CLOUDERA | AMD

Growth and ESG, Not Growth or ESG

How the Manufacturing Industry Can Use Technology to Become Forward-Thinking

Table of Contents

Introduction

Modernization is a hot topic for enterprises looking to improve efficiency and seize a competitive foothold in the market. Yet, digital transformation is not the only goal on the list for becoming a future-thinking organization. The environmental, social, and governance (ESG) framework is gaining ground. And enterprises, specifically in the Manufacturing industry, should consider including ESG alongside modernization goals and initiatives.

Right now, the Manufacturing industry has its eye on growth, but it is also a time when modernization and sustainability goals coincide with that growth.

$44.5T

Global manufacturing production will reach a value of $44.5 trillion[1]

26%

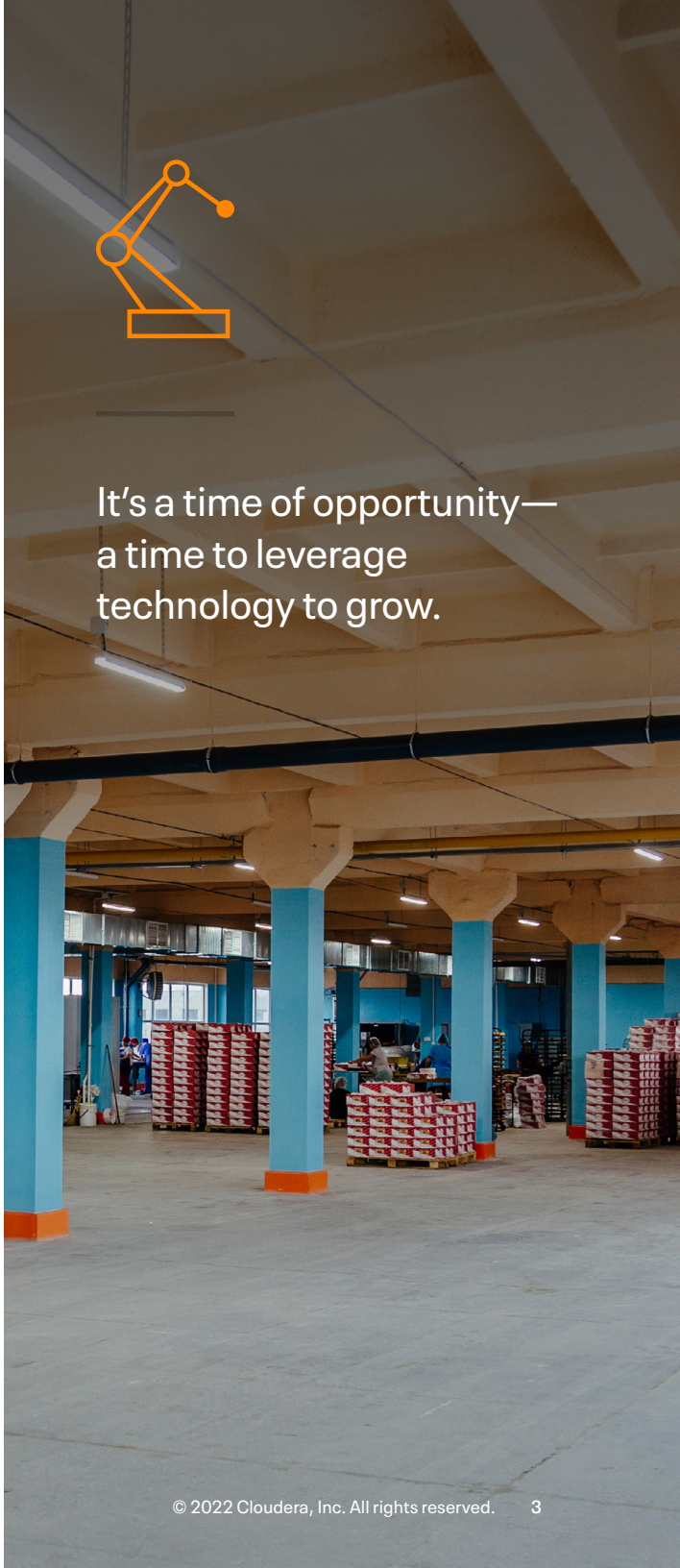
predicted increase in emissions by 2050 for the industrial sector (including manufacturing processes)[2]

76.6%

of U.S. emissions is driven by manufacturing production and its supply chain[3]

It's a time of opportunity—a time to leverage technology to grow.

Because to be a business of the future is to reach beyond products and services. By considering essential factors such as environmental impact, employees and community, and efficiency, you can work toward becoming a sustainable and competitive business for today and tomorrow.



The Manufacturing Industry Now

SUPPLY CHAIN INSTABILITY

As the global economy edged toward recovery in the second half of 2020, the demand on the manufacturing industry increased. While an increased demand is beneficial, it also exposed shortcomings and vulnerabilities. Today, many supply chains and labor markets remain under stress.[4] For supply chains, one source of instability often has a snowball effect on resources down the line. For example, driver shortages in trucking and congestion at container ports continue to be an issue.

While the circumstances surround supply chain issues, namely the COVID-19 pandemic, are unique, instability is familiar territory. Supply chains, in general, are considered an area for continuous improvement. And solutions do indeed exist: diversifying suppliers, leveraging data integration, and addressing workforce resources.

43%

is the amount of digitalization in the average supply chain[5]

91%

of IT decision makers agree that organizations that implement a hybrid architecture as part of its data strategy will gain a competitive advantage[6]

Industry Challenges with Data Indicate Room for Growth

- 98% of IT decision makers report a realm of challenges when it comes to their current enterprise data strategies[7]
- 31% of IT decision makers have completely achieved solutions optimized for speed and access across on-premises and cloud infrastructure[8]
- 56% of IT decision makers report their organizations are not coping extremely well with the volumes of data they're expected to manage[9]

RISE OF THE SMART FACTORY

The benefits of digital transformation for operational efficiency are largely industry agnostic, and the Manufacturing industry is beginning to invest.

34% of senior decision makers indicate that they have realized at least one new revenue stream or business model from data and analytics[10]

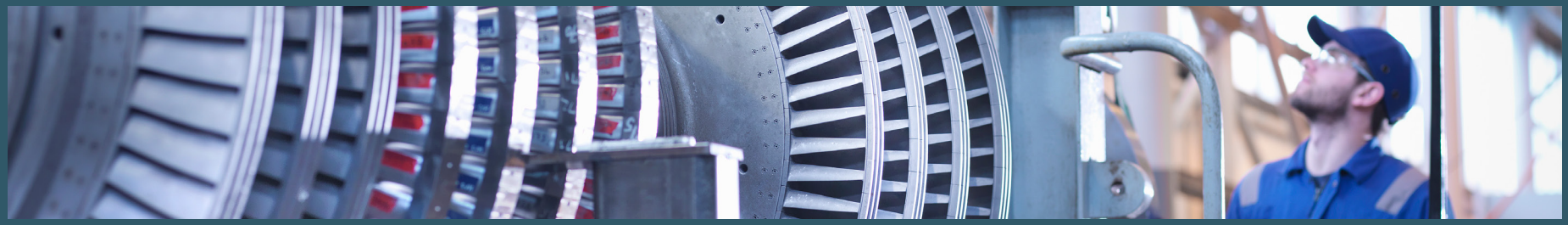
The benefits derived from data insights for proactive maintenance, operational efficiency, reduced costs, and improved security are proven. Factories that position themselves to take advantage of these benefits set themselves up for increased business value and improve their capacity to generate ESG reports.

ADVANCING ESG

According to the Environmental Protection Agency, the Manufacturing industry currently accounts for nearly a quarter of US greenhouse gas emissions.[11] Regulatory entities and compliance measures for ESG are expected to continue, if not increase, in 2023.

19% of manufacturing companies share carbon-emissions numbers from their suppliers (possibly due to tracking difficulty)[12]

With customers, regulators, and investors increasing observation and expectations for ESG measures, manufacturers need a way to produce transparent performance data.[13] Advancing ESG also means addressing the precautionary protocols and monitoring systems responsible for employee health and safety.



Industry Challenges

1

Environmental accountability: Consumer and company demands about ESG reporting
The simple truth is that consumers are more and more making buying decisions based on shared ESG values. Likewise, they are holding companies accountable for ESG violations. With over 200 global ESG regulations added a few years ago, it's clear that regulators are in line with consumer and company reporting demands.[14]

"Understanding the customer and product lifecycle visibility are core focus areas for manufacturing organizations, with customer and prospect data (64%), market data (59%), connected product data (58%), and supply-chain data (58%) being the most used data sources."[15]

2

The role and challenge of data
Manufacturing involves a lot of complex processes and equipment, so a common roadblock is getting the data out of the asset such as machine or other equipment to where it can be analyzed. To make matters more intense, the pace of technology today is extremely fast. Often, organizations in this industry cannot keep up and are left with little choice to manage data without the correct supporting infrastructure.

31%

of IT decision makers report having big data infrastructure that is centralized and tightly integrated across the organization across the organization[16]

3

Balancing growth with sustainability
Sustainability has moved beyond compliance to become a board-level issue and holds important social significance. Now there is increasing pressure to adopt green methods, without compromising demand or quality. Despite some manufacturers making moves to engage in a circular economy, many continue to struggle balancing regulatory scrutiny, desired growth outcomes, and tracking ESG performance.

20%

of U.S. greenhouse gas emissions is attributed to manufacturing[17]

Industry Opportunities

While the desire for growth is on the table, it's not possible without becoming more tech-enabled. Data and making it accessible is a huge part of the equation for growth and ESG.

Data and analytic tools such as artificial intelligence (AI) and machine learning (ML) provide enormous potential for helping manufacturing organizations reach growth and ESG goals. For example, centralizing operational technology (OT) data can yield better insights on machine health, ultimately indicating business health and environmental impact.

OT data for ESG reporting is challenging because of siloed data that spans across the globe. Yet, technology presents an opportunity for the Manufacturing industry to become more connected, efficient, and ESG-focused.

ESG opportunities for manufacturing:

Environmental

- Net-zero or carbon-neutral goals
- Environmental commitments product design, sourcing, production, distribution, and after-market
- Sustainable product innovation
- Responsible resourcing of raw materials

Social

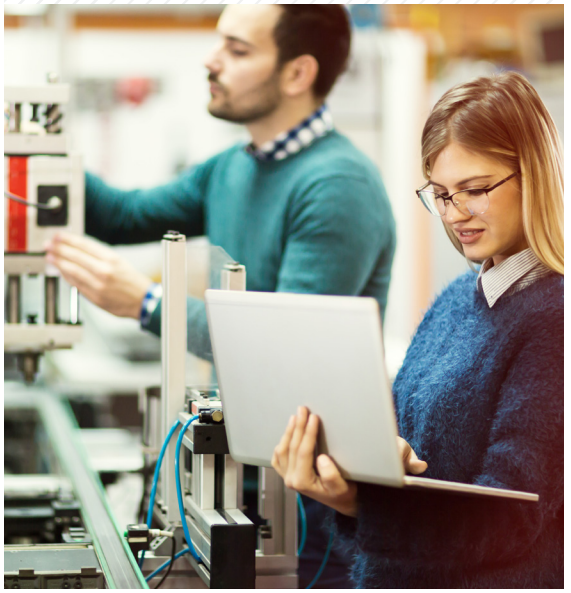
- Employee health, safety, and equity
- Reporting on DEI metrics
- Make ESG efforts more visible to help attract talent

Governance

- Increase traceability of data to establish and maintain ESG initiatives

The Tech-Enabled Roadmap to Success

- Put industrial data in the cloud
- Keep data confidential and secure
- Provide an audit trail
- Organize data for specific ESG requirements
- Strive for data granularity for decision making
- Combine accountability to sustainability without sacrificing profitability



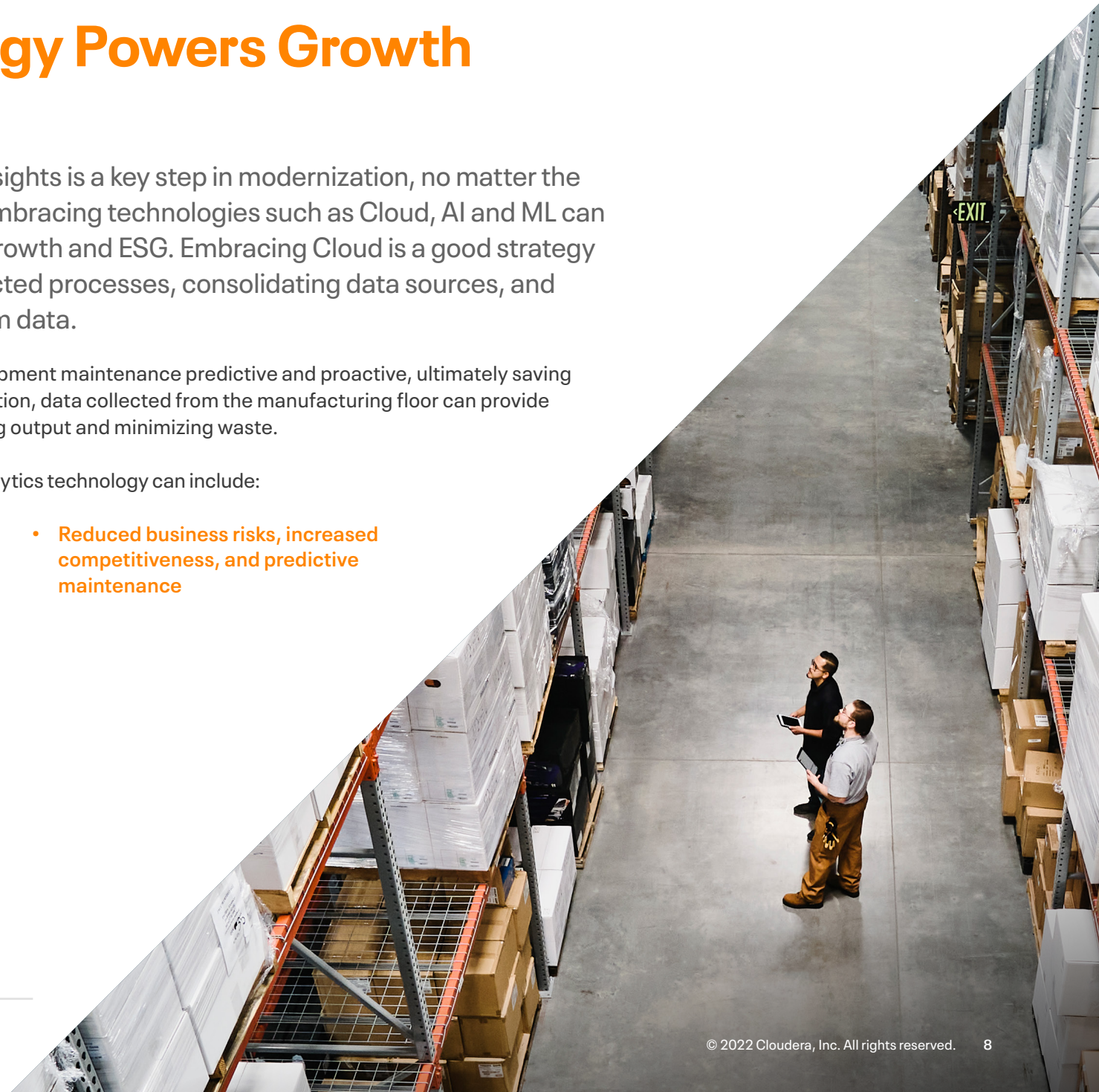
How Technology Powers Growth

Managing data and deriving insights is a key step in modernization, no matter the industry. For Manufacturing, embracing technologies such as Cloud, AI and ML can have an important impact on growth and ESG. Embracing Cloud is a good strategy for supporting complex connected processes, consolidating data sources, and gaining actionable insights from data.

Leveraging technology helps make equipment maintenance predictive and proactive, ultimately saving cost and resource expenditures. In addition, data collected from the manufacturing floor can provide product quality control while maximizing output and minimizing waste.

Additional benefits provided by data analytics technology can include:

- Enhanced customer experiences while aiding with service assurance
- Improved and more efficient product development, supply chains and production capabilities
- Reduced business risks, increased competitiveness, and predictive maintenance



Better Future, Greater Performance

The Cloudera and AMD relationship is poised to help the Manufacturing industry leverage technology to achieve greater overall performance. With exceptional platform execution, energy efficiency leading to a lower carbon footprint, running utilizing robust security features, the partnership provides an ideal turn-key platform to implement even the most stringent norms with ease and speed.

In order to tackle performance objectives, organizations need a way to connect disparate data sources for actionable, secure, and compliant analytics. At the same time, there is additional need to achieve complex goals while meeting current and future time-sensitive compliance requirements. And it's going to take cutting-edge technology to do it and more.

Cloudera Data Platform (CDP) addresses social and governance issues by delivering every data service you need in one secure platform, lowering TCO and saving IT teams from technical debt accrued from disconnected, redundant solutions. Bottom line, CDP can help organizations in the Manufacturing industry achieve better transparency, reporting, and real-time insights.

When it comes to balancing performance and environmental efficiency, the AMD platform is proven. According to the November 2022 Green500 lists, AMD products are in seven of the top ten, and 15 of the top 20 most efficient in terms of speed and energy usage. In addition, AMD EPYC™ processors and AMD Instinct™ accelerators are on the Green500 list, and now power 6 of the top 10 most efficient supercomputers in the world. What it really comes down to is performance per wattage, and AMD brings that powerful efficiency to the Manufacturing industry.

Organizations that embrace data-led transformation will develop the agility, advantage, and means to create a better future.

The combined power of Cloudera and AMD means improved:

Performance

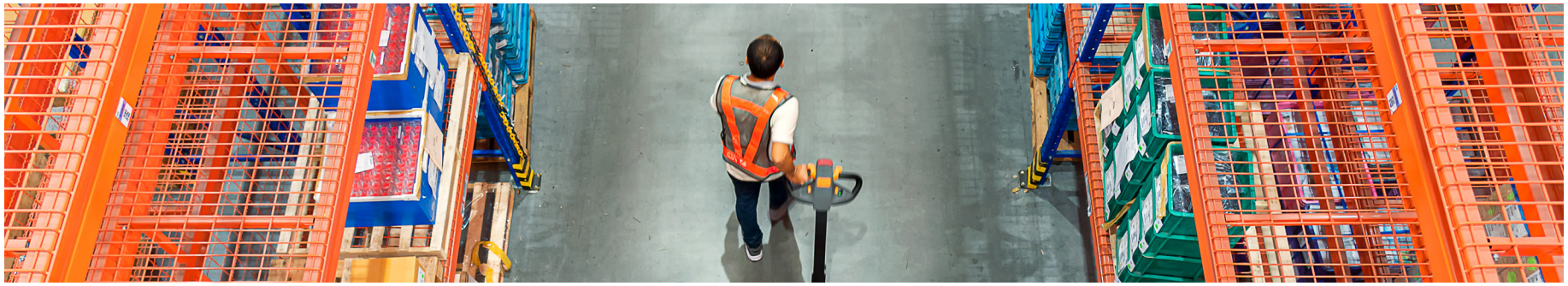
- Cloudera's data and AI platform paired with hybrid data cloud allow data practitioners to optimize their cloud journey by moving vast amounts of data, no matter where it resides for experimentation and insights.
- AMD EPYC has the best server CPU performance in the market.[18]
- Power for manufacturing workloads including simulation support, predictive maintenance, process optimization, waste reduction, and other critical operations.

Security Features

- Cloudera Shared Data Experience (SDX) brings an always on security and governance layer built into CDP so that data access and usage across deployments are continuously maintained, without compromise.
- AMD Infinity Guard* delivers a leading-edge set of modern security features that help decrease potential attack surfaces as software is booted, executed, and processes your critical data.

Data Management and Insights

- AI / ML on CDP help manage data and provide the opportunity to act as early as possible, improving data governance, processing, and engineering.
- AI and ML create operational efficiency and ease decision-making burdens.



*AMD Infinity Guard features vary by EPYC™ Processor generations. Infinity Guard security features must be enabled by server OEMs and/or Cloud Service Providers to operate. Check with your OEM or provider to confirm support of these features. Learn more about Infinity Guard here.

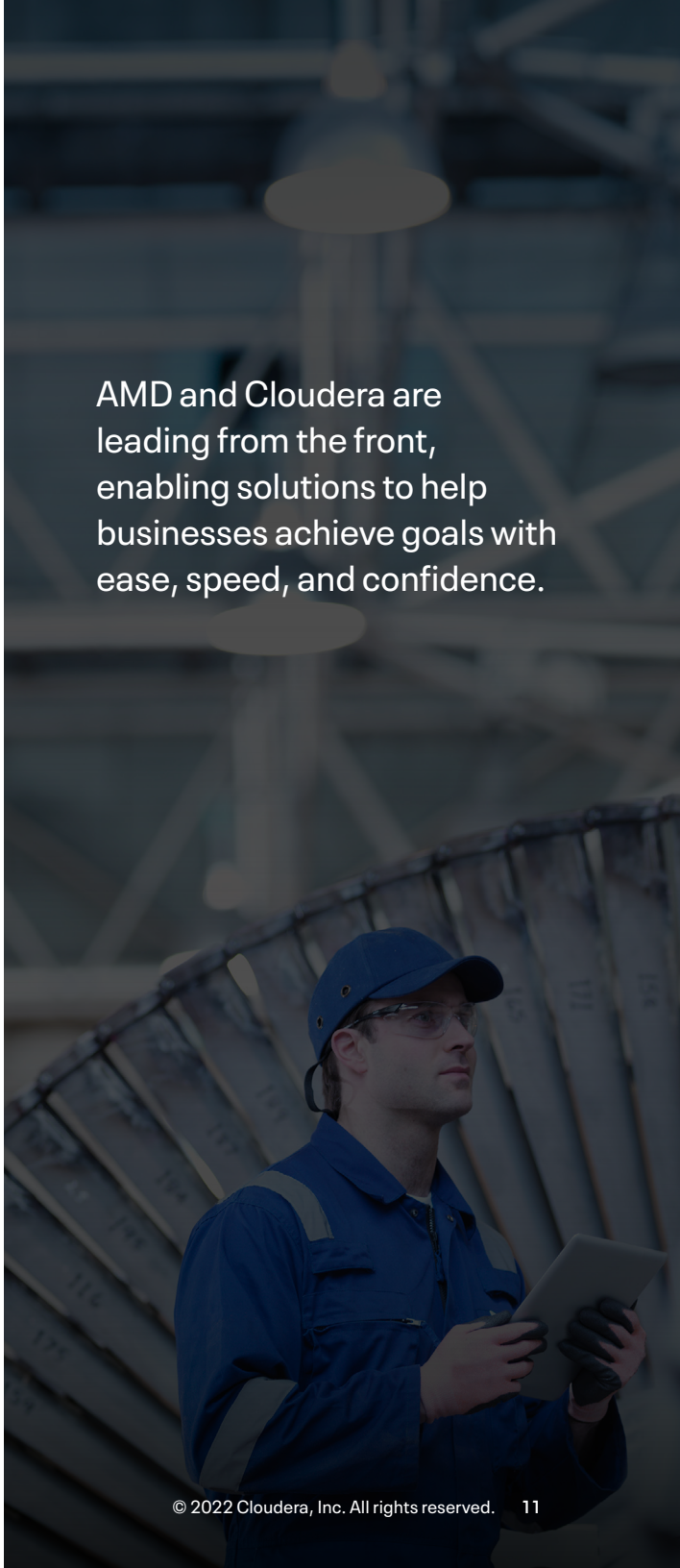
360° View of Growth

Growth is essentially a measurement of improved metrics. In business, those metrics are most often sales and profits. But these days, sales and profits are increasingly influenced by technological capability. Previously designated lines between different aspects of business are becoming blurry and it's no longer sufficient to only measure profit when it comes to growth. For businesses to achieve and sustain improved metrics, it's going to take a 360° view of growth.

Expanding growth to include the influence of initiatives like ESG will position organizations to realize more value—value from products and services and the value of having a positive impact on their community and environment.

To get there, it requires unprecedented technology and resource innovations to help navigate the complexities. AMD and Cloudera are leading from the front, enabling solutions that will help businesses achieve the goals with ease, speed, and confidence.

Unlock the benefits of Cloudera and AMD for your organization.



Learn More

Learn more about how Cloudera and AMD can help your Manufacturing organization here.
You can learn more about AMD EPYC Server Processors here, and the AMD Data Analytics Hub here.

About Cloudera

At Cloudera, we believe that data can make what is impossible today, possible tomorrow. We empower people to transform complex data into clear and actionable insights. Cloudera delivers an enterprise data cloud for any data, anywhere, from the Edge to AI. Powered by the relentless innovation of the open source community, Cloudera advances digital transformation for the world's largest enterprises.

Learn more at cloudera.com | US: +1 888 789 1488 | Outside the US: +1 650 362 0488

Sources

[1,4] Power and Motion Tech. Global Manufacturing Production to Reach Value of $44.5 Trillion in 2022. https://www.powermotiontech.com/news/article/21242721/global-manufacturing-production-to-reach-value-of-445-trillion-in-2022

[2,3] NIST. Sustainable Manufacturing Is Smart Manufacturing. https://www.nist.gov/blogs/sustainable-manufacturing-smart-manufacturing

[5,12,13,14,17] ServiceNow. How Manufacturers can Meet the ESG Challenge. https://www.servicenow.com/workflow/it-transformation/how-to-accelerate-esg-compliance-efforts-in-manufacturing/

[6,7,8,9,10,15,16] Cloudera. Being Data Driven in the Manufacturing Industry - A Global View. https://www.cloudera.com/content/dam/www/marketing/resources/solution-briefs/being-data-driven-in-the-manufacturing-industry-a-global-view.pdf.landing.html

[11] Environmental Protection Agency. Sources of Greenhouse Gas Emissions. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

[19] SP5-013A: 96-core EPYC 9654 CPU processors results as of 11/10/2022 using SPECrate®2017_int_base. The AMD EPYC scored 1790 SPECrate®2017_int_base which is higher than all other 2P scores published on the SPEC® website. 2P AMD EPYC 9654 (1790 SPECrate®2017_int_base, 192 total cores, www.spec.org/cpu2017/results/res2022q4/cpu2017-20221024-32607.html. SPEC®, SPECrate® and SPEC CPU® are registered trademarks of the Standard Performance Evaluation Corporation. See www.spec.org for more information. EPYC-028B

CLOUDERA