MAY 2024

SOLOMON
PARTNERS

RIPE FOR DISRUPTION:

A RISING CATEGORY OF SILICON VALLEY-BACKED COMPANIES IS CHANGING THE DEFENSE LANDSCAPE

INTRODUCTION

Despite rapid technological innovation that has disrupted virtually every industry, the U.S. defense sector historically has been the domain of mature, publicly traded contractors primes given the steep barriers to entry—namely, the high costs and complexities of constructing multibillion-dollar aircraft carriers and defense systems. However, with the rise of new technologies, Silicon Valley startups and primes are increasingly playing a pivotal role in protecting and defending Americans at home and our allies abroad.

The entry of venture-backed startups into the defense ecosystem marks the most significant transformation since the 1990s, when, following the end of the Cold War, the network of 51 major defense contractors consolidated into today's big-five players: Lockheed Martin, RTX, General Dynamics, Northrop Gruman, and Boeing, all publicly traded companies located in and around Washington, D.C.

Though these five contractors remain the dominant players, the Department of Defense (DoD) is also contracting with nimbler, fast-growing enterprises of the "move fast and break things" variety to augment and accelerate its capabilities across increasingly ubiquitous technological domains such as artificial intelligence (AI), machine learning (ML), autonomous systems, and data and analytics. As the DoD continues to rely on AI-enabled warfighting technology, Silicon Valley technology will likely be in demand for the foreseeable future, setting up a second round of major consolidation as the industry's leading contractors vie to gain a foothold over the competition.

At Solomon Partners, we have unique insights into M&A opportunities in the defense and aeronautics sectors, given our deep relationships with industry operators and our knowledge base and network within technology, software, data, and analytics. This paper provides a framework for how strategic acquirers and investors can evaluate the ever-evolving landscape of defense technology opportunities to gain a competitive advantage.

OVERVIEW

The DoD must grow and innovate technologically. As Secretary of Defense Lloyd J. Austin III remarked at the Reagan National Defense Forum on December 2, 2023, "When we sharpen our tech edge, we expand our military edge."[1]

Whereas spending on national defense, as a percentage of GDP, remains about half of what it was during the last decade of the Cold War, the DoD's latest budget request included $145 billion[1] for R&D and $170 billion[1] for procurement—the largest of such investments in U.S. history. Additionally, this funding is further bolstered by the creation of the Defense Innovation Unit in Silicon Valley, which focuses on fielding and scaling commercial technology across the military, and the Office of Strategic Capital, designed to attract and scale private capital in critical technologies.

On November 2, 2023, Deputy Secretary of Defense Kathleen Hicks announced the release of the 2023 DoD Data, Analytics and AI Adoption Strategy.[1] "We've worked tirelessly, for over a decade, to be a global leader in the fast and responsible development and use of AI technologies in the military sphere, creating policies appropriate for their specific uses," she said. "As we've focused on integrating AI into our operations responsibly and at speed, our main reason for doing so has been straightforward: because it gives us even better decision advantage than we already have today."[2]
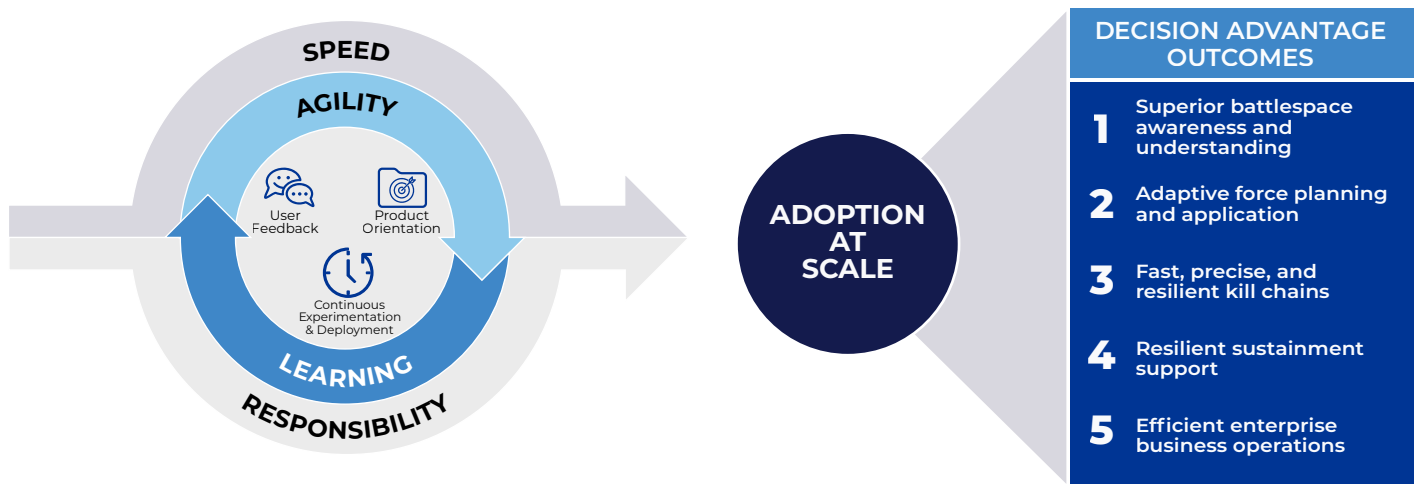

Exhibit 1: Employing an Agile Approach to Adoption to Scale Fosters Advantaged Outcomes[1]

When the DoD outlined its AI strategy in 2018, it sought to provide a roadmap for leveraging emerging AI capabilities for the future. The strategy prescribes an agile approach to AI development and application, emphasizing speed of delivery and adoption at scale, leading to five specific decision-advantage outcomes: quality data, governance, insightful analytics and metrics, assurance, and responsible AI.

"By putting our values first and playing to our strengths, the greatest of which is our people, we've taken a responsible approach to AI that will ensure America continues to come out ahead," Hicks said. "Meanwhile, as commercial tech companies and others continue to push forward the frontiers of AI, we're making sure we stay at the cutting edge with foresight, responsibility and a deep understanding of the broader implications for our nation."[1]
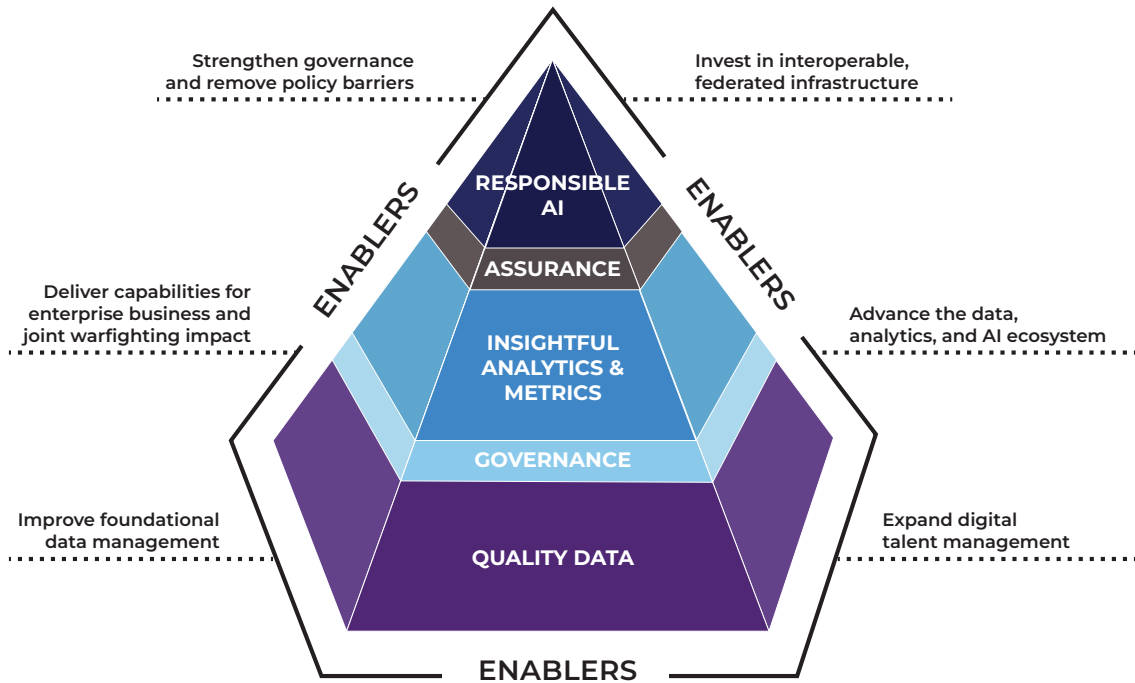
Exhibit 2: Strategic Goals and the AI Hierarchy of Needs[1]

With DoD now established as a core AI customer, the next logical question becomes: How do investors and major players effectively invest or strategically acquire into this broad and constantly evolving ecosystem?

Sustained American leadership depends on strong partnerships among private and public sectors to deliver innovative, technology-driven solutions. However, the barriers to entry can be high when it comes to developing advanced technologies backed by years of experience and millions (or billions) of dollars of research and development spend. Companies and investors looking for an advantage in this proverbial arms race may find it less expensive—and less daunting—to acquire or otherwise financially back those already in the government's orbit.

Smaller startups may not have an established and trusted relationship with the DoD or other large organizations that prioritize predictability and security. If they can gain one, however, a domino effect can occur. The marriage of technological innovation and trusted access to one or more government agencies can provide the path to sustained success in the defense sector (and can be facilitated via acquisition or capital investment).[3]

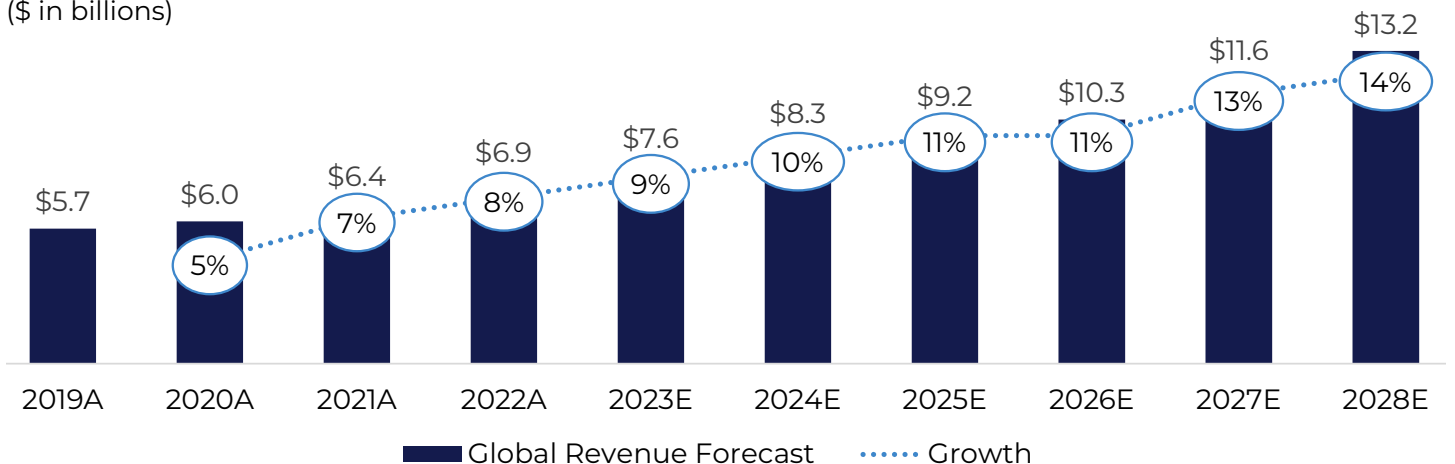## GLOBAL REVENUE FORECAST (2023E-2028E): 12%[4]

($ in billions)

Exhibit 3: AI Spending in the Global Defense Market Is Accelerating

In a 2023 case study conducted by the Hoover Institute, an independently operated unit of Stanford University, the discussion centered on the prevailing concerns of modern times. "These three forms of disruption—operational, industrial, and technological—have put the U.S. defense enterprise in a strategic predicament. Our ability to generate and project military power is overly reliant upon small numbers of exquisite systems that our industrial base cannot build or replace at relevant scales and speed."[5]

The massive industrial scale that has underpinned the longstanding might of the U.S. military is ripe for disruption, as 21st-century defense prowess now seems to call for a much different form of military strategy. In the words of the Hoover Institute, "A massive arsenal of smaller, lower-cost, autonomous systems...fielded rapidly and at scale to U.S. forces and transferred in large numbers to our allies and partners."

Referred to as a "Moneyball Military," this form of warfare has ushered in a wave of new defense department entrants skilled in AI, autonomous systems, and data analytics. The DoD is deploying these emerging technologies in the following ways:

ARTIFICIAL INTELLIGENCE

A mindset of adaption or death runs rampant throughout Silicon Valley and the broader tech community. This technological Darwinism is core to the defense industry's assimilation of AI/ML.

In January, a watershed event occurred when OpenAI removed its ban on using ChatGPT for "military and warfare."

"Given the use of AI systems in the targeting of civilians in Gaza, it's a notable moment to decide to remove the words 'military and warfare' from OpenAI's permissible use policy," said Sarah Myers West, Managing Director of the AI Now Institute and a former AI policy analyst at the Federal Trade Commission. "The language in the policy remains vague and raises questions about how OpenAI intends to approach enforcement."[6]

Additionally, Myers West noted OpenAI's close partnership with Microsoft, a major defense contractor that has invested $13 billion in OpenAI and resells the company's software tools.

Following the policy change on January 16, reports showed that OpenAI was working with the Pentagon on several projects, including cybersecurity capabilities, in collaboration with the Defense Advanced Research Projects Agency (DARPA).

Though these systems are still in their infancy, the integration of AI and large language models (LLM) such as ChatGPT into the Pentagon's operations appears to be here for the long term, as the U.S. military currently has over 800 active AI projects across a wide range of areas.[7] The Pentagon, which now has a senior official in charge of "algorithmic warfare," asked for more than $3 billion for AI-related activities in its 2024 budget submission.

In the past several weeks, computer vision algorithms that form part of the DoD's flagship AI effort, Project Maven, have located rocket launchers in Yemen and surface vessels in the Red Sea and helped narrow targets for strikes in Iraq and Syria, according to Schuyler Moore, the chief technology officer of U.S. Central Command. A growing number of U.S. military officers predict that AI will transform how America and its enemies engage, ranking it alongside the radio and machine gun in its potential to revolutionize combat.

Outside of the U.S., Israel's military has confirmed the use of AI to make targeting recommendations in Gaza, while Ukraine is employing AI software in its effort to turn back Russia's invasion. China, meanwhile, has a national strategy to become "the world's primary AI innovation center" by 2030. While some may be concerned that the AI defense revolution is moving too quickly, others are increasingly concerned that the U.S. will fall behind if it does not make continued, high-octane progress.

The advantage will go "to those who no longer see the world like humans," Army research officials Thom Hawkins and Alexander Kot wrote in 2022. "We can now be targeted by something relentless, a thing that does not sleep."[8]

AUTONOMOUS SYSTEMS

Military leaders worldwide have prioritized the development of AI/ML models that serve as the horsepower behind autonomous systems such as aerial vehicles (UAVs), ground vehicles, and weapons systems.

Over the past few years, top military brass have pushed to deploy autonomous vehicles onto the battlefield amid a heightening of global geopolitical tensions. For instance, imaging software can now identify and survey targets and even assist soldiers by delivering supplies. However, a primary concern with the use of autonomous applications is the potential for unintended consequences, such as biases, discriminatory features, and errors, which could exacerbate conflicts.

As politicians and others in the halls of power debate the trade-offs associated with implementing autonomous systems into warfare, the U.S. position on the digital battlefield has continued to advance. On August 28, 2023, Deputy Secretary Hicks articulated the military's goal of constructing significant autonomous systems "of multiple thousands in multiple domains"[9] within the next two years. She described the belief that, by collaborating with the classic entrepreneurial spirit of American industry, the DoD will be in a solid position to advance these lofty goals.

"This is about systematically tackling the highest barriers to enabling and unleashing the potential of U.S. and partner innovations, some in DoD or labs or elsewhere in government, but most of all outside of it," Hicks said. "That means we must first see the whole of the defense innovation ecosystem to lower the myriad barriers that get in our way, and then must do the hard government work of removing those most damaging innovation obstacles, which is exactly what we've been doing."

How can the government speed the entry of autonomous systems into the defense sector and, most importantly, improve their application? So far, three highly disruptive new players—Anduril, BlueHalo, and Shield—have attracted robust institutional capital backing, helping to set a standard for new technological integration.

Founded in 2017, Anduril, which has raised $2.3 billion and is likely to raise another $400 million to $500 million while seeking a $10 billion valuation, supplies autonomous systems and services operating on its Lattice AI platform. The platform allows a single human to control and coordinate a wide range of autonomous assets across the ocean, land, and sky to deliver successful outcomes.

BlueHalo, backed by Arlington Capital Partners, offers a full suite of solutions across AI, autonomous systems, cyber, electronic warfare, and space and now generates an estimated annual revenue of $1 billion, with an employee base of around 2,400.

Founded in 2015, ShieldAI develops autonomous systems for situational awareness, aids in intelligence gathering, and improves mission outcomes for military and defense personnel. Its signature product is Hivemind, an AI-enabled autonomous flight software. The company, valued at $2.8 billion, raised $300 million in December.[10]

DATA ANALYTICS

With AI/ML advancements, the defense sector also has access to enhanced data analytics, which offers precise and rapid insights into critical situations, whether for drones, field combatants, cyber-security, or panoramic battlefield perception. Real-time, low-latency analytics holds immense importance across industries, yet its significance is heightened for militaries, given their continual pursuit of competitive advantages. The exhibit on the next page offers a comprehensive overview of the intricate interplay among various components of advanced data analysis, encompassing original data collection, management, visualization, machine learning, and optimization for forecasting.

On January 25, 2024, Army Col. Richard Leach, Intelligence Director, Defense Information Systems Agency, referred to the U.S. government dealing with a "tsunami of data" and shared his strategic perspectives on the matter.

"Let AI identify key pieces of information and maybe do some of the basic analysis," Leach said. "Let the analysts focus on the hard problem set so they're not wasting time, resources, and people."[11]

Leach's outlook is consistent with a view shared by others: to prevent eroded epistemics (degradation of knowledge systems due to dependency on AI) while exhibiting openness to further utilize data analytics as a tool in the field. To this end, the U.S. government has demonstrated interest in smaller solution providers to bolster traditional stalwarts.

In 2023, for example, the U.S. Space Force selected 18 companies for a data analytics and software contract valued at nearly $1 billion. The contract included companies such as C3 AI, Meroxia.io, Palantir, and Oracle, providing just one example of Silicon Valley's increasing importance within the government's sphere of influence.[12]
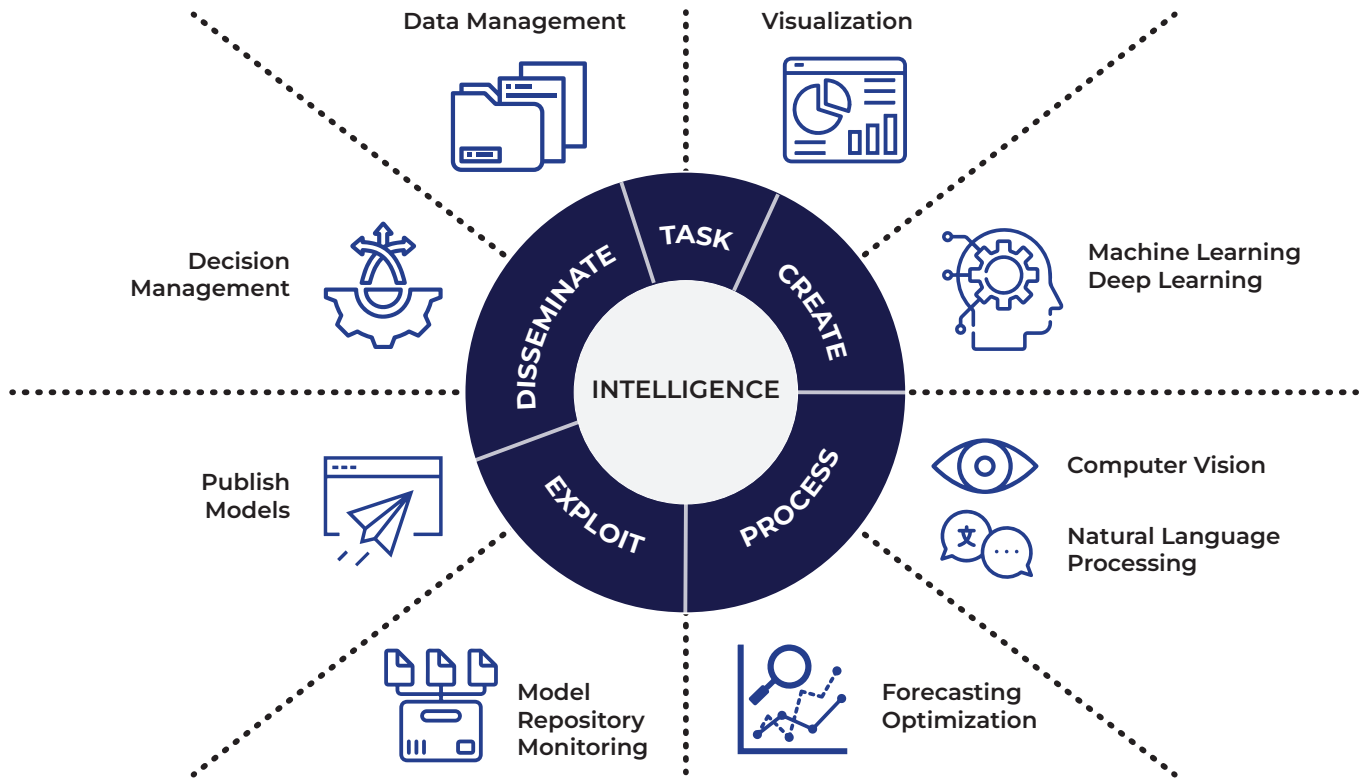

Exhibit 4: Wide-Ranging Tools Use Cases Emerge from Gathered Intelligence[11]

CONCLUSION

Like most institutions, the DoD is grappling with the reality of a changed world. The large, multibillion-dollar systems of the post-Cold War era have largely given way to far more agile tools that better allow U.S. and allied forces to sharpen their precision, improve targeting, and safeguard personnel and civilians.

If the U.S. wants to train, equip, and outfit the military of the future, the DoD and the larger defense ecosystem will need to continue tapping into Silicon Valley's ingenuity, harnessing technologies that have already fundamentally transformed every other corner of our world.

We believe that the U.S. is on the precipice of a fundamental realignment of the country's defense capabilities, which will provide startups, middle-market companies, and investors with a real opportunity to realize their value.

At Solomon Partners, we have deep roots and expertise in the defense and aeronautics industries, as well as technology, data, and analytics. If you'd like to learn more, please reach out today.

Sources:
1) U.S. Department of Defense; 2) Inside Defense; 3) TechCrunch, Bessemer Venture Partners, and Wedbush Equity Research; 4) Insight Partners; 5) Hoover Institution; 6) Intercept; 7) Bloomberg; 8) West Point; 9) National Defense Magazine; 10) Harvard Business Review, Forbes, and MIT Technology Review; 11) SAS; 12) Washington Technology.

INDUSTRIALS GROUP

Larry Gelwix
Partner
Head of Industrials
larry.gelwix@solomonpartners.com

Kent Fisher
Senior Advisor
Former Boeing
kent.fisher
@solomonpartners.com

Mark Bulanda
Senior Advisor
Former Emerson Electric
mark.bulanda
@solomonpartners.com

Parker Teufel
Vice President
parker.teufel
@solomonpartners.com

Daniel Posch
Associate
daniel.posch
@solomonpartners.com

Nick Magnini
Associate
nick.magnini
@solomonpartners.com

Jonathan Pedraza
Analyst
jonathan.pedraza
@solomonpartners.com

Drew Hunter
Analyst
drew.hunter
@solomonpartners.com

Maxwell Frank
Analyst
maxwell.frank
@solomonpartners.com

TECHNOLOGY GROUP

Craig Muir
Partner, Head of Software, Data and Analytics
craig.muir@solomonpartners.com

Jeffrey Derman
Partner
jeff.derman
@solomonpartners.com

Joe Watson
Managing Director
joe.watson
@solomonpartners.com

Jonathan Berger
Director
jonathan.berger
@solomonpartners.com

Max Schramm
Director
max.schramm
@solomonpartners.com

Brendan Kirk
Vice President
brendan.kirk
@solomonpartners.com

Miles Hanamirian
Analyst
miles.hanamirian
@solomonpartners.com

Lea Herzfeld
Analyst
lea.herzfeld
@solomonpartners.com

Tejas Kulkarni
Analyst
tejas.kulkarni
@solomonpartners.com

Trey Landsdale
Analyst
trey.landsdale
@solomonpartners.com

Ishaan Masand
Analyst
ishaan.masand
@solomonpartners.com

Matthew Shafer
Analyst
matthew.shafer
@solomonpartners.com

ABOUT SOLOMON PARTNERS

Founded over 30 years ago, Solomon Partners is a leading financial advisory firm with a legacy as one of the oldest independent investment banks. We advise on mergers, acquisitions, restructurings, recapitalizations, SPACs, capital markets solutions, and activism defense across a range of industries, including Business Services, Consumer Retail, Financial Services & FinTech, Financial Sponsors, Grocery, Pharmacy & Restaurants, Healthcare, Industrials, Infrastructure, Power & Renewables, Media, Technology, and Telecommunications.

We offer unmatched industry knowledge in the sectors we cover, providing comprehensive strategic solutions tailored to generate long-term shareholder value. Our goal is to bring the partnership's collective wisdom and knowledge to reach the optimum value of a transaction and to create an enduring advisory relationship. Our advice is grounded in intellectual integrity and free from conflicts of interest.

Today Solomon Partners is an independently operated affiliate of Natixis, part of Groupe BPCE, a top 10 European and a top 20 global bank. Our clients enjoy proprietary access to an international advisory and financing platform with coverage throughout North and South America, EMEA and Asia.

For further information visit solomonpartners.com.

DISCLAIMER

The information contained in this document is based solely on publicly available information. Solomon Partners, L.P. and its affiliates, including, without limitation, Solomon Partners Securities, LLC (collectively, "Solomon") has relied, without independent investigation or verification, on the accuracy, completeness and fair presentation of all such information. None of Solomon, its affiliates or its or their respective employees, directors, officers, contractors, advisors, members, successors, representatives or agents makes any representation or warranty in respect of the accuracy, completeness or fair presentation of any information or any conclusion contained herein. The information contained in this presentation should not be assumed to have been updated at any time subsequent to date shown on the first page of the presentation and the delivery of the presentation does not constitute a representation by any person that such information will be updated at any time after the date of the presentation. Solomon, its affiliates and its and their respective employees, directors, officers, contractors, advisors, members, successors and agents shall have no liability with respect to any information or matter contained herein.

This presentation has been prepared solely for informational and illustrative purposes and is not to be used or considered as an offer to sell, or a solicitation of an offer to buy, any security or instrument or the provisions of an offer to provide investment services or to undertake any transaction.

Nothing in this presentation constitutes regulatory, investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to your individual circumstances. Each individual or entity receiving this document shall be responsible for obtaining all such advice as it thinks appropriate on such matters and shall be responsible for making its own independent investigation and appraisal of the risks, benefits and suitability of any transaction. Any discussions of past performance should not be taken as an indication of future results, and no representation, expressed or implied, is made regarding future events or results.

This presentation is a marketing presentation. It does not constitute independent investment research and has not been prepared in accordance with the legal requirements designed to promote the independence of investment research. Moreover, this presentation has not been prepared by the research department of Natixis, of which Solomon is an affiliate. Natixis may trade as principal or have proprietary positions in securities or other financial instruments that are referred to herein. This presentation is intended only to provide observations and views as expressed herein, which may be different from, or inconsistent with, the observations and views of Natixis analysts or other Natixis sales and/or trading personnel, or the proprietary positions of Natixis. In addition, Solomon and/or its affiliates, officers, directors and employees, including persons involved in the preparation or issuance of this presentation, may, from time to time, have long or short positions in, and may buy or sell the securities or other financial instruments referred to herein.