TDF Funds Held	4.8	5.7	5.7	5.4	5.2	3.8
Average Balance	\$11,119	\$54,416	\$133,259	\$258,555	\$400,321	\$311,093
Average Contribution Rate	8.30%	8.00%	8.20%	9.30%	11.10%	12.20%
% Age Group of Total Participant Population	5%	21%	24%	21%	14%	15%

# Enhancing Portfolio Construction

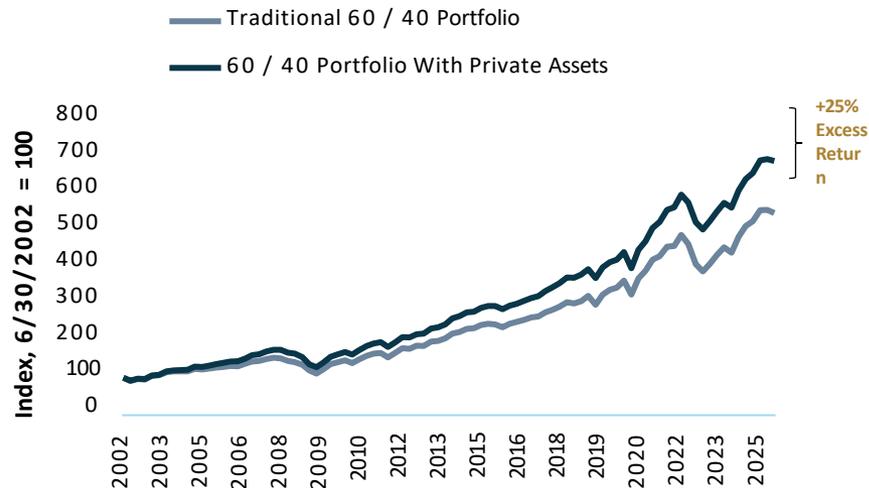
1 In this analysis, a 20% private assets allocation improves the modeled risk/return tradeoff

2 A 60/40 portfolio with private assets delivered higher historical risk-adjusted returns

Impact of Alternative Private Assets On Efficient Frontier



Traditional 60/40 Portfolio Before & After 20% Private Assets Allocation

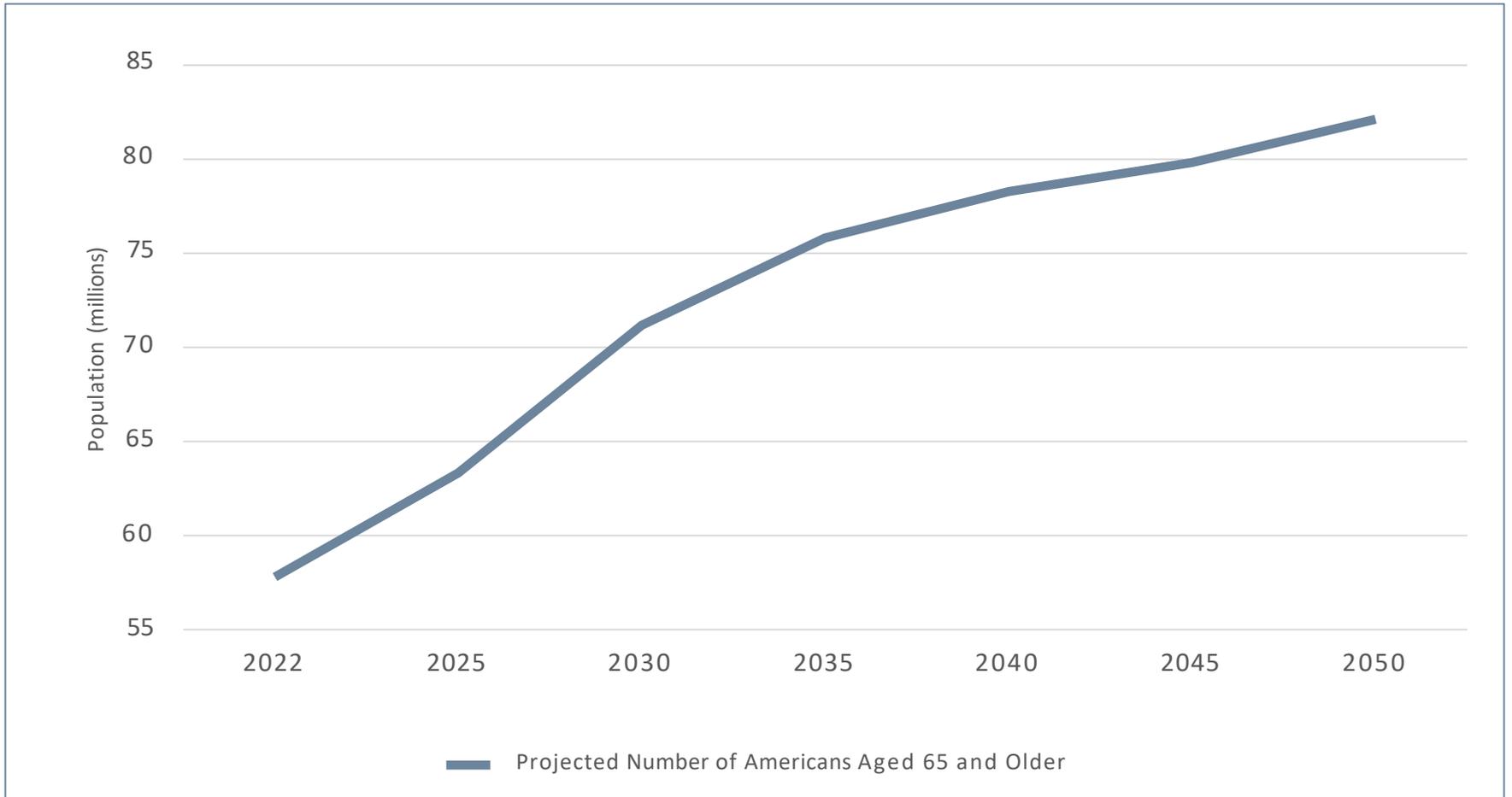


Portfolio	Annualized Return	Annualized Volatility	Return Per Unit of Risk
Traditional 60 / 40 Portfolio	7.7%	9.8%	0.78
60 / 40 Portfolio With Private Assets	8.8%	9.2%	0.96

# Retirement Income

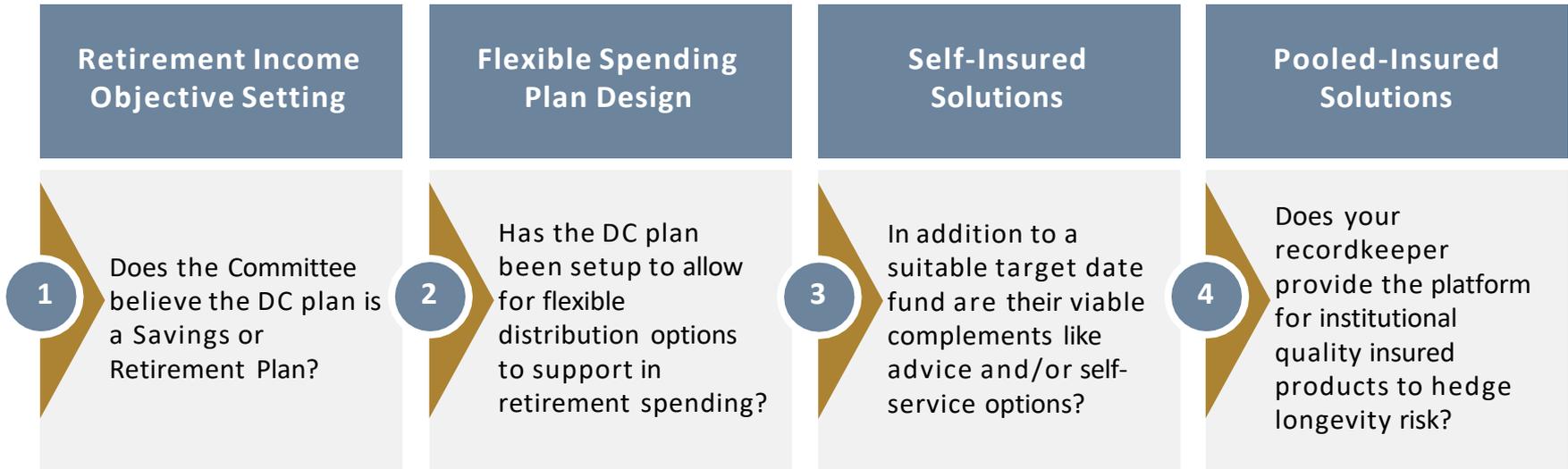
# Retirement Income Matters More Than Ever

THE NUMBER OF AMERICANS AGED 65 AND OLDER IS PROJECTED TO INCREASE FROM 58 MILLION TO 82 MILLION FROM 2022 TO 2050.



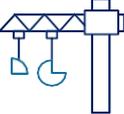
# Retirement Income is a Mindset

DON'T LET PERFECT BE THE ENEMY OF PROGRESS



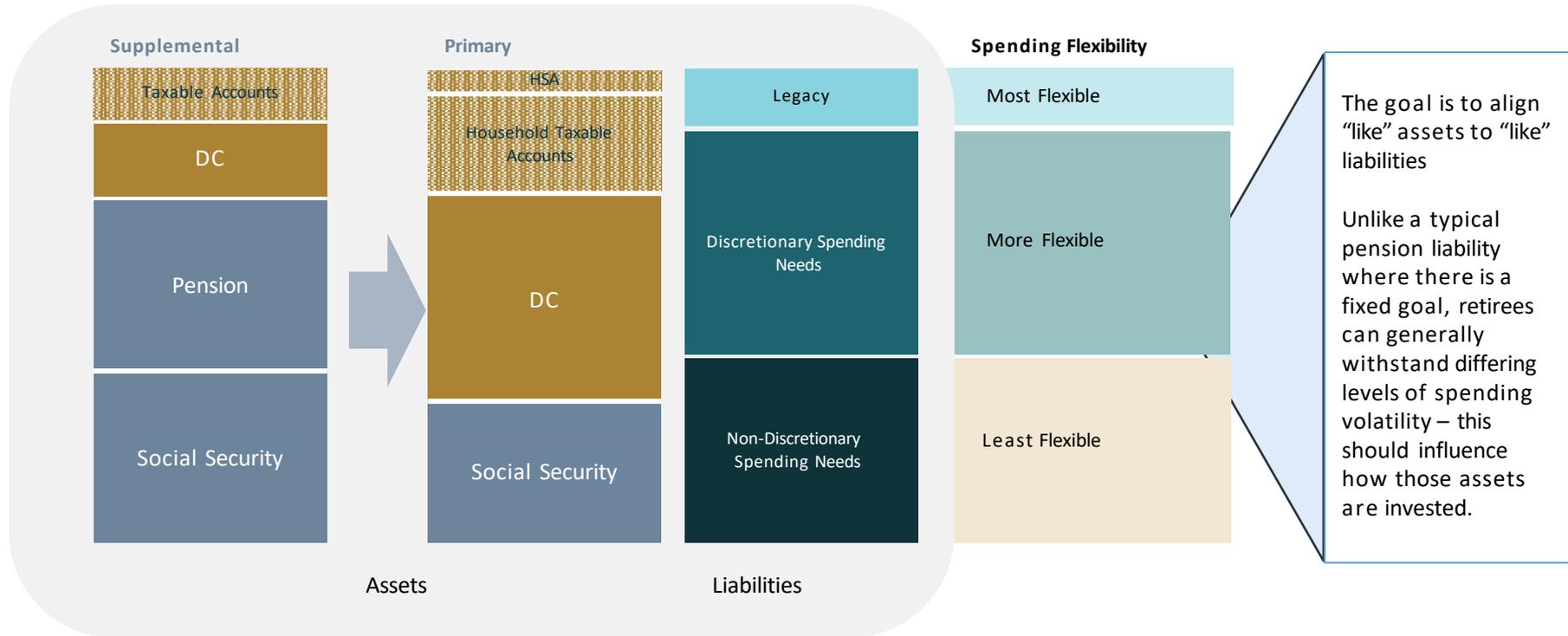
**No two DC plans have the same plan rules, people, or investments, so educational support is required to foster proper long-term adoption**

# Broad Categories of Retirement Income

	Definition	Implications
 <b>Non-Guaranteed Income (Self-Insured)</b>	Withdraw spending needs from liquid assets  e.g., TDF, managed payout, or spending from self-managed investments	Withdrawal flexibility  Income levels depend on investment performance and may fluctuate
 <b>Social Security and Bridge</b>	Benefits commence ages 62-70  Bridge: delay SS; withdraw a greater portion of savings early in retirement to cover needs	Requires ability (i.e. liquidity) to self-insure early retirement; will reduce liquid assets faster  Delaying benefits may increase monthly Social Security payments
 <b>Guaranteed Income (Pooled-Insured)</b>	Purchase annuity from insurer  Multiple types of annuities available (immediate, deferred, guaranteed minimum benefit)	Ability to purchase over time or an immediate reduction in liquid assets to pay for annuity  Provides contractually defined income, immediate or deferred

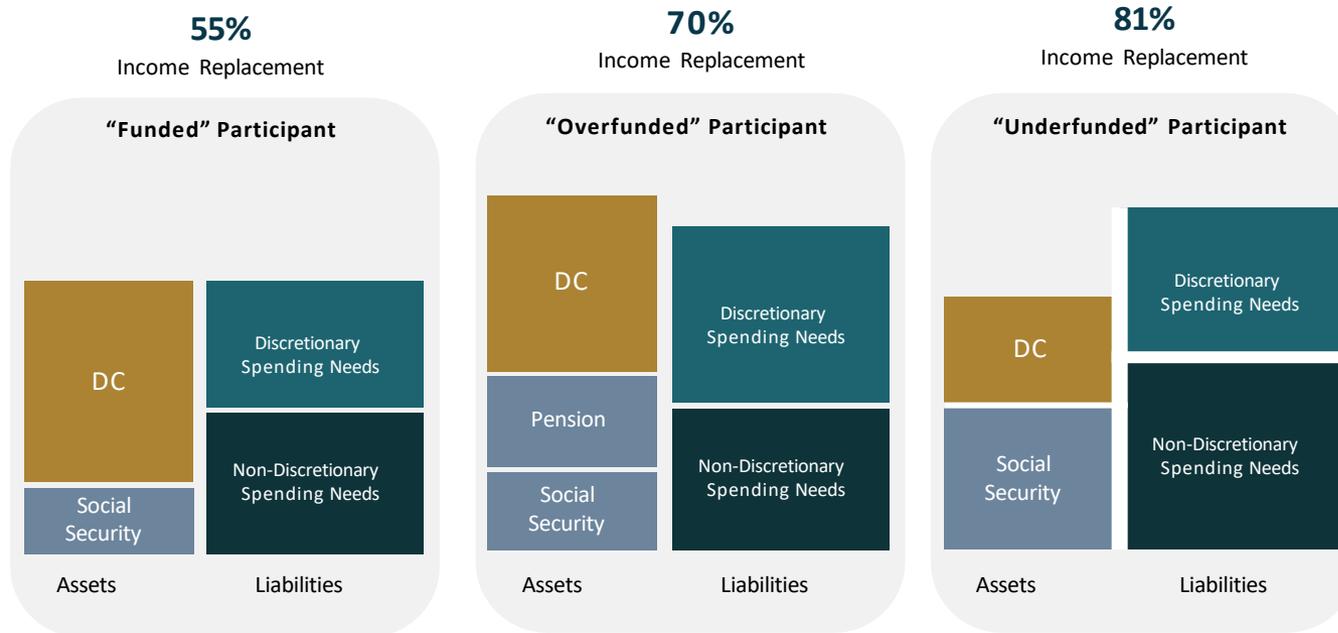
# Retirement Income: An Asset/Liability Challenge

OVER TIME, DC PLANS HAVE EVOLVED FROM SUPPLEMENTAL TO PRIMARY RETIREMENT SAVINGS VEHICLES AS PENSION BENEFITS HAVE BEEN REDUCED OR ELIMINATED.



# DC Participants' Assets & Liabilities

EACH PARTICIPANT (AND EFFECTIVELY THEIR HOUSEHOLD) WILL HAVE A DIFFERENT COMBINATION OF ASSETS AND LIABILITIES



**Liabilities** will differ in size and composition based on income level and spending goals

**Assets** will differ based on income level and savings/retirement benefits (type, amount)

# Realities: Asset & Liability Framework

WHILE PARTICIPANTS ARE RESPONSIBLE FOR PULLING TOGETHER THEIR OWN RETIREMENT INCOME ASSET/LIABILITY FRAMEWORK, PLAN SPONSORS CAN HELP WITH THIS PROCESS.

Information available to plan sponsors		Information not available to plan sponsors	
	<ul style="list-style-type: none"><li>• Social Security estimate</li><li>• DC balance(s) (partial)</li><li>• Pension (if benefit)</li><li>• HSA balance (if benefit)</li><li>• Spending needs estimate</li></ul>		<ul style="list-style-type: none"><li>• Taxable accounts</li><li>• Other DC balances</li><li>• Other pension benefits</li><li>• Other HSA balances</li><li>• Household spending needs</li><li>• Household retirement goals</li><li>• Household tax considerations</li></ul>

# Retirement Income: More Than a Product

IMPLEMENTING RETIREMENT INCOME SOLUTIONS REQUIRES COORDINATION ACROSS INVESTMENTS, PLAN DESIGN, AND ADMINISTRATION

## SOLUTIONS FOR SAVINGS AND SPENDING

- Target date funds
- Managed Accounts
- Target risk funds
- Capital preservation

## SOLUTIONS FOR SPENDING

- Non-Guaranteed Investments (e.g., Inflation focused funds, managed payout funds)
- Insurance based solutions



## PLAN DESIGN / OPERATIONS

- Partial distributions
- Installment payments
- Systematic withdrawals
- No fees for re-occurring withdrawals

## EDUCATION / ADVICE

- Retiree educational resources and tools
- Social Security optimization tool
- Access to advice services
- Access to financial plan services

# Retirement Income: More Than a Product

## START WITH EVALUATING LOW HANGING FRUIT

	Plan Sponsor Commitment	DC Plan Trends	Your Plan
Target Date Funds	Low	97%	✓
Capital Preservation	Low	98%	✓
Managed Accounts	Low	46%	✓
Target Risk Funds	Low	25%	
Managed payout funds	Low	10%	
Inflation-focused funds	Low	34%	✓
Partial Distributions	Low	89%	✓
Installment Payments / Systematic Withdrawals	Low	93%	✓
No fees for re-occurring withdrawals	Low	31%	✓
Retiree educational resources and tools	Low	41%	✓
Social Security optimization tool	Low	13%	✓
Access to advice services	Low	40%	✓
Access to financial planning services	Low		✓
Annuity Windows / Marketplaces	Moderate	1%	
Annuities purchased in or out of plan and are serviced out of plan	Moderate		✓
Annuities purchased in plan that remain in plan	High		

# Social Security (SS) Bridge Strategy

Delaying SS increases potential benefits by up to 8% per year

- May provide higher longevity hedge income floor
- Result in a higher future income stream for deferred benefits
- Requires sufficient liquid asset balances to spend from

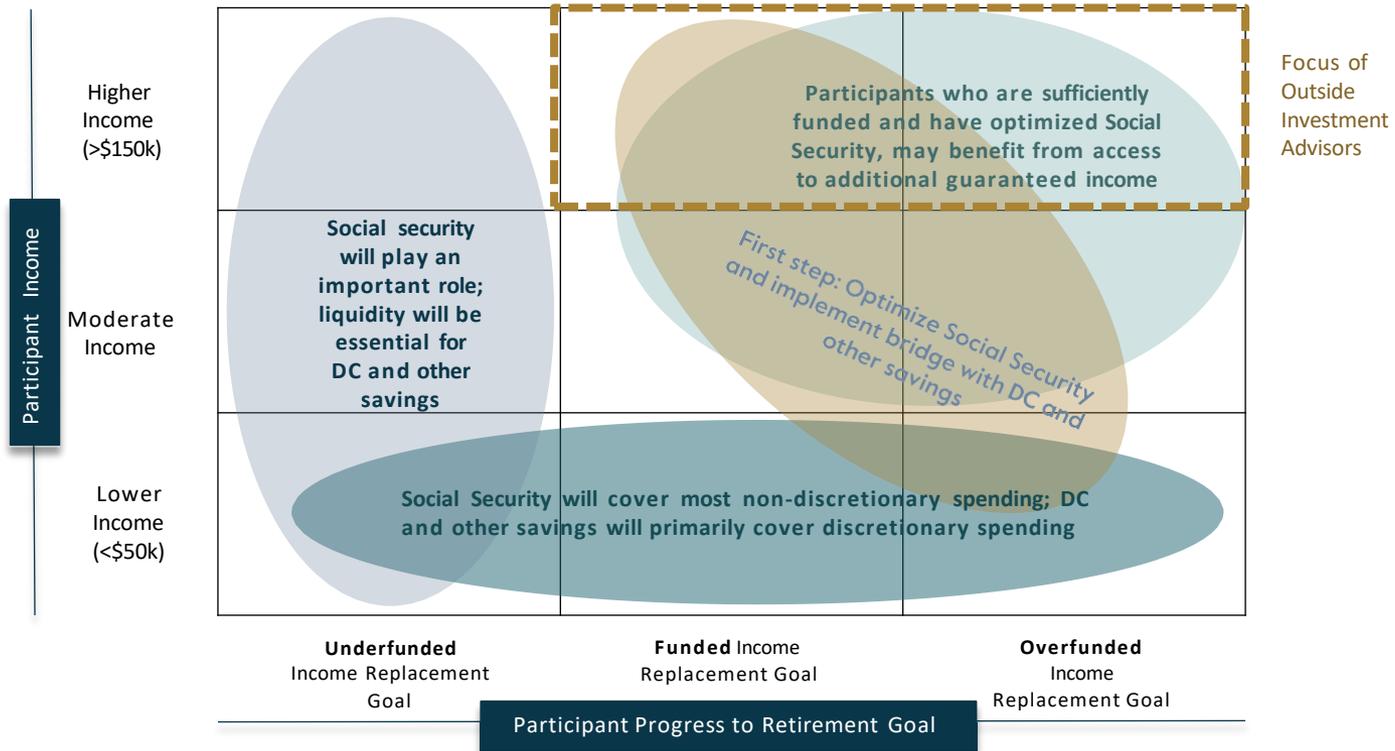


Potential ways to address:

- Communication and targeted guidance/advice tools
- Liquid investment spending solution
- Default payout based on estimated SS check amount (future)

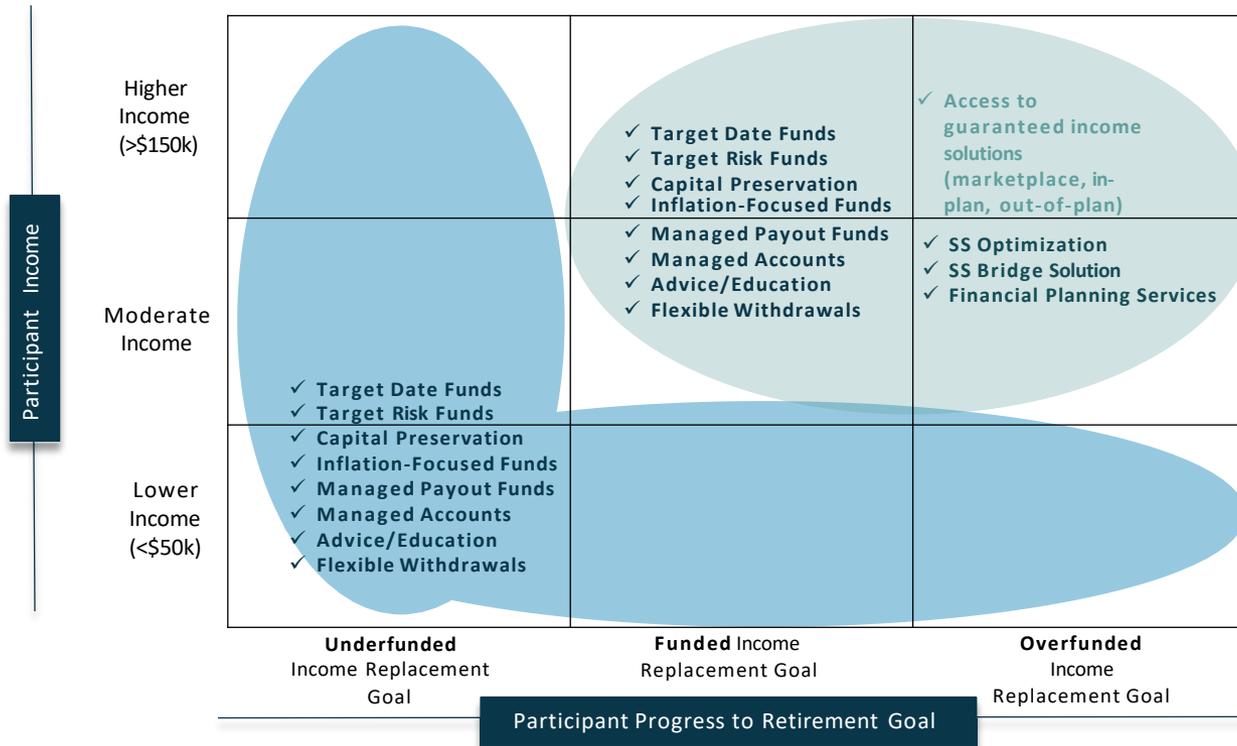
# How to Prioritize

## KEY CONSIDERATIONS FOR BROAD PARTICIPANT GROUPS



# How to Prioritize

## FOCUS AREAS FOR BROAD PARTICIPANT GROUPS



# Guidance for Plan Sponsors

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- **Prioritize Social Security for Underfunded Participants:** Underfunded participants should prioritize Social Security benefits due to limited personal assets for retirement
- **Combine Benefits for Lower Income Groups:** Lower income groups may benefit from combining Social Security with defined contribution savings for better retirement security
- **Optimize Strategies for Moderate and Higher Income:** Moderate- and higher-income participants should optimize Social Security and use DC savings strategically as a retirement bridge
- **Consider Guaranteed Income Solutions for Overfunded Participants:** Overfunded and higher income individuals may enhance security with guaranteed income products like annuities

# Appendix

# Key Terms and Definitions

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- **SS Bridge: Social Security Bridge;** A strategy designed to help participants delay claiming Social Security to maximize the payout, which uses retirement savings to replace a social security payment until a participant is ready to start collecting benefits.
- **QLAC: Qualified Longevity Annuity Contract;** A type of deferred annuity that begins payments at an advanced age, providing a guaranteed income for life.
- **SPIA: Single Premium Immediate Annuity;** An annuity contract that is purchased with a single lump sum payment and provides immediate income payments.
- **DFA: Deferred Fixed Annuity;** An annuity contract that provides fixed income payments starting at a future date in exchange for a premium payment.
- **DIA: Deferred Income Annuity;** An annuity contract that provides income payments starting at a future date.
- **GLWB: Guaranteed Lifetime Withdrawal Benefit;** An optional feature in some annuities that guarantees a certain level of income for life, even if the account balance is depleted.
- **GMWB: Guaranteed Minimum Withdrawal Benefit;** An optional feature in some annuities that guarantees a minimum level of income for life.
- **DGLWB: Deferred Guaranteed Lifetime Withdrawal Benefit;** an optional rider attached to an annuity that provides guaranteed withdrawals based on a benefit base for life, even if the account balance goes to \$0.
- **PLIB: Protected Lifetime Income Benefit;** An optional feature in some annuities that provides a guaranteed income for life.
- **HSA: Health Savings Account;** A tax-advantaged medical savings account available to taxpayers in the U.S. who are enrolled in a high-deductible health plan.

# Key Terms and Definitions, cont.

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- **Premium:** A lump sum or installment payment given to an Insurer in exchange for an annuity benefit. Often referred to as a cash value or account value.
- **Payout:** an annuity benefit, usually in the form of a stream of income that is given to the insured at an agreed rate and frequency in exchange for a premium. Payouts are determined by several factors.
- **Accumulation & Annuitization Phases:** Identical to the “savings” and “spending” phases of a target date fund. The former is the period where the premium is invested and grown over time. The latter is the period where the cash value is paid out (annuitized) through various payment methods and schedules.
- **Mortality credits:** The driving force of pooled-insurance vehicles. These are created when investors in the pool fail to reach their life expectancy and as a result, don’t receive as many income payments that they would if they lived as long as expected. Unless certain riders are attached to the annuity, those credits go back into the pool and are used to pay the income of members who live past their life expectancy.
- **RIDER:** An additional feature that you may be able to add to an annuity contract, usually at additional costs. Riders can have significant impact on how an annuity functions and can be used in combination to create many permutations of an annuity product. Annuitants can be in the same annuity pool and have vastly different experiences based on the riders they have chosen.
- **Deferred Purchase:** A deferred purchase promises to pay the policy owner a regular income, lump sum, or withdraw schedule at some future date. The policy owner can pay the deferred premium as a lump sum or in installments.
- **Immediate Purchase:** An immediate purchase promises to pay the policy owner a regular income or withdraw schedule usually beginning within 30-days to a year. Because the contract becomes annuitized so quickly, there is little to no accumulation phase.
- **Variable Annuity:** Annuities that participate in the market. The cash value will vary depending on performance of the chosen investment(s). Variable annuities typically invest in mutual funds.
- **Fixed Annuity:** An annuity that promises to pay the buyer a specific, guaranteed interest rate or income based on their contributions to the account.
- **Annuity:** AN annuity is a contract between you and an insurance company that is designed to meet retirement and other long-term goals. You buy an annuity by making a single lump-sum payment or series of payments. In return, the insurer agrees to make periodic income payments to you beginning immediately or at some future date. Alternatively, you may choose to withdraw your contract’s value as a lump sum payment, although doing so may subject you to surrender charges, taxes, and tax penalties.

# Disclosure & Methodology for Slide 11

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1. Analysis. The analysis relies on historical quarterly return data from June 2001 through December 2024. The efficient frontier presented herein are based on mean-variance optimization and are subject to certain assumptions and constraints, including allocations to private assets of 0% and 20% to generate the respective frontiers. Private assets are represented by global buyout, global private credit, and global infrastructure returns as reported by MSCI Burgiss. Non-private assets are represented by the ICE BofA USD Investment Grade Corporate Credit Index, the MSCI World Index, and the ICE BofA USD High Yield Corporate Credit Index. The results are hypothetical and for illustrative purposes only. There can be no assurance that any portfolio will achieve results similar to those shown, that the assumptions used will prove to be accurate, or that any allocation will achieve its intended objectives. Actual results may differ materially. 2. Source: Carlyle Global Research & Investment Strategy (GRIS) Analysis; Internal Carlyle Data, MSCI, Bloomberg. Returns calculated 06/30/2002 to 03/31/2025. Traditional 60 / 40 portfolio consists of 60% S&P 500 and 40% Barclays Aggregate Bond Index. Alts imbedded 60 / 40 portfolio consists of 12% MSCI Global Buyout, 8% Cambridge Opportunistic Credit, 48% S&P 500, 32% Barclays Aggregate Bond Index. Private equity investment fund or portfolio investment returns are not directly comparable with public market equivalent (PME) indices due to the asset class's illiquid nature, which leads to a lack of frequent pricing of underlying assets and irregular timing of cash flows. Investment volatility of a PME may differ from Private Equity fund, portfolio, or strategy reflected herein. A PME represents a broadly diversified portfolio of securities that may have a materially different risk profile to that of a Private Equity fund or portfolio. Indices do not include any expenses or fees, which would lower performance, and PME performance does not otherwise reflect any costs associated with investing in such indices. The indices are not subject to fees or expenses, and they are not available for direct investment. Their performance is not intended to serve as an appropriate benchmark for comparison with a fund, but rather is provided for reference against well-known and widely recognized market indices.

# Risk Factors

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Prospective investors should be aware that an investment in a Private Fund ("a fund") involves a high degree of risk, and it is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a Fund and for which a Fund does not represent a complete investment program. An investment in a Fund should only be considered by persons who can afford a loss of their entire investment. Prospective investors are urged to consult with their own financial, tax, and legal advisors about the implications of investing in a Fund. The following is a summary of only certain considerations for investing in private funds and is qualified in its entirety by each applicable Fund's offering materials, which may contain additional information about associated risks pertaining to an investment in a Fund.

**Speculative Investment.** Carlyle cannot provide any assurance that it will be able to choose, make or realize any particular investment, asset, or portfolio on behalf of a Fund. There can be no assurance that investments made by a Fund will be able to generate returns or that the returns will be commensurate with the risks of investing in the type of transactions described herein. The activity of identifying, completing and realizing upon attractive investments is highly competitive and involves a high degree of uncertainty. A Fund must compete for investments with other private market investors having similar investment objectives. The portfolio companies in which a Fund may invest (directly or indirectly) are speculative investments and will be subject to significant business and financial risks.

**Highly Competitive Market.** The activity of identifying, completing and realizing upon attractive investments is highly competitive and involves a high degree of uncertainty. A Fund will be competing for investments with other private equity investors having similar investment objectives. It is possible that competition for appropriate investment opportunities may increase, thus reducing the number of investment opportunities available to a Fund and adversely affecting the terms upon which investments can be made.

**Highly Illiquid and Difficult to Value.** A traditional Fund is intended for long-term investment by investors that can accept the risks associated with making highly speculative, primarily illiquid investments in privately negotiated transactions. There is no organized secondary market for investors' interests in a traditional Fund nor is there an organized market for which to sell a traditional Fund's underlying investments, and none is expected to develop. Withdrawal and transfer of interests in a traditional Fund are subject to various restrictions, and similar restrictions will apply in respect of such Fund's underlying investments. Further, the valuation of any Fund's investments will be difficult, may be based on imperfect information and is subject to inherent uncertainties, and the resulting values may differ from values that would have been determined had a ready market existed for such investments, from values placed on such investments by other investors and from prices at which such investments may ultimately be sold.

**Investors in a Fund may bear multiple layers of fees and expenses.** In general, a Fund's investors will bear the fees, expenses and carried interest of the Fund, and could indirectly bear any fees, expenses and carried interest (if any) of the Fund's investments. This is especially common in fund-of-fund structures. Such amounts could be material and could result in greater expense to a Fund's investors than if such fees, expenses and carried interest were not charged by both a Fund and its underlying investments.

**Portfolio Companies Risks.** The portfolio companies in which a Fund invests, either directly or indirectly through an Underlying Fund, may involve a high degree of business and financial risk. Portfolio companies may be in early stages of development, may have operating losses or significant variations in operating results and may be engaged in rapidly changing businesses with products subject to a substantial risk of obsolescence. Portfolio companies may also include companies that are experiencing or are expected to experience financial difficulties, which may never be overcome. In addition, they may have weak financial conditions and may require substantial additional capital to support their operations, to finance expansion or to maintain their competitive positions.

**Complex Tax and Regulatory Risks.** A Fund and a Fund's investments may involve a complicated tax structures and there may be delays in distributing important tax information to investors. In addition, legal, tax and regulatory changes (including changing enforcement priorities, changing interpretations of legal and regulatory precedents or varying applications of laws and regulations to particular facts and circumstances) could occur during the term of a Fund that may adversely affect any of such Fund or its investors.

**No assurance can be given that a Fund's investment program will be successful. Accordingly, a Fund should be considered a speculative investment that entails substantial risks, and a prospective investor should invest in a Fund only if they can sustain a complete loss of their investment.**

# Guest Speaker: Geopolitics

Gen. David Petraeus, USA, Ret.  
Partner  
Chairman, Global Institute  
Chairman, KKR Middle East

KKR



# Guest Speaker: Geopolitics

## Gen. David Petraeus, US Army, Ret. | KKR



General David H. Petraeus (US Army, Ret.) (New York) joined KKR in 2013. He is a Partner at KKR, Chairman of the KKR Global Institute, and Chairman of KKR Middle East. He is also a member of the boards of directors of Optiv and OneStream, a Strategic Advisor for Sempra and Advanced Navigation, a personal venture investor, an academic, and the co-author (with British historian Andrew Roberts) of the New York Times best-selling book “Conflict: The Evolution of Warfare from 1945 to Gaza”.

Prior to joining KKR, General Petraeus served over 37 years in the U.S. military, culminating his career with six consecutive commands as a general officer, five of which were in combat, including command of the Surge in Iraq, command of U.S. Central Command, and command of coalition forces in Afghanistan.

Following retirement from the military and after Senate confirmation by a vote of 94-0, he served as Director of the CIA during a period of significant achievements in the global war on terror.

General Petraeus graduated with distinction from the U.S. Military Academy and is the only person in Army history to be the top graduate of both the demanding U.S. Army Ranger School and the U.S. Army’s year-long Command and General Staff College. He also earned a Ph.D. in international relations and economics from Princeton University.

General Petraeus has earned numerous awards and decorations, including four Defense Distinguished Service Medals, the Bronze Star Medal for Valor, two NATO Meritorious Service Medals, the Master Combat Action Badge, the Ranger Tab, and Master Parachutist and Air Assault Badges.

# Closing Remarks

Day 1

Andrew Junkin  
Chief Investment Officer



# Guest Speaker: Cybersecurity & AI

Rod Aliabadi  
Managing Director,  
Private Equity

Vista Equity Partners



# Guest Speaker: Cybersecurity & AI

## Rod Aliabadi | Vista Equity Partners



Rod Aliabadi joined Vista Equity Partners in 2008 and is a Managing Director on the Flagship investment team responsible for sourcing, executing and managing private equity investments. In this capacity, Mr. Aliabadi spends a considerable amount of time sourcing and executing investments in the Cyber+ and Horizontal software subsectors. Mr. Aliabadi is a member of the Flagship Fund Investment Committee and plays an active role in the Firm's current investments in EAB, KnowBe4, Securonix and TripleLift. Mr. Aliabadi was also actively involved in the Firm's former investments in Aderant, BigMachines, Forcepoint, Integral Ad Science (NASDAQ: IAS), Mediaocean, Mitratach, Numerator, Ping Identity, Relias Learning, SirsiDynix, SumTotal and Websense.

Prior to joining Vista, Mr. Aliabadi worked at the Stanford Genome Technology Center, where he focused his efforts on developing nanotechnology-driven diagnostics. During his time at the Stanford Genome Technology Center, Mr. Aliabadi was also involved in the creation and spin-out of NextBio, a SaaS-based provider of tools for integrating public and corporate genomic data, which was later acquired by Illumina in 2013.

Mr. Aliabadi received a B.E. in Biomedical Engineering from Vanderbilt University.



# VRS Board Retreat Cybersecurity & AI

MARCH 2026

CREATED FOR VIRGINIA RETIREMENT SYSTEM – FOR DISCUSSION PURPOSES ONLY

*Confidential and Proprietary*

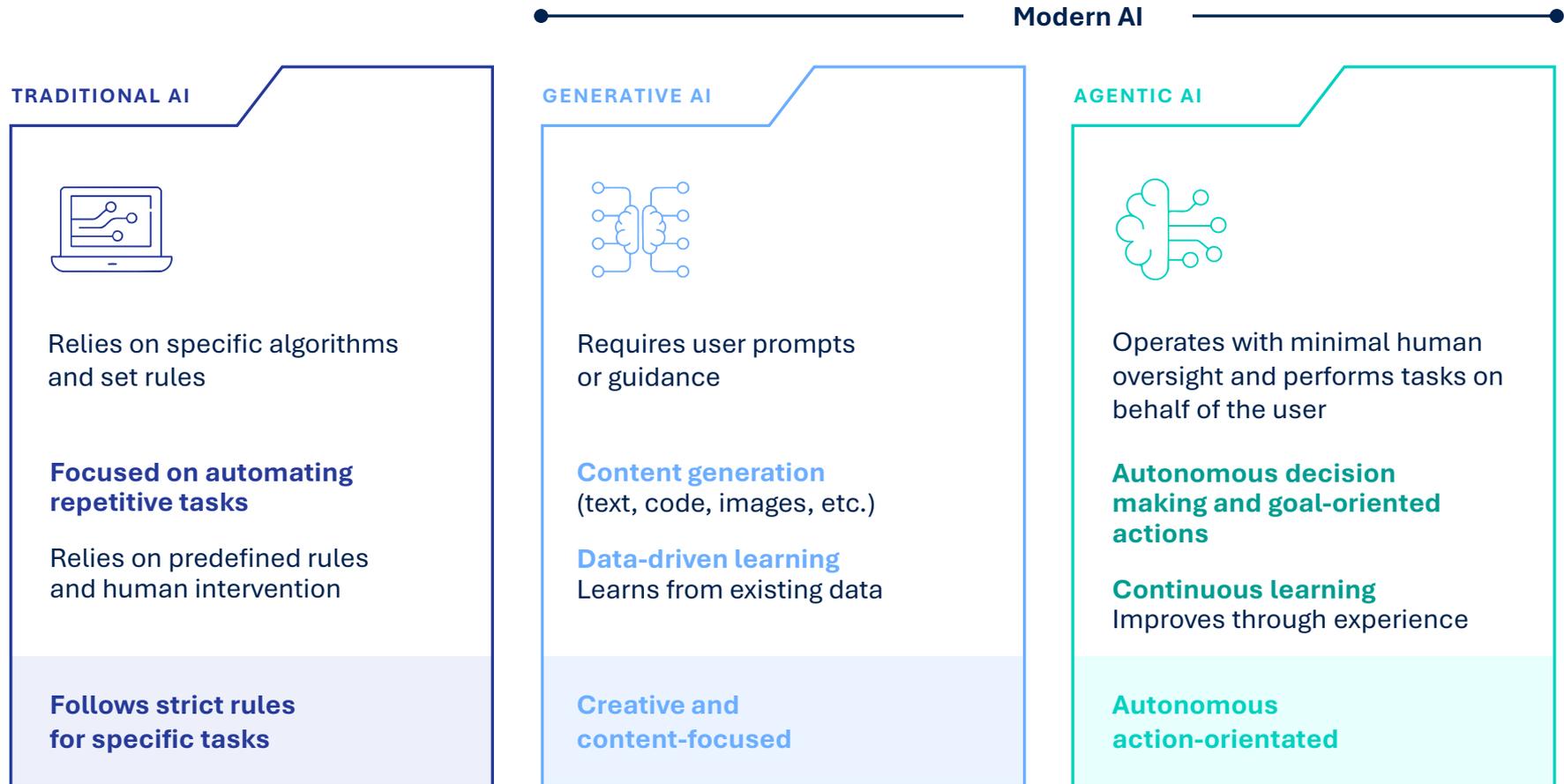
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- 02 Cybersecurity Overview
- 03 Cybersecurity Case Studies

# What Is Modern AI?

01

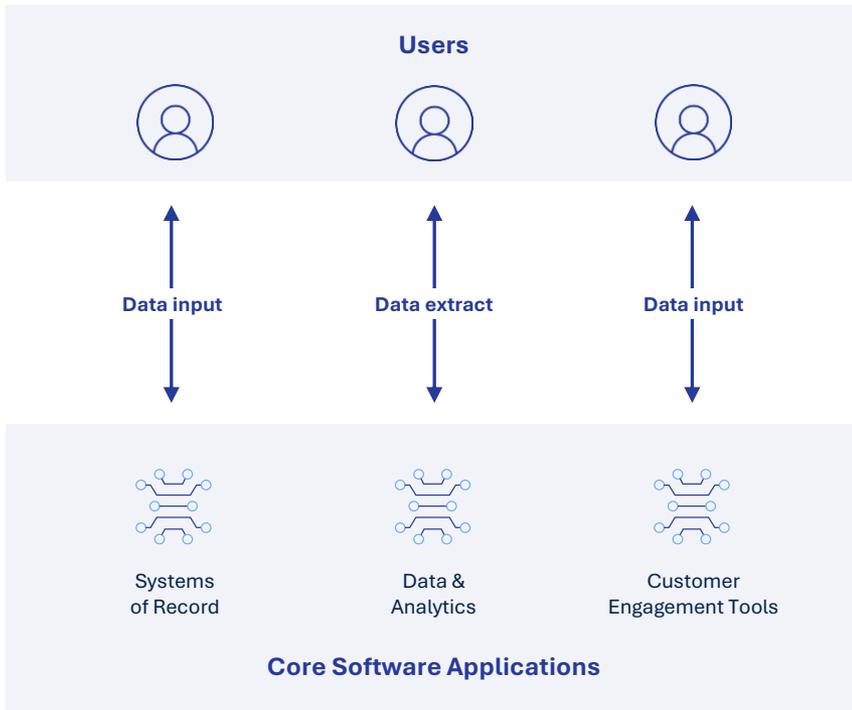
# What Is Modern AI?



# What Is Modern AI?

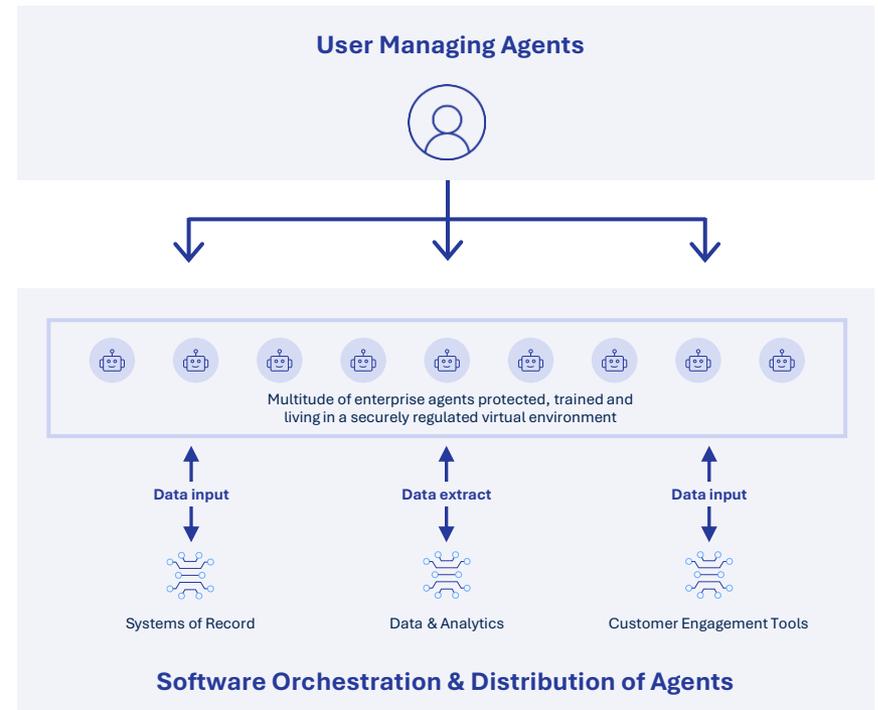
## Traditional Software and AI

Human workers interact with software core to business operations



## Enterprise Agentic AI

“Enterprise Agents” automate work, interfacing seamlessly with humans AND/OR other “Enterprise Agents”

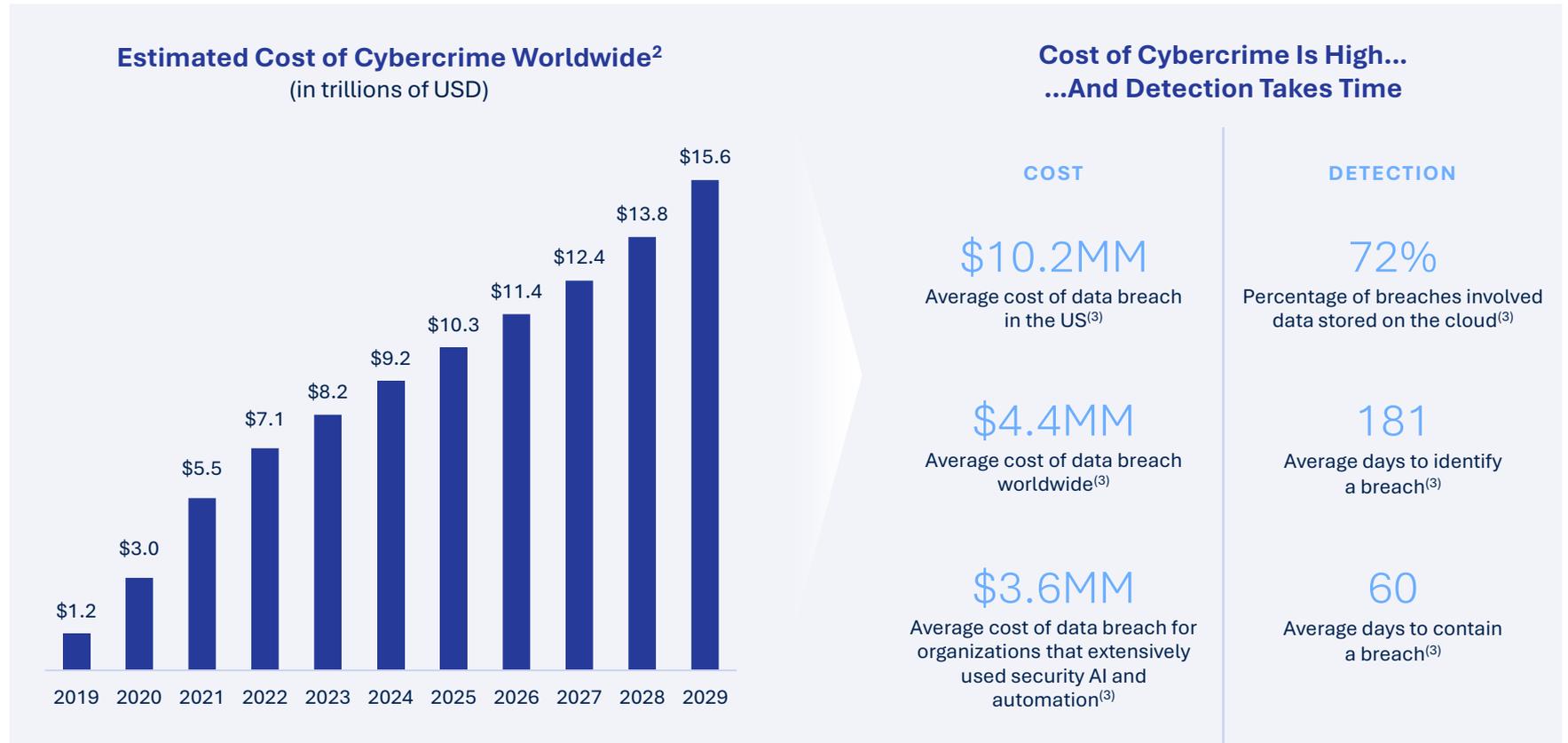


# Cybersecurity Overview

02

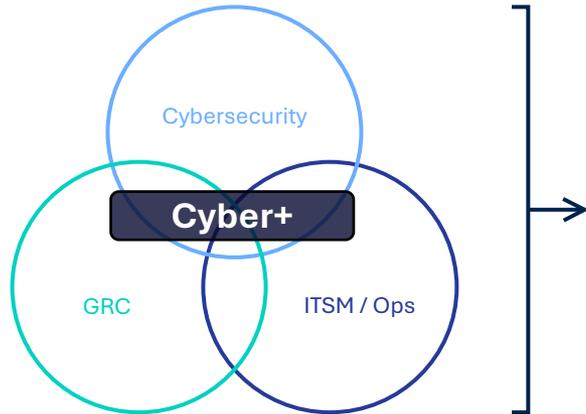
# The Problem Statement

**The cost of cybercrime continues to rise and is expected to reach nearly \$16TN by 2029**  
**Cybercrime is perpetual and persistent with crime / cyber attacks rising faster than the resources to combat it<sup>1</sup>**



Past performance is not necessarily indicative of future results, and there can be no assurance that historical trends will continue during the life of any Vista Fund. Certain information contained on this slide has been obtained from published and non-published sources prepared by other parties, which in certain cases have not been updated through the date hereof. While such information is believed to be reliable for the purposes of this document, Vista does not assume any responsibility for the accuracy or completeness of such information and such information has not been independently verified by it. Sources: (1) CrowdStrike 2025 Global Threat Report as of February 2025 (2) Statista Estimated Cost of Cybercrime Worldwide 2018 – 2029 as of February 2026 (3) IBM Cost of a Data Breach Report 2025 as of July 2025

# Overview of Cyber+ Market and Themes



- Cybersecurity solutions **alone are not enough**
- Security must be integrated into process and operations with **governance, risk and compliance (“GRC”) as a core tenant** of a holistic security strategy
- Inevitably, **IT will be required to enable** continued cybersecurity posture, overall business enablement, and continuity
- All must work together for a company to be **best in class, creating Cyber+**

## PLATFORM CONSOLIDATION

New wave of security focused on **simplifying and consolidating security products** to ultimately make the end user experience simpler

## SURGE IN REGULATORY & PRIVACY SCRUTINY

**Increased regulation and transparency** surrounding security posture and cyber incidents expected to continue

## INCREASINGLY DISTRIBUTED WORKFORCES

As network perimeters dissolve & IT environments become more complex and distributed, **endpoint and user identity become new perimeter (“zero trust”)**

## EXPANDING ATTACK SURFACE

**Increasing number of endpoints** on a network where a hacker could infiltrate into a system **(through people, devices, and software)**

## DURABILITY OF BUDGETS

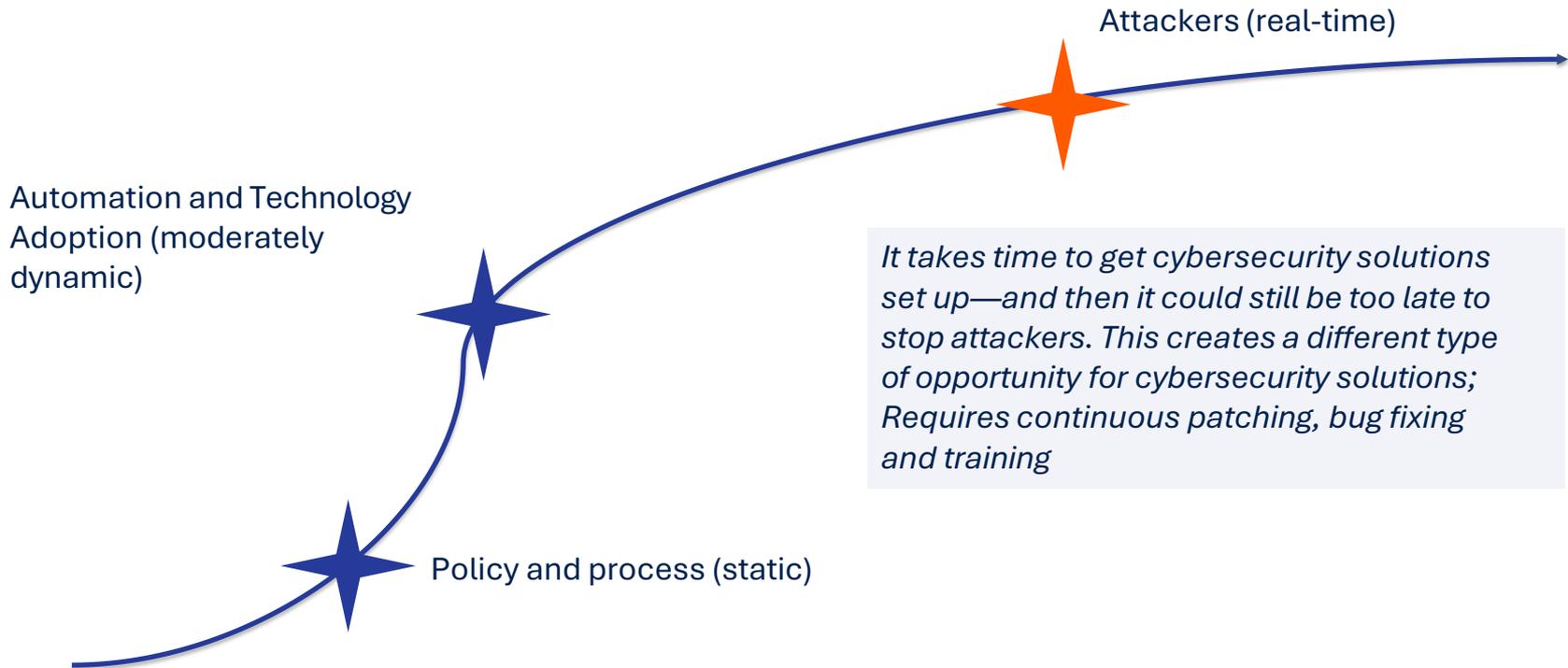
**Proactive approach towards security and compliance** shields budget cuts due to how closely it is tied to **operational and reputational risk**

## SCARCITY OF TALENT

Worldwide **shortage of 2.8MM cybersecurity workers<sup>1</sup>**

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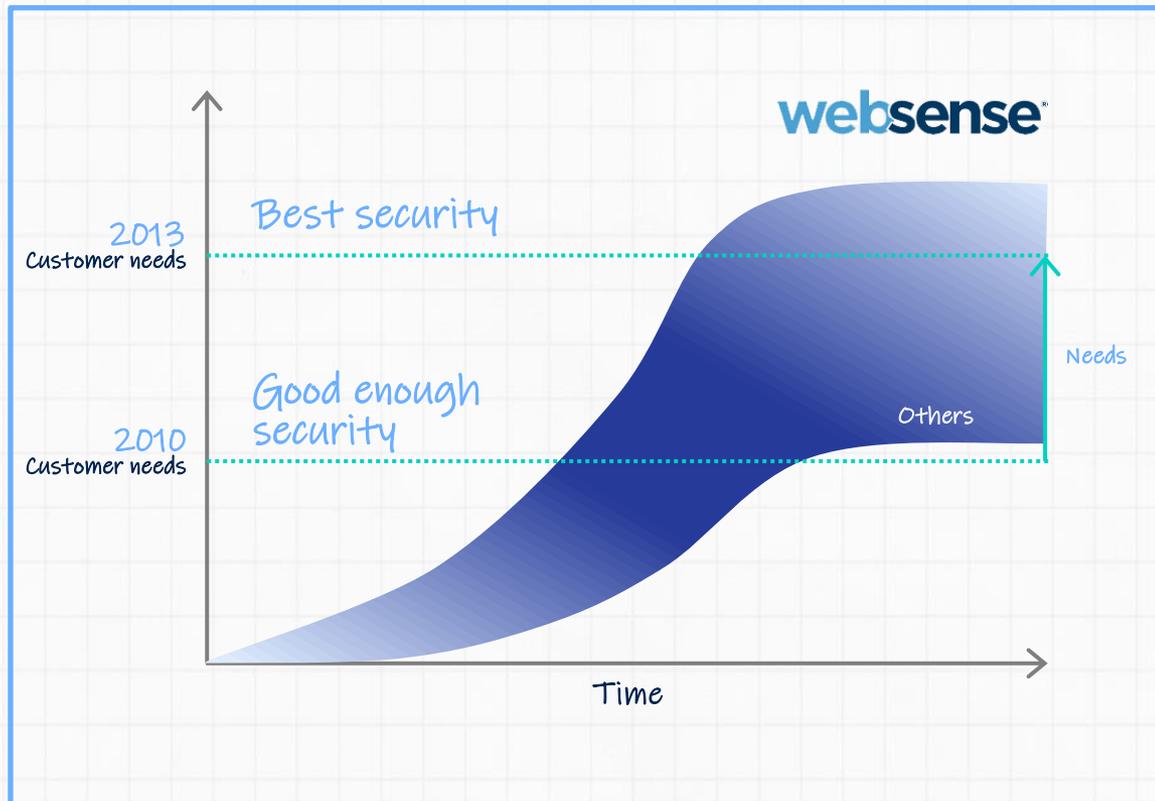
# Attackers Will Always be Ahead



# Cybersecurity Case Studies

03

# Cybersecurity in 2013



## Security Concerns Addressed

1. Protect intellectual property against data theft
2. Protection against malware/APT
3. Protect mobile users (e.g., laptops)
4. Intelligence for context awareness
5. Spear Phishing

# Cybersecurity in 2016

## More Everything



## Security Concerns Addressed

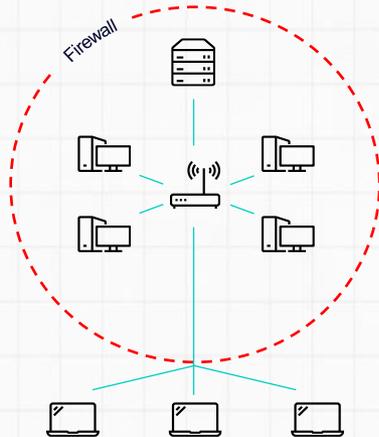
- ✓ Protect intellectual property against data theft
- ✓ Protection against malware/APT
- 3. Protect mobile users (e.g., laptops)
- 4. Intelligence for context awareness
- 5. Spear Phishing

# Cybersecurity in 2016

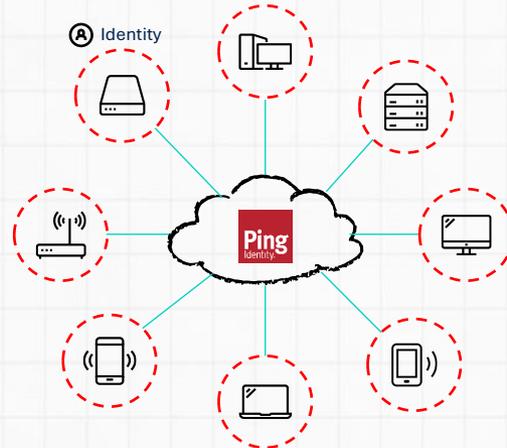
## Paradigm Shift

Driven by  
cloud & mobile

Yesterday's Security Model



Today's Reality

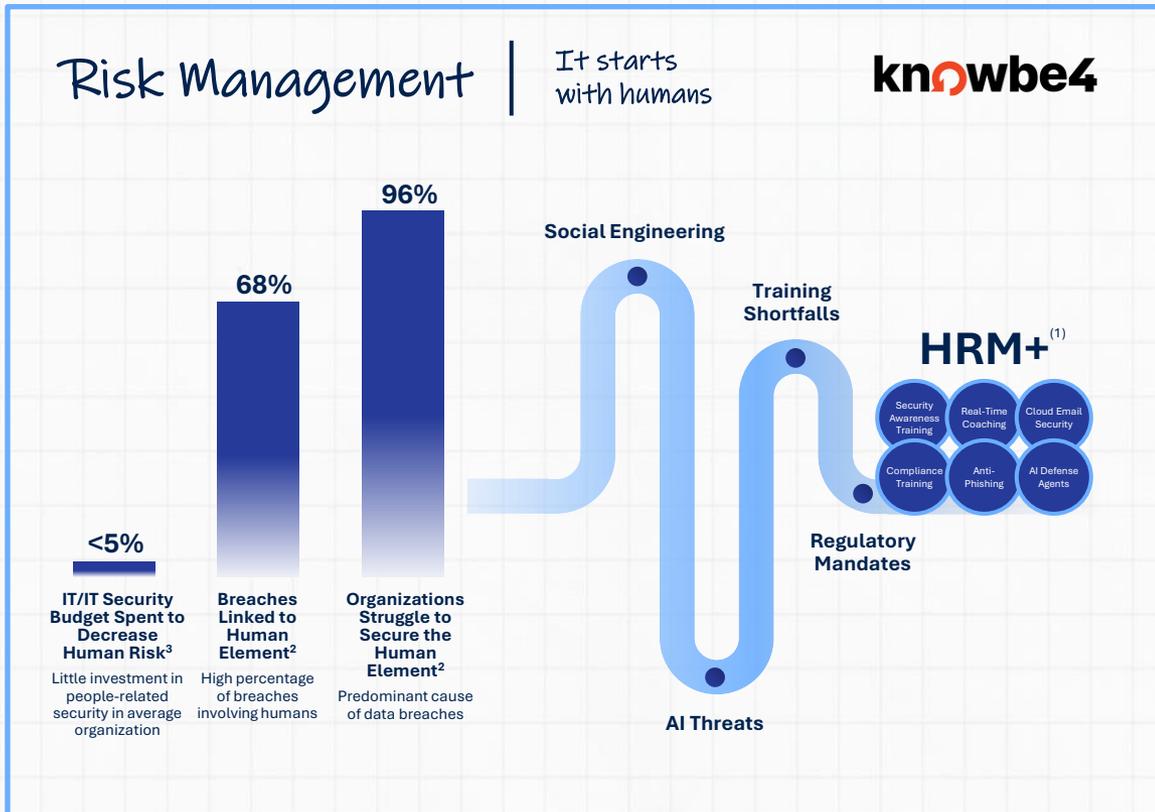


"Identity is the new perimeter"

## Security Concerns Addressed

- ✓ Protect intellectual property against data theft
- ✓ Protection against malware/APT
- 3. Protect mobile users (e.g., laptops)
- 4. Intelligence for context awareness
- 5. Spear Phishing

# Cybersecurity Today



- ## Security Concerns Addressed
- The human endpoint**
    - Protect intellectual property against data theft
    - Protection against malware/APT
    - Protect mobile users (e.g., laptops)
    - Intelligence for context awareness
  - Spear Phishing**

Case studies presented herein are for informational purposes only and are intended to illustrate Vista's sourcing experience and the profile and types of investments previously pursued by Vista. It should not be assumed that investments made in the future will be comparable in quality or performance to the investments described herein. Information presented on this slide is based upon Vista's analysis and assumptions and reflect Vista's beliefs. Third-party logos included herein are provided for illustrative purposes only. Inclusion of such logos does not imply affiliation with or endorsement by such firms or businesses. (1) HRM+ is KnowBe4's all-in-one human risk management platform. Sources: (2) The State of Human Risk 2025: The New Paradigm Of Securing People In The AI Era as of December 2025 and KnowBe4 Security Awareness Training Website as of Feb 2026 (3) KnowBe4 Blog: If Social Engineering Is 70% - 90% of Attacks, Why Aren't We Acting Like It? as of November 2024

## Spear Phishing...

websense®

From: Microsoft Windows Team <windowsupdate@microsoft.com> Sent: Thu 1/31/2013 1:11PM  
 To: McCormack, John  
 Cc:  
 Subject: Windows Upgrade

<http://webdefence.global.blackspider.com/urlwrap/?q=AXicHcg9EkExEEDhNUqvoU6iYFAZY1RqfRJ73ZDNms0S9zH1HsZPdYrvjMbwmgC8pwCSBzclpsrDkE85clHhbCITiDsetrvz3mFflWECfUlw5ON10zBULBXa696W1vbsQSsgi7rcC-Jyw8tpShcudOWyolbtdgORK8AESDSa&Z>

Please sign on with your email.

Thanks

Microsoft Windows Team

## Security Concerns Addressed

### 1. The human endpoint

✓ Helps protect intellectual property against data theft

✓ Protection against malware/APT

✓ Protect mobile users (e.g., laptops)

✓ Intelligence for context awareness

### 6. Spear Phishing

## ...Social Engineering

E

[esmith@jordansmithlaw.com](mailto:esmith@jordansmithlaw.com)

To: Demo

○ External email >

○ First time sender >

✖ This email shows **strong** signs of phishing >

←

knowbe4

Michael,

Good evening. Thanks for the clarification re: the jurisdiction for Project A good standing certificate and its required organizational documents. **ABC Ventures LLC** will be the payee for the purchase price... and we will provide its W-9 and account wiring instructions.

Thanks.

Elliot J. Smith  
 JORDAN SMITH LLP | Attorneys at Law  
 148 Lafayette Street, Floor 4  
 New York, NY 10013  
 MAIN | 161.785.56055

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From: Michael Jones <[Michael.Jones@ventures.com](mailto:Michael.Jones@ventures.com)>  
 Sent: Monday, March 28, 2025 8:47 PM  
 To: [esmith@jordansmithlaw.com](mailto:esmith@jordansmithlaw.com); 'Jane Brown' <[JBrown@KPJ.com](mailto:JBrown@KPJ.com)>  
 Cc: Frank Harbottle  
 Subject: RE: FW: Project A - Purchase Agreement, Operating Agreement

Thanks, Elliot. Since this is an asset deal and Project A is a New York LLC, I think we just need a NC good standing certificate for closing, and, yes, Project A's articles and operating agreement are the only organizational documents that we need attached to the Secretary's Certificate. When I create the execution version for the APA I'll update it to only require delivery of a good standing certificate from the Seller's jurisdiction of formation since Seller foreign qualifications aren't as necessary for asset deals - particularly when there aren't many assets changing hands like we have here. Also, just to confirm, will you be expecting the purchase price to be funded in a single wire transfer to **Think Broccoli**? That will simplify the W-9 and wire transfer instruction deliverables.

## Security Concerns Addressed

### 1. The human endpoint

- ✔
 Protect intellectual property against data theft
- ✔
 Protection against malware/APT
- ✔
 Protect mobile users (e.g., laptops)
- ✔
 Intelligence for context awareness
- ✔
 Spear Phishing
- ✔
 7. Social Engineering

# Agentic in Action



# Conclusion

## KEY THEMES IN CYBER

Increasingly Sophisticated and AI Borne Threat Actors

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Shifting Geopolitical Landscape

---

Continued Technological Transformation and Adoption

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Exponential Increase in the Volume of Non-Human Identities

# Important Disclosures

# Important Disclosures

This Presentation is not, and may not be relied on in any manner as, legal, tax, investment, accounting or other advice or as an offer to sell or a solicitation of an offer to buy limited partnership or comparable limited liability equity interests (the “Interests”) in any fund or other similar investment vehicle (each, a “Fund”), including any debt or small-cap buyout fund sponsored by Vista or any of its affiliates. Any such offer or solicitation will only be made pursuant to the final confidential private placement memorandum or other similar offering documents of any such Fund (as amended, supplemented and/or restated from time to time, a “Memorandum”) and such Fund’s subscription documents, which will be furnished to qualified investors on a confidential basis at their request for their consideration in connection with such offering by Vista. The information contained in this Presentation will be superseded by, and is qualified in its entirety by reference to, the applicable Memorandum, which will contain information about the investment objective, terms and conditions of an investment in the applicable Fund, will contain tax information and risk disclosures that are important to any investment decision regarding such Fund and should be read carefully prior to an investment in any Fund. This Presentation does not constitute a part of a Memorandum. No person has been authorized to make any statement concerning any Fund other than as will be set forth in the applicable Memorandum and definitive subscription documents, and any representation or information not contained therein may not be relied upon.

Artificial intelligence technology models (“AI”), including generative artificial intelligence and similar technologies (“GenAI”), can pose risks to Vista, the Funds, and their investments. AI is an emerging and rapidly evolving technology and therefore it is difficult to fully assess the risks associated with it and those posed to Vista, the Funds, and/or the Funds’ investments. Vista endeavors to evaluate AI models and related risks before using them in its business. However, there can be no assurance that it will do so successfully, and the use of AI may adversely affect Vista and the Funds and/or the Funds’ investments. Vista is exposed to the risks of these developing and evolving technologies, including in situations where AI is used by third-party service, data, or information vendors, or by companies where the Funds have or are considering an investment. Use of AI implicates risks resulting from inaccuracies in data input and output or signals, modeling, and information security and related regulatory developments, among others. Vista and/or the Funds could incur liability or expenses in connection with claims of infringement or similar claims by third parties related to information which Vista receives through GenAI. As a result, these risks may subject Vista to potential litigation (particularly trademark, licensing terms of use, and copyright claims), conflicts of interest, and/or other legal or operational risks. It is possible that new regulations may emerge in this area which impedes or hinders Vista’s ability to use AI in the future. The adoption of proposed regulatory rules regulating AI and other similar systems may also impose additional obligations and expenses on Vista. Vista’s practices regarding the use of AI potentially disadvantage Vista competitively and there can be no assurance that Vista’s anticipated use of AI will be able to continue without restrictive regulatory requirements. Any of the foregoing factors could have a material and adverse effect on Vista, the Funds and the portfolio companies.

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Unless otherwise noted, information contained herein relating to industry sectors and sizes has been determined by Vista based on internal Vista research and data. Although Vista believes that such determinations are reasonable, they are inherently subjective in nature. Other market participants may make different determinations relating to sector characterization and size based on the same underlying data.

Certain information contained in this Presentation has been obtained from published and non-published sources prepared by other parties, which in certain cases have not been updated through the date hereof. While such information is believed to be reliable for the purposes of this Presentation, Vista does not assume any responsibility for the accuracy or completeness of such information and such information has not been independently verified by it. This Presentation will not be updated or otherwise revised to reflect information that subsequently becomes available, or circumstances existing or changes occurring after the date hereof, or for any other reason. In this Presentation, references to “\$” or “US\$” shall be to the lawful currency of the United States.

The projections included in this Presentation have been prepared and are set out for illustrative purposes only, and do not constitute forecasts. They have been prepared based on Vista’s current view in relation to future events and various assumptions and estimations, including estimations and assumptions with respect to events that have not occurred, any of which may prove incorrect. Actual results may differ materially from projects and there can be no assurance that any historical trends will continue during the life of any Vista Fund.

Case studies and other descriptions of specific investments presented herein are for informational purposes only and are intended to illustrate Vista’s sourcing experience and the profile and types of investments previously pursued by Vista. It should not be assumed that investments made in the future will be comparable in quality or performance to the investments described herein. Further, references to specific investments included herein should not be construed as a recommendation of any particular investment or security. The investments listed should not be assumed to have been profitable. Past performance is not an indication of future results. The metrics regarding select aspects of the company’s operations were selected by Vista on a subjective basis. Such metrics are provided solely for illustrative purposes to demonstrate elements of the company’s business, are incomplete, and are not necessarily indicative of the company’s performance or overall operations. There can be no assurance that historical trends will continue throughout the life of the Fund.

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Helping members  
plan for tomorrow,  
today

