

# State of PLM: Today's Market & Leading Trends

2024 Market & Industry Forum—11 April 2024

**CIMdata**

**State of PLM: Today's Market & Leading Trends**  
**PLM Market & Industry Forum**  
A CIMdata Leadership Event

**11 April 2024—Frankfurt, GERMANY**

*Peter Bilello, President & CEO, p.bilello@CIMdata.com*  
**+1.734.668.9922**

**#PLM4um**

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**CIMdata** Defining What Comes Next in Digital Transformation

*Strategic management consulting for competitive advantage in global markets*

**The leading independent authority on PLM and its digital transformation. We provide research, education, and strategic consulting to clients around the world.**

**OUR MISSION:**  
**Maximizing clients' ability to design, acquire, deliver, and support innovative products and services.**

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## Key Takeaways



State of PLM: Today's Market & Leading Trends

- CIMdata continues to expand & adjust to major PLM market trends
- CIMdata's global A&D PLM Action Group has entered its 10<sup>th</sup> year in partnership with market leaders—major research continues
- Multiple disconnects still exist, e.g., prioritization of digital initiatives, and management's narrow understanding of lifecycle management
- The global PLM Economy is growing and continues to add value
- To be successful, companies need to transform people, processes, and technologies—there are at least 12 evolving critical elements
- The next industrial revolution is already upon us

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## Agenda

- What's New from CIMdata
- 2023: The Year in Review
- 2024: Today's Trends & Challenges
- Looking Towards the Future
- Digital Twins: Enhancing Lifecycle Performance
- Concluding Remarks

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**Global Knowledge & Relationships**

 *Diverse, deep experience across industry verticals...delivered on six continents!*

Clients & offices in the Americas, EMEA, and Asia-Pacific



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**CIMdata's Contribution**

 *We facilitate and energize the global digital ecosystem*

CIMdata sits at the critical intersection of the digital ecosystem, helping define & implement what's next



**Solution Providers**  
Executive Mgmt.  
Program Mgmt.  
Sales/Mktg.

**CIMdata Experts**

**Industrial Clients**  
Executive Mgmt.  
Program Mgmt.  
Users

We address challenges & identify opportunities for both solution providers and industrial organizations

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**CIMdata's Services**

Strategic advice & counsel through a comprehensive & integrated set of services

- RESEARCH**  
Foresight
  - Research & analysis
  - Technology evaluations
  - Market-specific insights
  - Industry news & trends
- EDUCATION**  
Leadership
  - Industry conferences
  - Seminars & webinars
  - Certificate programs
  - Best practices
- CONSULTING**  
Success • Invest • Transformation
  - Strategic guidance
  - Aligning solutions with needs
  - Program management advisement
  - Market positioning

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**Success Methodology**

Services for software & service providers to support their drive toward market success

Driving growth & competitive advantage in a complex, dynamic market

- Channel Services
- Strategic Support
- Product & Program Management
- Product & Program Development
- Sales & Marketing

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## Select Success Clients

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## Invest Methodology

Optimizing investments in the evolving global digital ecosystem

Informed analysis of global PLM markets for industry analysts, private equity firms, and other financial service organizations

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## Select Invest Clients

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## Transformation Methodology

Services for industrial organizations to enable digitalization of their product lifecycles

Supporting growth & evolution of enterprises across a wide range of industries in their pursuit of digitalization

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## Select Transformation Clients

Aero & Defense	Auto/Transportation	Fab & Assembly	High-Tech

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## Select Transformation Clients

CPG/F&B/Process	Medical/Pharma	Emerging Industries	Academic & Research

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### CIMdata's Team

 Working closely with clients from industry & technology gives us a unique perspective


- Extensive team of senior consulting professionals
- Experienced in multiple industries
- Extensive relationships with industrial clients and solution providers



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### Chief Revenue Office Role Added

 Alan Mendel rejoins CIMdata after a lengthy leave of absent

Thursday, August 17, 2023

#### PLM Industry Veteran, Alan Mendel, Joins CIMdata as Chief Revenue Officer



Ann Arbor, Michigan, USA 17 August 2023—CIMdata, Inc., the leading global Product Lifecycle Management (PLM) strategic management consulting and research firm, announces the appointment of Alan Mendel as its Chief Revenue Officer reporting to President & CEO, Peter Bilello.

Over his 36-year career, Alan has served in various management roles at Aras Corporation, LeverX, CIMdata, Schlumberger CAD/CAM, Groupe Bull, and Adra Systems. He's developed and implemented world-class PLM/CAD/CAM software, consulted and assisted international organizations to establish PLM and digital transformation initiatives, select solutions and service providers, and has driven business benefits generating global PLM deployments.

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### CIMdata's New Director of Research

**Christine joins CIMdata and takes over main MAR responsibilities**

Friday, March 01, 2024

#### CIMdata Announces the Promotion of Christine Longwell to Director of Research

ANN ARBOR, Michigan, USA 1 March 2024—CIMdata, Inc., the leading global research, consulting, and education firm specializing in Product Lifecycle Management (PLM) and the Digital Transformation it enables, is pleased to announce the promotion of [Christine Longwell](#) to Director of Research.

In this role, Christine will assume primary responsibility for CIMdata's core market analysis activities, including data gathering, analysis, and reporting. With her experience as a design and manufacturing engineer and proven track record in research and analysis, she is well-positioned to lead CIMdata's research efforts and drive continued excellence in delivering valuable insights to our clients.

CIMdata's Vice President, Stan Przybylinski, will transition to lead CIMdata's overall research agenda. Additionally, he will provide essential support for CIMdata's broader market research initiatives and consulting projects. Stan will continue in his role as the Vice President of CIMdata.

**Stan Przybylinski, CIMdata's Vice President, has transitioned to lead CIMdata's overall research agenda. Additionally, he will provide essential support for CIMdata's broader market research initiatives and consulting projects.**

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### CIMdata Foresight

**Delivering actionable research to the global digital economy**

- Market Research
  - Global and regional market analysis reports
  - PLM benefits appraisal guide, pricing analysis, etc.
- CIMdata Communities
  - Industrial organizations and solution providers
- CAM Market Service
- Publications
  - Late-breaking news, commentaries, etc.
- Custom Research Projects



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### Consulting Practice Areas


Guidance & insight focused on multiple facets of digital transformation

- Additive Manufacturing
- AEC & Manufacturing Convergence
- Aerospace & Defense
- Data Governance
- Digital Skills Transformation
- Collaborative Innovation & Social Product Development
- Manufacturing Systems Engineering
- Organizational Change Management
- Simulation-Driven Systems Development
- Sustainability & Green Energy



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### AD PAG 2024 Research Agenda




The Aerospace & Defense PLM Action Group was founded in February 2014

#### Mission

An association of aerospace & defense companies within CIMdata's globally recognized PLM Community Program, which functions as a **PLM advocacy group** to:

- Set the direction for the aerospace & defense industry on PLM-related topics that matter to members
- Promote common industry PLM processes and practices
- Define requirements for common interest PLM-related capabilities
- Communicate with a unified voice to PLM solution providers
- Sponsor collaborative PLM research on member-prioritized industry and technology topics

#### Members




















20 Website: [www.ad-pag.com](http://www.ad-pag.com)

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### MBSE Industry Research



CIMdata has initiated research on behalf of the AD PAG members and other sponsors



Task	Apr	May	Jun	Jul	Aug	Sep	Oct
Activity 1: Briefing Sessions	[Bar spanning Apr to Oct]						
Activity 2: Thought Leadership Interviews	[Bar spanning Apr to Jul]						
Activity 3: Research Topic Webinar		[Bar spanning May to Jun]					
Activity 4: Research Topic Web Survey		[Bar spanning May to Jul]					
Activity 5: Survey Analysis and Reporting					[Bar spanning Aug to Sep]		
Activity 6: Sponsor/AD PAG Alignment Discussions							[Bar in Oct]
Activity 7: Research Topic eBook				[Bar spanning Jul to Oct]			
Activity 8: Joint Sponsor/CIMdata Webinar						[Bar spanning Sep to Oct]	

*Please contact James Roche at [j.roche@cimdata.com](mailto:j.roche@cimdata.com)*


#### Information Request

- CIMdata intends to feature 12+ leading solution providers in our analysis and report
- We will request a briefing on provider's MBSE solution strategy and an interview with their domain experts
- Support of this information request will influence our line of inquiry and result in a more comprehensive representation of the provider's strategy and solution in our report

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### Digital Twin-Thread Benchmark Study



Validating the value proposition of the Digital Twin-Thread to the A&D industry

Late April

Initiate

- Select Use Cases
- Define Criteria
- ID Solutions of Interest

2023 Q3 – 2024 Q1

Request/  
Review

- Recruit Industry Partners
- Request Provider Participation**
- Conduct Solution Demonstrations

2024 Q1 – Q3

Findings/  
Summary

- Summarize Findings
- Communicate Findings

2024 Q4


#### Benefits of Participation

- Demonstrate commitment to collaborate with industrial PLM advocacy group
- Enjoy publicity and enhance stature as an industry leader
- Share perspectives and learnings with a broad community of industry thought leaders


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## PLM Green Global Alliance

 *PLM professionals advocating for a low-carbon circular economy*

- CIMdata is a member of this community of PLM professionals collaborating, educating & advocating a low-carbon circular economy
- The PGGA supports five themes related to PLM: Sustainability, Circular Economy, Climate Change, Green Energy & Lifecycle Assessments
- Mark Reisig, CIMdata, co-moderates the PLM & Sustainability theme with Jos Voskuil, the Virtual Dutchman, which includes webinars with solution providers, blogs & news
- Additionally, Mark Reisig, CIMdata moderates the PLM & Green Energy theme with blogs and news

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## CIMdata Leadership

 *Industry leading conferences, seminars, and educational programs (1 of 3)*

- Speakers at international conferences
  - CM Trends 2024 – August 2024, Las Vegas, NV USA
  - PDT EMEA 2024 – October 2024, Gothenburg, Sweden
- PLM Market & Industry Forums for PLM solution providers
  - North America 2024 – March 27
  - EMEA 2024 – April 11
  - India 2024 – April 15
  - China 2024 – April 19
  - Japan 2024 – April 23



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### CIMdata Leadership

 Industry leading conferences, seminars, and educational programs (2 of 3)

- CIMdata Community Events
  - A&D PLM Action Group Workshops
  - Industry PLM Action Group Workshops
  - Others to be announced
- PLM Road Map™ Series
  - PLM Road Map™ NA 2024—8-9 May, Washington D.C. area USA
  - PLM Road Map™ EMEA 2024—23-24 October, Gothenburg, SWEDEN

***PLM Road Map, in its 31<sup>st</sup> year, continues to be a premier international PLM industry event in the rapidly transforming digital world***

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### CIMdata Leadership

 Industry leading conferences, seminars, and educational programs (3 of 3)

- PLM Certificate Programs
  - Schedule: <https://www.cimdata.com/en/events/cimdata-plm-certificate-program>
- Self-paced E-Learning courses
  - <https://www.cimdata.com/en/education/plm-basics-e-learning-course>
- Digital Transformation Short Course
  - Schedule: <https://www.cimdata.com/en/education/digital-transformation-short-course>
- Systems Modeling and Simulation Certificate Program
  - <https://www.cimdata.com/en/education/sms-certificate-program>
- Monthly Complimentary Educational Webinars
  - Schedule: <http://www.cimdata.com/en/education/educational-webinars>

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### Over 1,200 PLM Professionals Certified




**Now offering more than 30 half-day Master Classes!**

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### CIMdata Foresight Poll



What do you expect your clients' PLM budget trend to be for the next two years?

What do you expect your clients' PLM budget trend to be for the next two years?

Will increase	0%
Will decrease	0%
Will stay approximately the same	0%

Start the presentation to see live content. For screen share software, share the entire screen. Get help at [polliv.com/app](http://polliv.com/app)

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- Concluding Remarks

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## Defining PLM

 Digital transformation of the lifecycle, enabled by the product innovation platform

PLM is...

- A strategic business approach powered by a consistent set of solutions
- Enabled by product innovation platforms that support the extended enterprise
- An approach that spans the full lifecycle, from idea through life
- Enables a set of evolving functional domains orchestrated by an extended enterprise-level "systems of systems" approach




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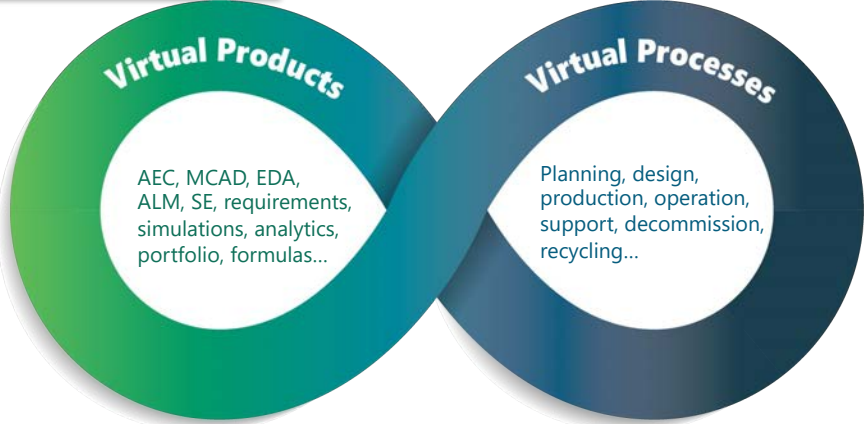
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## PLM's Critical Role

 Spans the full lifecycle: from concept through launch and beyond


PLM is the collaborative creation, use, management, and dissemination of product-related **intellectual assets**



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## CIMdata's PLM Status & Trends Survey

 Some key conclusions—7<sup>th</sup> year of CIMdata's PLM Status & Trends global survey

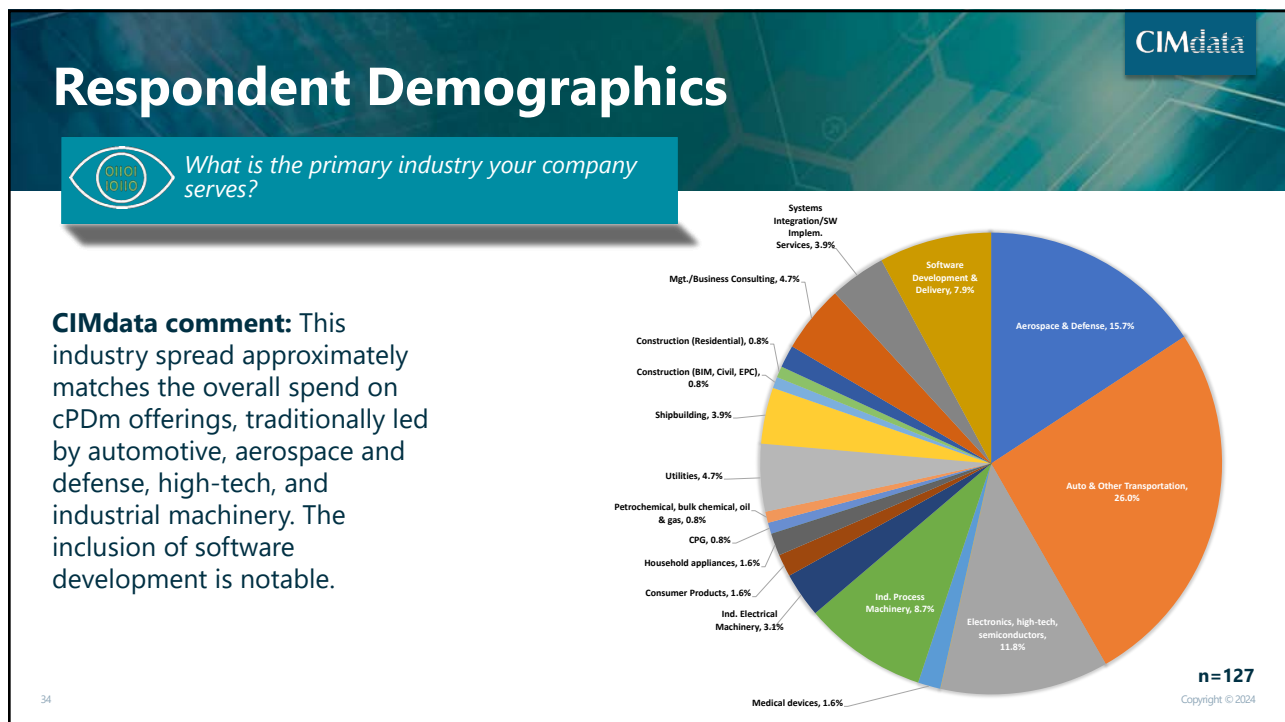
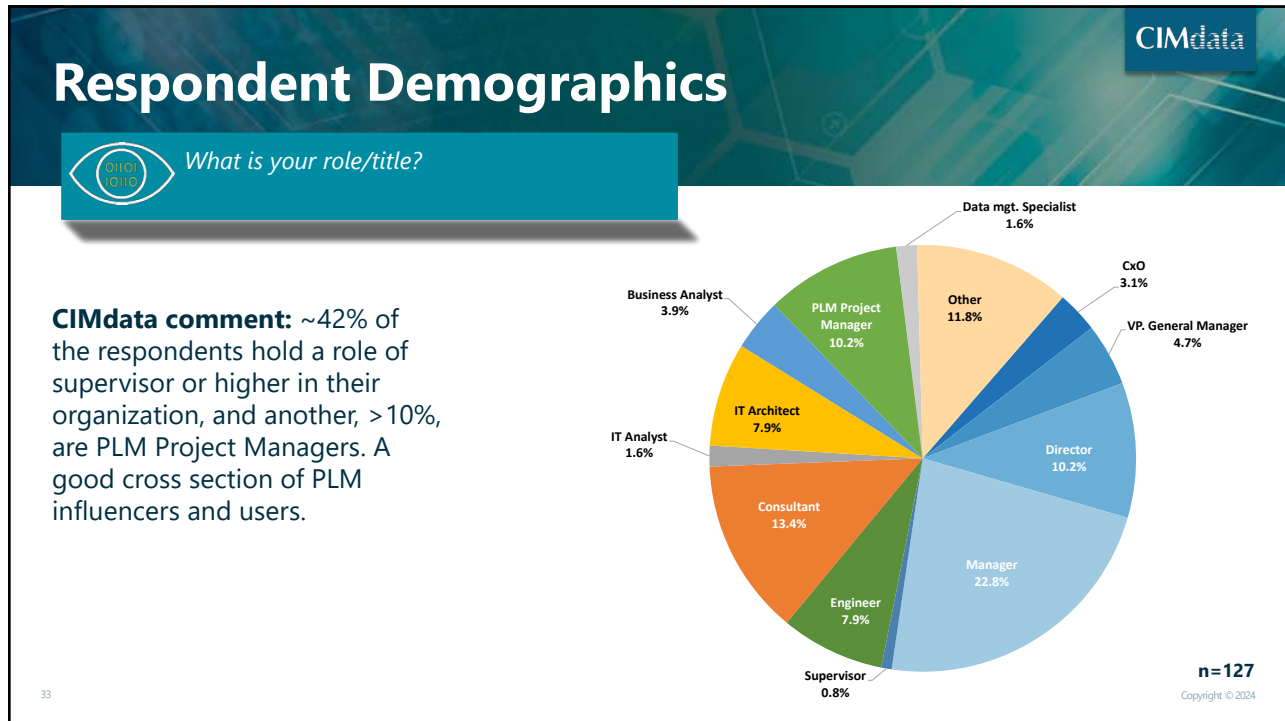
- This year's respondents represent a wide & diverse community
- Most implementations still focus on "traditional" PDM aspects of PLM
- For the most part, companies continue to find PLM worth investing in
- Configurability has become a bigger issue for many
- There continues to be an emphasis on getting faster, better, cheaper
- Enterprise digital priorities & systems confusion still exists
- Management disconnect appears to be widespread
- PLM appears to have continued its positive momentum

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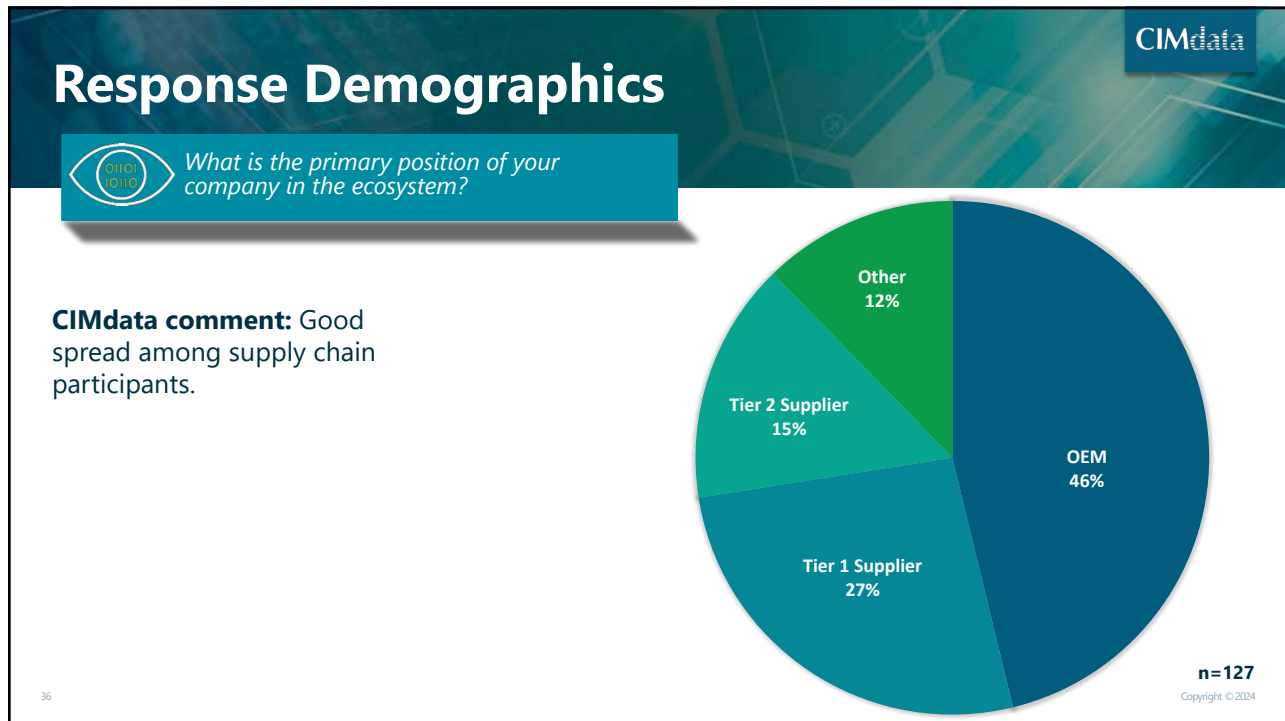
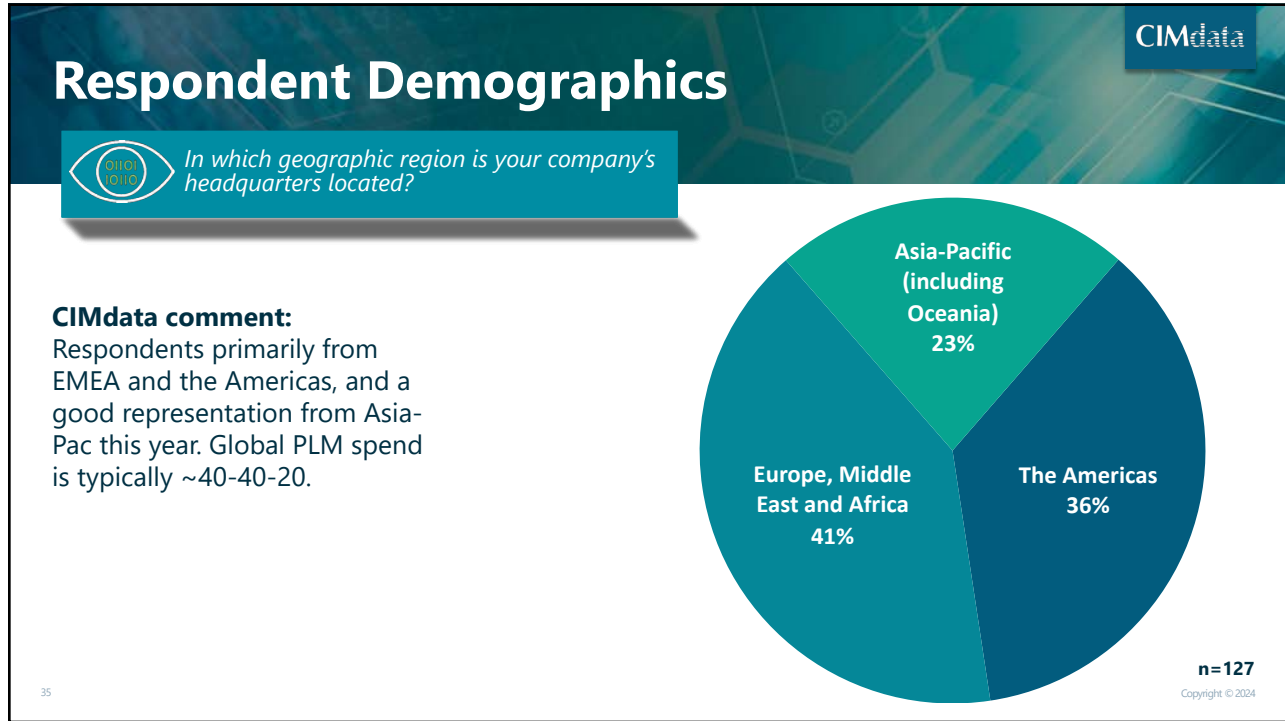
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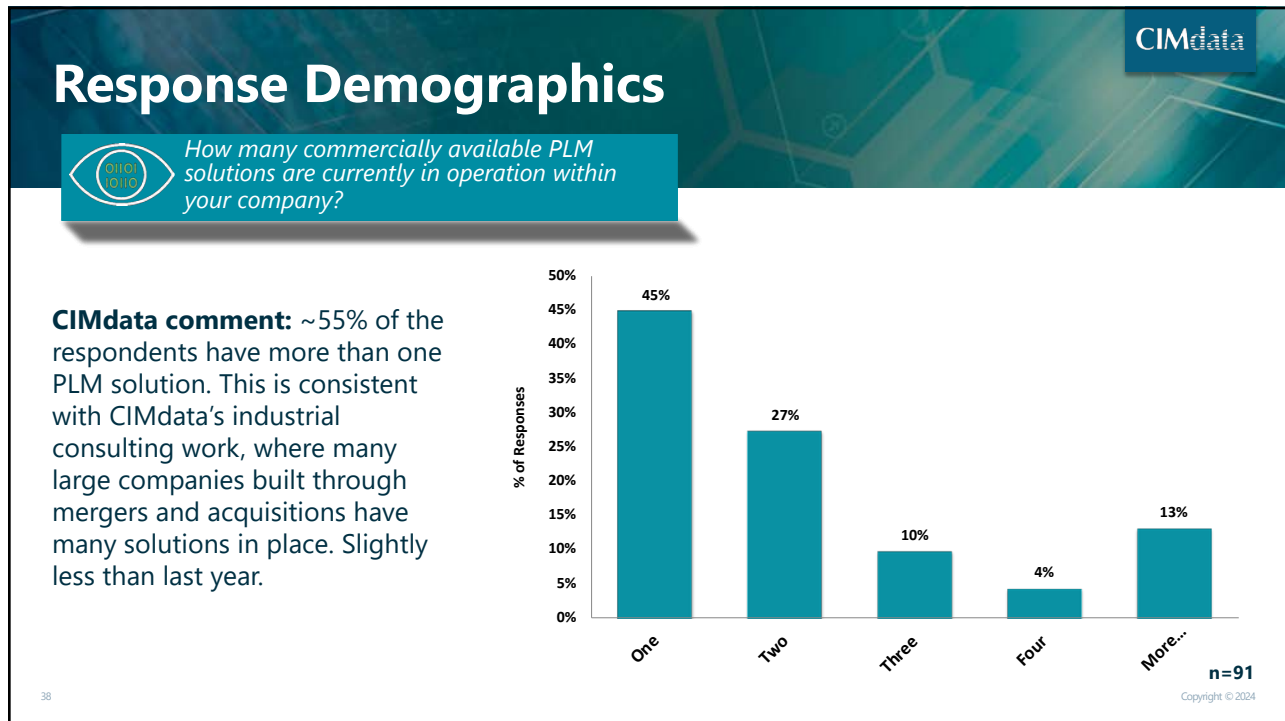
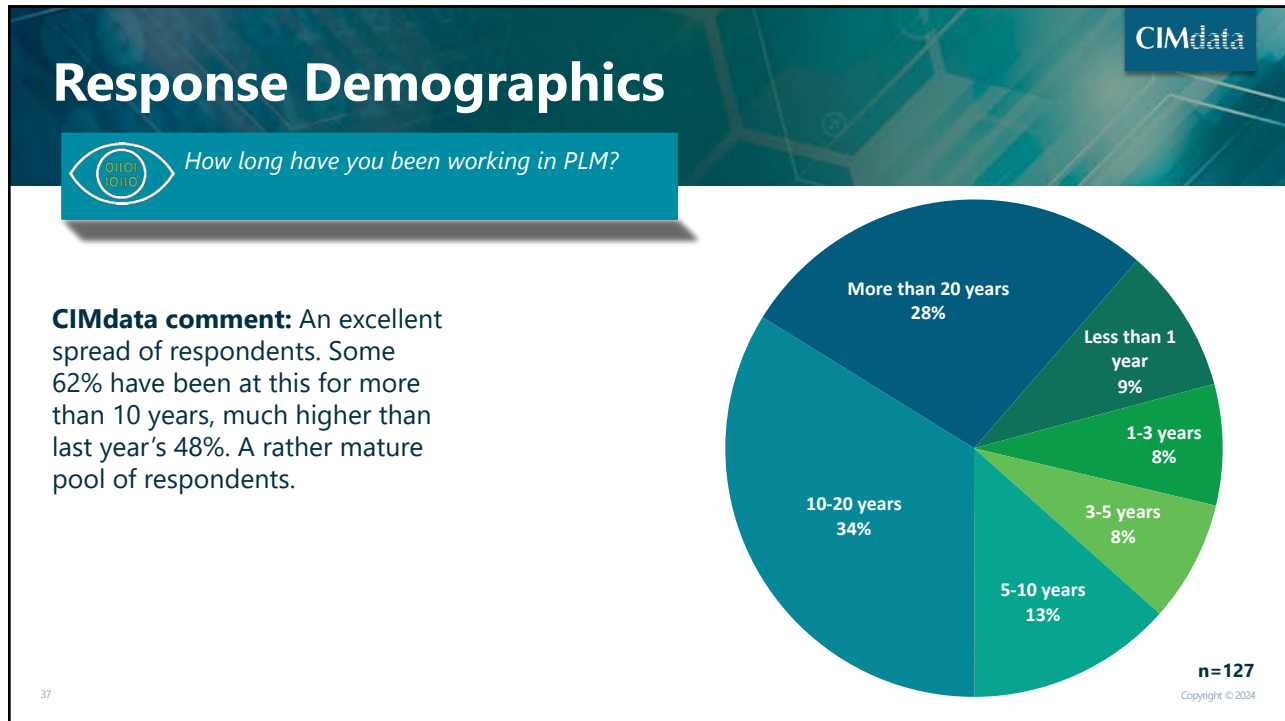
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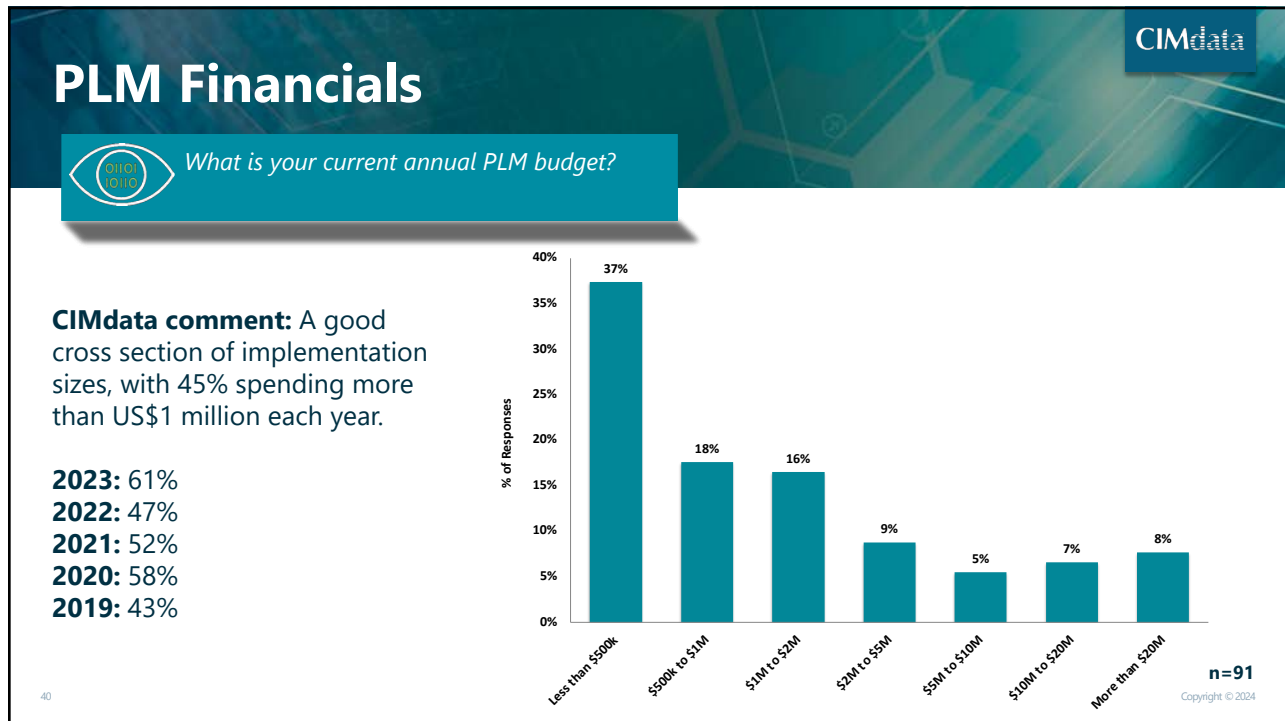
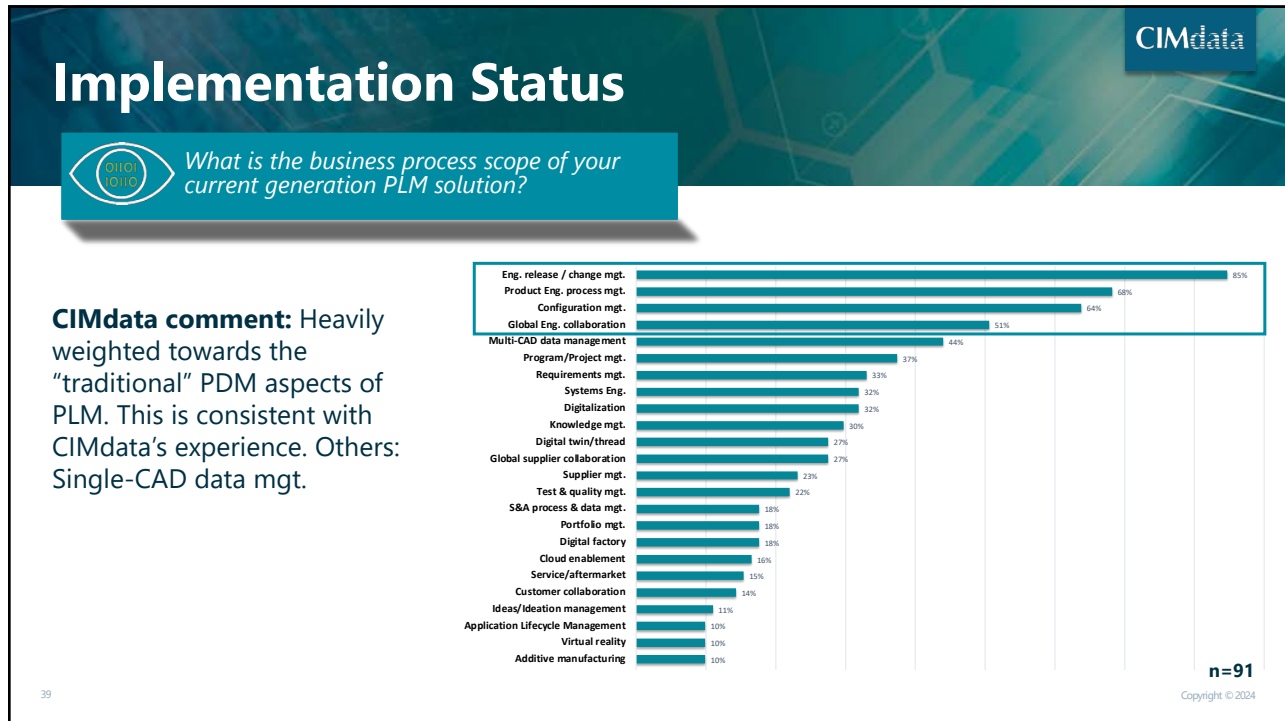
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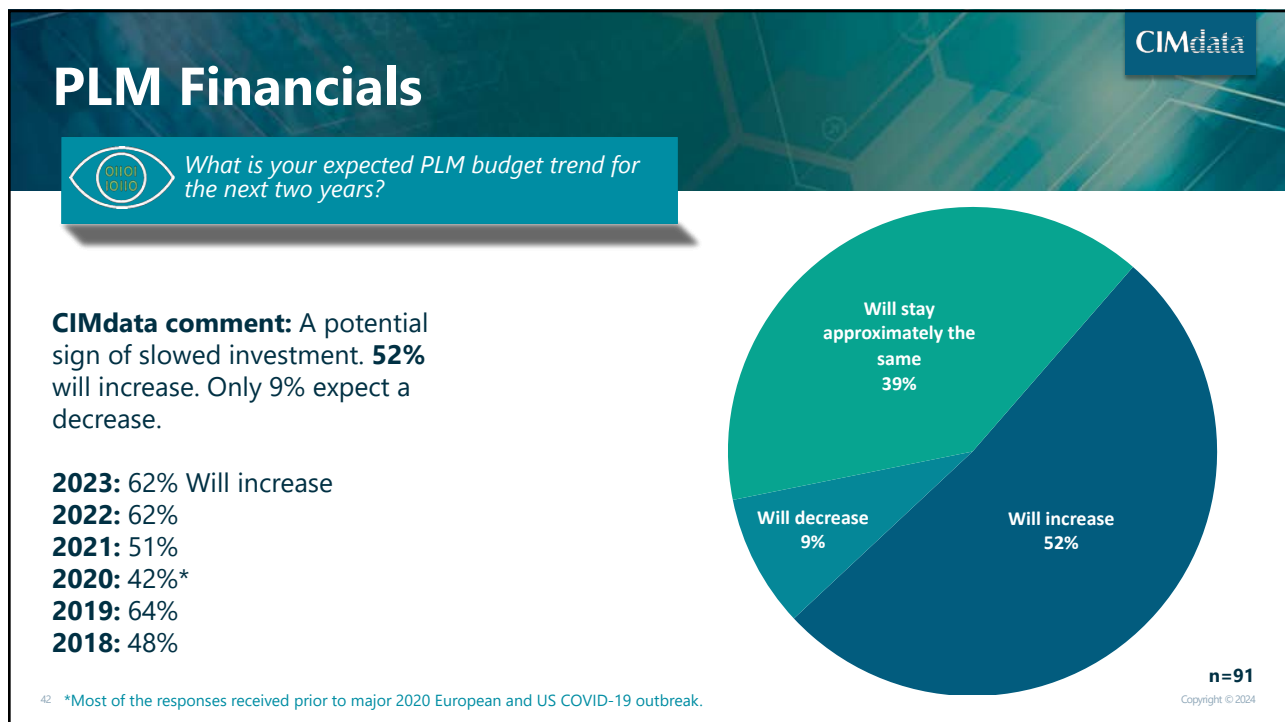
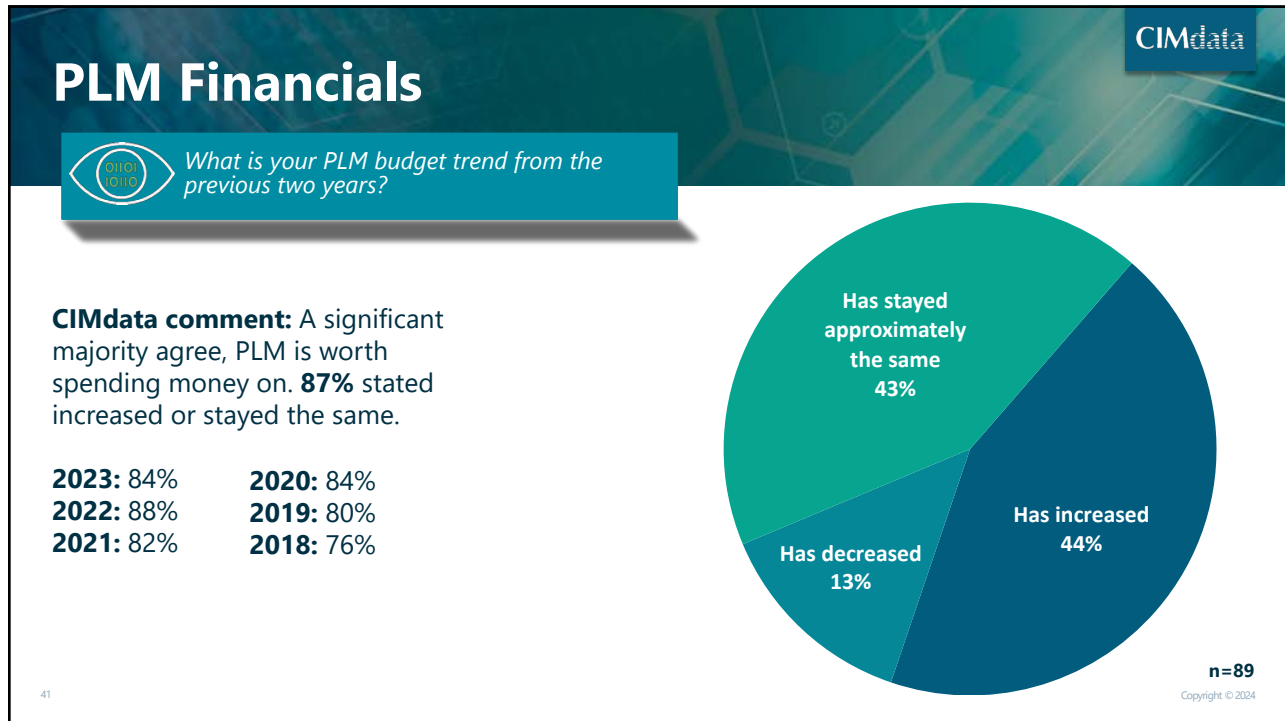
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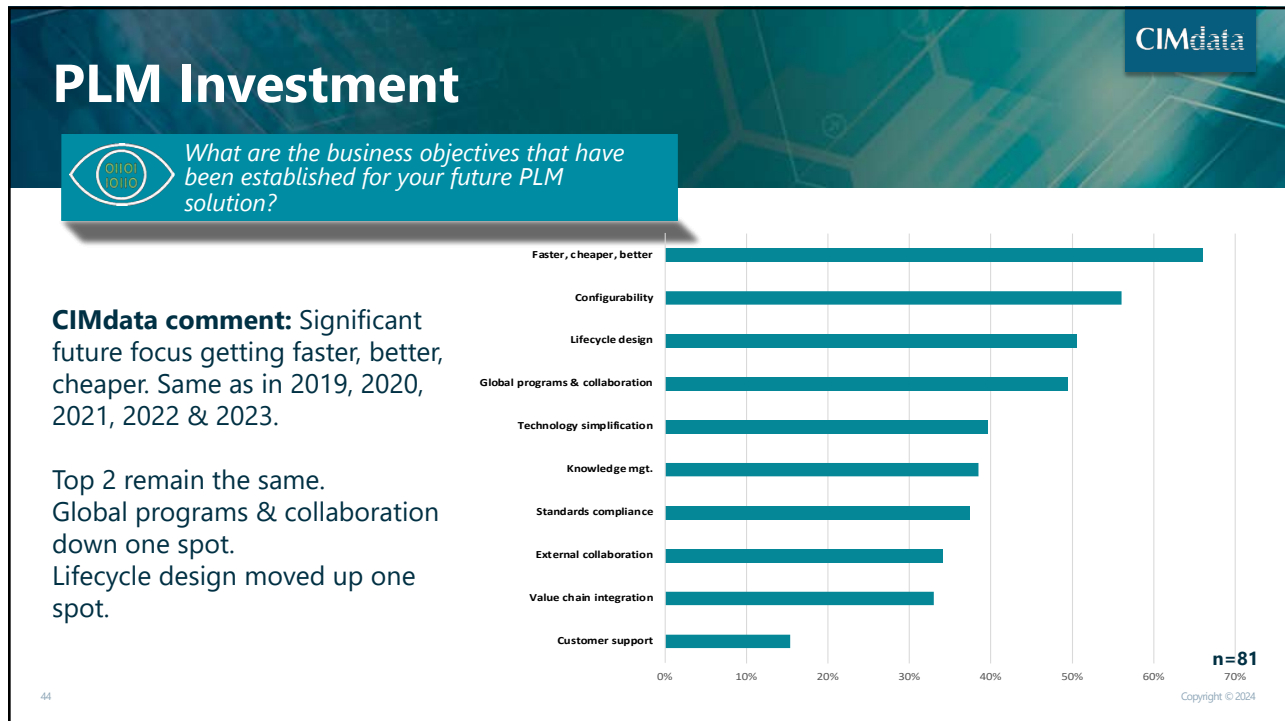
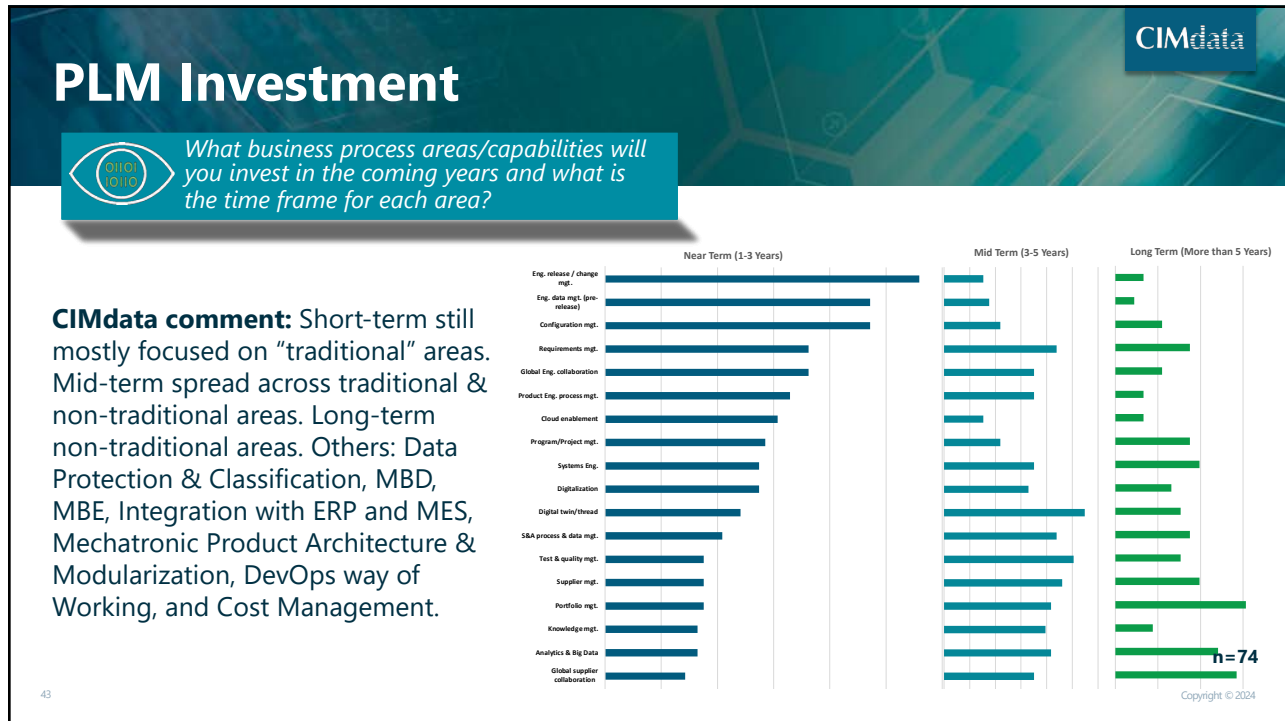
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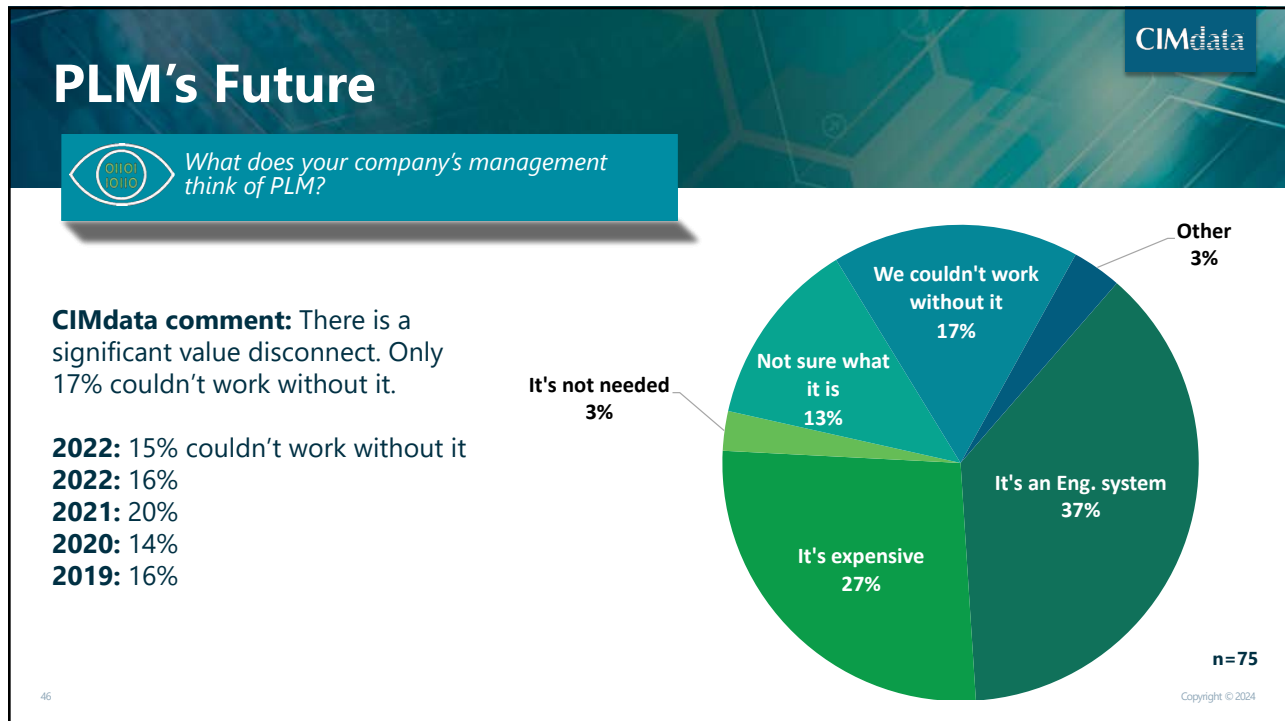
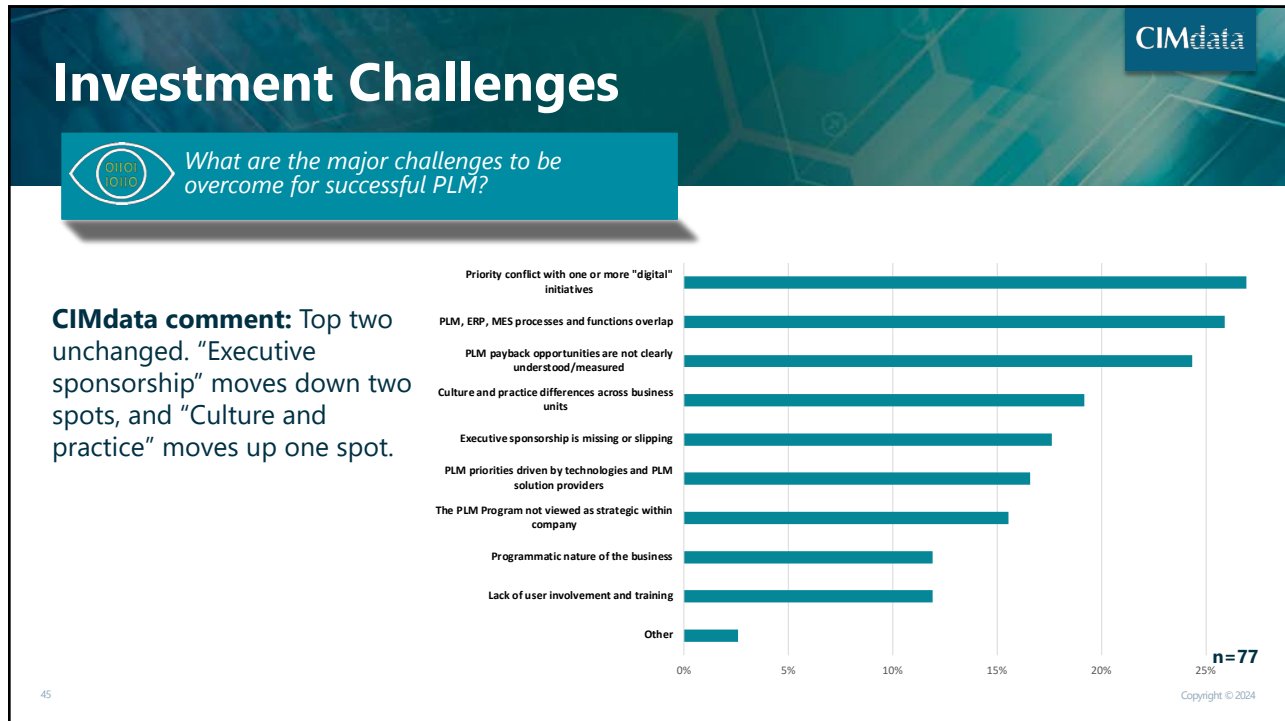
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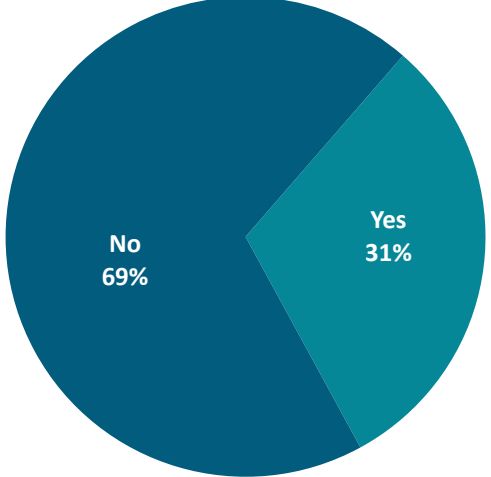
### PLM's Future


Has the term PLM run its course?

**CIMdata comment:** A significant majority still believe that the term PLM has value.

**2023:** 31% Yes  
**2022:** 38%  
**2021:** 31%  
**2020:** 44%  
**2019:** 52%

*Please join our webinar on May 16, 2024 for a full review of our 2024 PLM Status & Trends survey.*




**No**  
69%


**Yes**  
31%

n=75

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### What CIMdata Has Been Saying



Some examples—have you seen what we have been publishing since the last year?

#### PLM Stays Relevant in Manufacturing Trends

**Experts weigh in on how PLM**


By Randall Newton  
October 12, 2023

In 1985, American Motors Corporation became the first carmaker in America to make an integrated design and engineering information system called relational database management. The automated recordkeeping included using another new technology called PLM. It was noted in the production cycle for a new product in automobile manufacturing.




**Mark Reisig** · 1st  
Executive Consultant and Sustainability  
7m · 🗨️

Here's an interesting and informative interview with Jos Lavelle from aPriori Technologies that Jos and I did on the #sustainability theme with the PLM Group. Jos is interested in gaining sustainability insights and reducing his carbon footprint in design and manufacturing, you can find the full interview here: [https://www.plmgreenalliance.com/insights/2023/10/12/mark-reisig-and-jos-voskuil-interview-on-plm-related-software-trends-and-sustainability-insights](#)





**PLM Green Global Alliance**  
Jos Voskuil · 1st  
20h · 🗨️

Mark Reisig and Jos Voskuil continued their dialogue with aPriori - enjoy reading and watching the video.



#### Digital Thread In A&D: Current State And Future Trends

James Roche August 30, 2023

Credit: Rheinmetall

innovations in engineering and digital thread and extended reality. How are these technologies being used in workflows?


From the beginning included the value of having that data from idea through life. Digital collaboration around evolving in the same place. It is just that the value of these things more practical. So

ins and the digital thread are key concepts in that the digital thread (all have) data that can animate these insights to support collaboration across more than the engineering disciplines. I had for a while that while everyone is talking about digital twins, those twins are fraternal twins, with very different meanings depending on the solution or service provider. In the definition of PLM, primary lifecycle optimization is at the heart of digital twins of different aspects of your




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### 2023 PLM Market – Overall State

 PLM market—overall growth of 8.6%

- The global PLM market missed CIMdata's forecast\*
  - Overall, the PLM market was up **8.6%** to **\$72.4 billion** (vs. forecast of 10.1%)
  - cPDm sector @ \$23.0B (6.3%); solid software and services growth
  - Tools sector @ \$48.4B (9.7%); led by significant EDA & S&A growth
  - Digital Manufacturing sector @ \$969.8M (6.2%)
- Bright spot for partners:
  - Integration of Low Code/No code solutions (e.g., Mendix, ThingWorx & Aras) enables companies to increase the flexibility of their solutions (win/win for customers & SIs)
- Digital Transformation driving PLM investments
  - Led by major service providers, e.g., Accenture & Atos, expanding their reach
  - EDA and S&A are outpacing the market as companies look to better anticipate life of a product
  - AEC is performing well as BIM usage is becoming widespread across projects of all sizes

49 \*MCAD grew at a slower rate than forecasted Copyright © 2024



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## CIMdata's Critical Dozen

01

02

03

04

05

01

02

03

04

05

06

**CIMdata's Critical Dozen**  
The Top 12 Trends and Enablers of Digital Transformation

12 familiar, evolving trends & key enablers of digital transformation that you cannot, or should not, live without.

Digital thread/digital twin convergence—some from of a digital thread is required if you wish to have an up-to-date digital twin

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## Digital Thread

CIMdata's preferred definition

06

Digital thread/twin

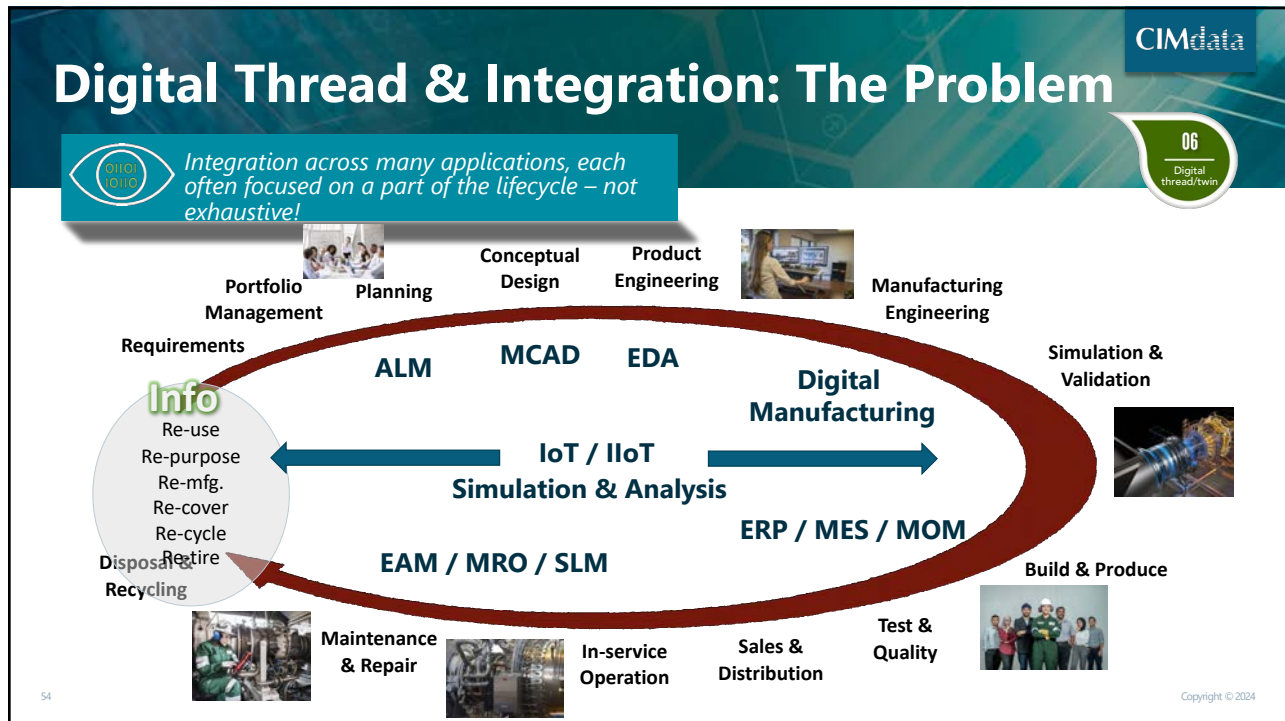
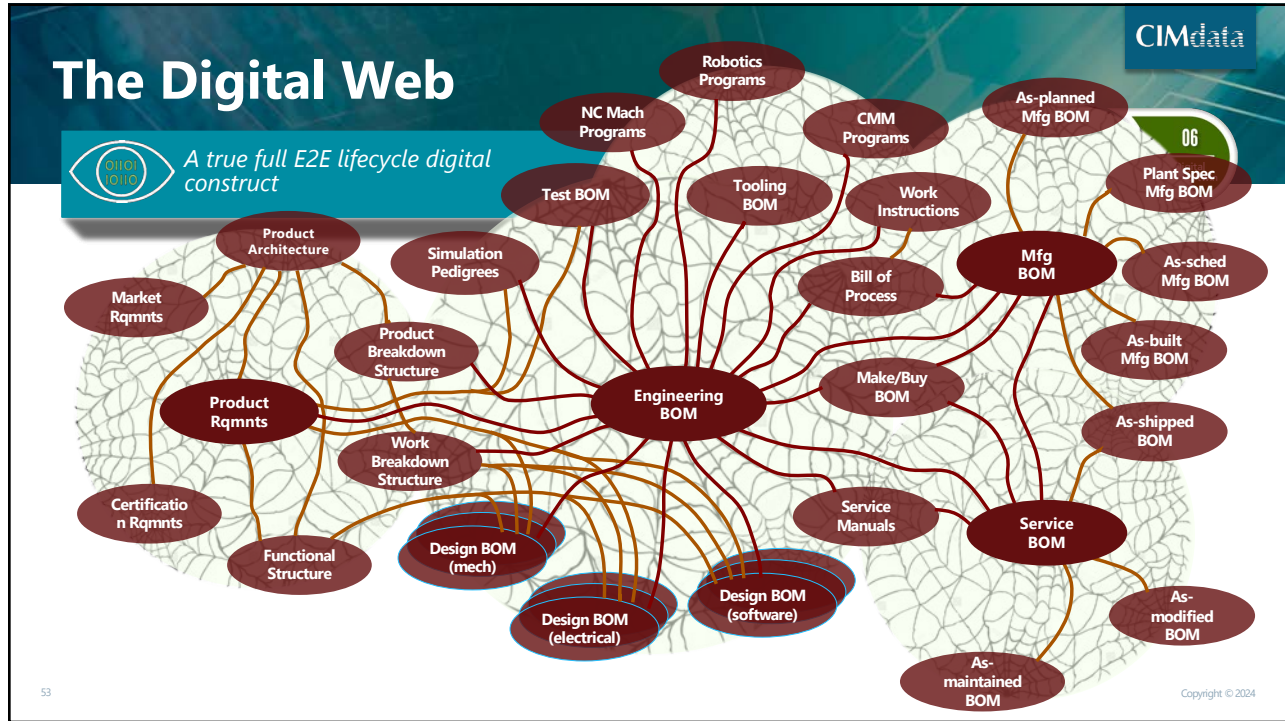
- A **communication framework** that allows a connected data flow & integrated view of an asset's data (i.e., its Digital Twin) throughout its lifecycle across traditionally siloed functional perspectives

Digital thread is enabled and supported by a robust end-to-end and connected systems model and MBSE processes

Extracted from: [https://www.dodmantech.com/ManTechPrograms/Files/AirForce/Cleared\\_DT\\_for\\_Website.pdf](https://www.dodmantech.com/ManTechPrograms/Files/AirForce/Cleared_DT_for_Website.pdf)  
 Also see: <http://www.manufacturing-operations-management.com/manufacturing/2016/04/what-is-the-digital-thread-and-digital-twin-definition.html>
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### Digital Twin

 A digital representation of products and/or services at any point throughout the lifecycle

06 Digital thread/twin

- A **virtual representation** (i.e., digital surrogate) of a physical asset or collection of physical assets (i.e., physical twin) that exploits data flow to/from the associated physical asset(s).



Digital Twin of the Product



Digital Twin of Production



Digital Twin of Service


**Digital twin is enabled and supported by a robust end-to-end and connected systems model and MBSE processes**

55 \*Adapted from input from ASSESS (see [www.assessinitiative.com](http://www.assessinitiative.com))

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### The Ultimate Vision

 Many credit Vickers as the first person to use the phrase—"digital twin"

06 Digital thread/twin

***"The ultimate vision for the digital twin is to create, test and build our equipment in a virtual environment. Only when we get it to where it performs to our requirements do we physically manufacture it.***

***We then want that physical build to tie back to its digital twin through sensors so that the digital twin contains all the information that we could have by inspecting the physical build."***



John Vickers, Manager,  
NASA's National Center for  
Advanced Manufacturing

56 <https://www.forbes.com/sites/bernardmarr/2017/08/08/what-is-digital-twin-technology-and-why-is-it-so-important/?sh=783735a22e2a>

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## CIMdata's Critical Dozen

01 End-to-end connectivity

02 Data & process management

03 Configuration management

04 Bills of information

05 Model-based structures

06 Digital thread/twin

07 IoT & PLM

08 Changing views of "product"

09 Big data & analytics


10 Augmented intelligence

**CIMdata's Critical Dozen**  
The Top 12 Trends and Enablers of Digital Transformation


12 familiar, evolving trends & key enablers of digital transformation that you cannot, or should not, live without.

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## Some Definitions

 What is artificial intelligence, machine learning, and deep learning?

- **Artificial Intelligence (AI)** is the ability of a machine to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages
- **Machine Learning (ML)** is making predictions and recommendations by algorithmically detecting patterns in available data and information, and improving the algorithms over time with new data and information, without explicit programmed instructions
- **Deep Learning (DL)** is a type of machine learning in which a cascade of interconnected layers of processing units extract increasingly complex features from the output of previous layers, leading to a hierarchy of concepts that can help make determinations about new data




AI ML DL


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# State of PLM: Today's Market & Leading Trends

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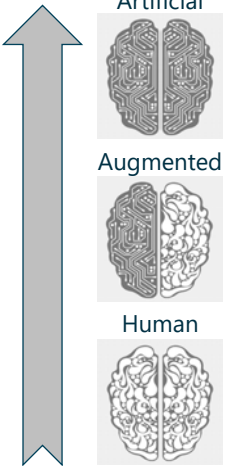
## Augmented Intelligence

This is where we are at


- **Augmented Intelligence** or intelligence augmentation (IA) is not about replacing human intelligence but rather about amplifying or augmenting it by enabling humans to make use of the large volume of data we're generating by combining human and machine intelligence


*"Over the next decade, AI won't replace managers, but managers who use AI will replace those who don't."*

*Erik Brynjolfsson and Andrew McAfee, HBR (2017)*




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## Generative AI

The AI revolution is upon us

- Deep-learning models that can generate high-quality text, images, and other content based on the data they were trained on
- AI has gone through many cycles of hype, but even to skeptics, the release of ChatGPT seems to mark a turning point
- OpenAI's chatbot, powered by its latest **large language model** (LLM), can write poems, tell jokes, and churn out essays that look like a human created them
- Prompt ChatGPT with a few words, and out comes love poems in the form of Yelp reviews, or song lyrics in the style of Nick Cave

60 Source: <https://research.ibm.com/blog/what-is-generative-ai>Copyright © 2024




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## Large Language Models


 *Defining LLM*

- A specialized type of AI that has been trained on vast amounts of data to understand existing content & generate original content
- A type of AI program that can recognize and generate text, among other tasks
- They are trained on huge sets of data
- They are built on ML: specifically, a type of neural network called a transformer model
- A computer program that has been fed enough examples to be able to recognize and interpret human language

61 Source: <https://www.cloudflare.com/learning/ai/what-is-large-language-model/>Copyright © 2024

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## What Is RAG?



 *Retrieval-Augmented Generation (RAG)—a simplified definition*

- A technique for enhancing the accuracy & reliability of GenAI models with facts retrieved from external sources
- RAG fills a gap in how LLMs work
  - LLMs are neural networks, typically measured by the number of parameters
  - An LLM's parameters essentially represent the general patterns of how humans use words to form sentences
- Deep understanding, sometimes called parameterized knowledge, makes LLMs useful in quickly responding to general prompts
  - Does not serve users who need a deeper dive into a current/more specific topic

62 Source: <https://blogs.nvidia.com/blog/what-is-retrieval-augmented-generation/>Copyright © 2024


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**RAG's Importance**

*Setting the appropriate context*




- When a LLM doesn't have enough information or has no contextual knowledge of a topic, it is more likely to hallucinate, and provide inaccurate or false responses
- AI researchers and developers have been exploring numerous RAG technologies, including:
  - Text chunking, query expansion, hybrid search, knowledge graph, reranking, and others
- An LLM needs the right data so that it doesn't have to make things up, and you need the best search technology to find the right data

63 Source: <https://cloud.google.com/blog/products/ai-machine-learning/rags-powered-by-google-search-technology-part-1> Copyright © 2024



**How People Are Using RAG**

*The application of RAG has just begun*



- With RAG, users can essentially have conversations with data repositories, opening new kinds of experiences
  - This means the applications for RAG could be multiple times the number of available datasets, for example,
    - A generative AI model supplemented with a medical index could be a great assistant for a doctor or nurse
    - Financial analysts would benefit from an assistant linked to market data
    - Manufacturing professionals' knowledgebase would expand significantly as an enterprise's search engine spans the organization's systems & data repositories\*
- Almost any business can turn its technical or policy manuals, videos or logs into resources called knowledgebases that can enhance LLMs

64 Source: <https://blogs.nvidia.com/blog/what-is-retrieval-augmented-generation/> Source: \*CIMdata Copyright © 2024



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## How RAG Impacts Enterprise Search

Maximizing ROI: How RAG Impacts Enterprise Search Strategies—from Sinequa

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- RAG is leading the way in revolutionizing enterprise search
- RAG's combination of information retrieval & NL generation not only improves search relevance and precision but also...
  - It optimizes information resources, empowers decision-making, enhances business intelligence, and yields a significant ROI
- As organizations continue to use RAG, they will pave the way for a future where information retrieval goes beyond traditional boundaries, driving businesses towards greater efficiency & innovation

65 Source: <https://www.sinequa.com/resources/blog/maximizing-roi-how-retrieval-augmented-generation-rag-impacts-enterprise-search-strategies/> Copyright © 2024

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## CIMdata's Critical Dozen

**01**  
End-to-end connectivity

**02**  
Data & process management

**03**  
Configuration management

**04**  
Bills of information

**05**  
Model-based structures

**12**  
Digital skills transformation

**11**  
Data governance

**10**  
Augmented intelligence

**09**  
Big data & analytics

**08**  
Changing views of "product"

**06**  
Digital thread/twin

**07**  
IoT & PLM

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# State of PLM: Today's Market & Leading Trends

## 2024 Market & Industry Forum—11 April 2024

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## Agenda

- What's New from CIMdata
- 2023: The Year in Review
- 2024: Today's Trends & Challenges
- Looking Towards the Future
- Digital Twins: Enhancing Lifecycle Performance
- Concluding Remarks

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## Top Strategic Tech Trends

Gartner's Top Strategic Technology Trends

	Direct connection	Indirect/secondary connection
<h3 style="margin: 0;">2022</h3> <ol style="list-style-type: none"> <li>1. <b>Data Fabric</b></li> <li>2. <u>Cybersecurity Mesh</u></li> <li>3. <u>Privacy-Enhancing Computation</u></li> <li>4. <b>Cloud-Native Platforms</b></li> <li>5. <b>Composable Applications</b></li> <li>6. <b>Decision Intelligence</b></li> <li>7. <b>Hyperautomation</b></li> <li>8. <b>AI Engineering</b></li> <li>9. <u>Distributed Enterprises</u></li> <li>10. <u>Total Experience</u></li> <li>11. <b>Autonomic Systems</b></li> <li>12. <b>Generative AI</b></li> </ol>	<h3 style="margin: 0;">2023</h3> <ol style="list-style-type: none"> <li>1. <u>Digital Immune System</u></li> <li>2. <u>Applied Observability</u></li> <li>3. <u>AI Trust, Risk and Security Management (AI TRISM)</u></li> <li>4. <b>Industry Cloud Platforms</b></li> <li>5. <b>Platform Engineering</b></li> <li>6. <u>Wireless-Value Realization</u></li> <li>7. <u>Superapps</u></li> <li>8. <u>Adaptive AI</u></li> <li>9. <b>Metaverse</b></li> <li>10. <b>Sustainable Technology</b></li> </ol> <p style="font-size: x-small; margin-top: 5px;"> <a href="https://www.gartner.com/en/articles/gartner-top-10-strategic-technology-trends-for-2023">https://www.gartner.com/en/articles/gartner-top-10-strategic-technology-trends-for-2023</a>  <a href="https://www.gartner.com/en/articles/gartner-top-10-strategic-technology-trends-for-2024">https://www.gartner.com/en/articles/gartner-top-10-strategic-technology-trends-for-2024</a> </p>	<h3 style="margin: 0;">2024</h3> <ol style="list-style-type: none"> <li>1. <b>AI Trust, Risk and Security Management (AI TRISM)</b></li> <li>2. <u>Continuous Threat Exposure Management (CTEM)</u></li> <li>3. <b>Sustainable Technology</b></li> <li>4. <b>Platform Engineering</b></li> <li>5. <b>AI-Augmented Development</b></li> <li>6. <b>Industry Cloud Platforms</b></li> <li>7. <b>Intelligent Applications</b></li> <li>8. <b>Democratized Generative AI</b></li> <li>9. <b>Augmented Connected Workforce</b></li> <li>10. <b>Machine Customers</b></li> </ol>

<sup>68</sup> <https://www.gartner.com/en/information-technology/insights/top-technology-trends>
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# State of PLM: Today's Market & Leading Trends

## 2024 Market & Industry Forum—11 April 2024

### What CEO's Are Saying



CEOs are facing a unique set of challenges and opportunities in 2024. McKinsey has identified **eight key priorities for CEOs** this year.

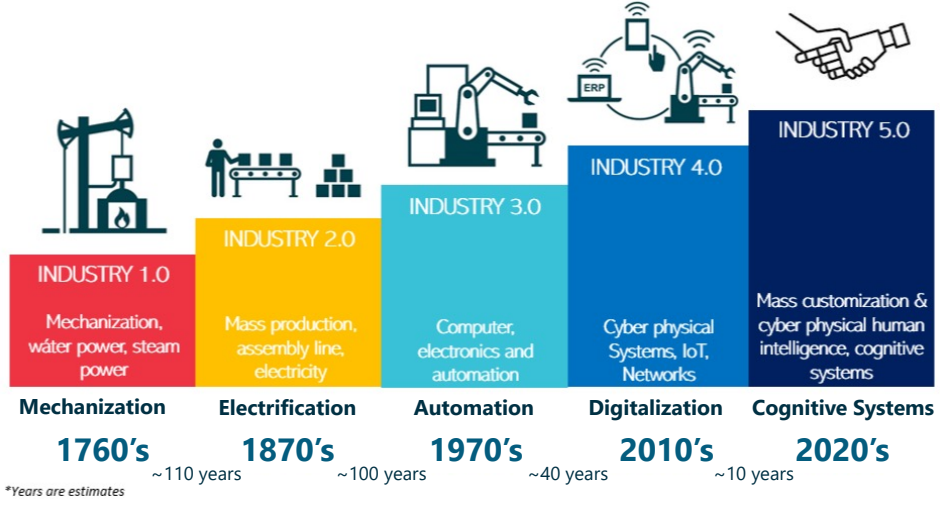
These include:

- 1 Leveraging generative AI across business operations and scaling its applications
- 2 Outcompeting with technology by fundamentally rewiring organizations to extract maximum value from digital transformations
- 3 Navigating the energy transition, which represents a significant capital reallocation
- 4 Identifying and leveraging organizations' unique strengths
- 5 Appreciating the critical role of middle management
- 6 Ensuring resilience against geopolitical disruptions
- 7 Driving continuous growth
- 8 Navigating the complexities of a fluctuating macroeconomy

<sup>69</sup> <https://businessleadershiptoday.com/what-are-the-mckinsey-leadership-development-trends-for-2024/#:~:text=McKinsey%20has%20identified%20eight%20key,maximum%20value%20from%20digital%20transformations>

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### The Next Industrial Revolution is Upon Us



<sup>70</sup> <https://www.linkedin.com/pulse/getting-ready-5th-industrial-revolution-industry-50-christian-polo/>

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## Industry 6.0...What's Next?

“

The measure of intelligence is the ability to change.

ALBERT EINSTEIN

GRACIOUSQUOTES.COM

“

There is nothing permanent except change.

HERACLITUS

GRACIOUSQUOTES.COM

“

The secret of change is to focus all of your energy not on fighting the old, but on building the new.

SOCRATES

GRACIOUSQUOTES.COM

*Given the rate of change we have seen, Industry 6.0 is probably already upon us.*

71 <https://graciousquotes.com/quotes-about-change/> Copyright © 2024

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## Agenda

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# State of PLM: Today's Market & Leading Trends

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## This Year's Market & Industry Forum Theme

 *Digital Twins: Enhancing Lifecycle Performance*

- Digital twins are everywhere today
  - Virtually all the top 25 PLM market leaders globally are talking about and supporting the concept
- While not everyone agrees on exactly what a digital twin is, the need to better understand a product's lifecycle performance on a range of metrics is critical to optimizing its performance
- In this Forum, CIMdata will
  - Highlight the overall issue
  - Discuss how the global PLM Economy is responding
  - Discuss how well industrial companies appear to be achieving their objectives

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## Today's Agenda

 *2024 PLM Market & Industry Forum (1 of 2)*

- **Digital Twins: Enhancing Lifecycle Performance**
  - **Digital Twin Overview Presentation**  
Stan Przybylinski, Vice President
  - **Digital Twins: The Industrial Perspective**  
Stan Przybylinski, Vice President
  - **Digital Twins: The PLM Economy Perspective**  
Stan Przybylinski, Vice President
- **Break**

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# State of PLM: Today's Market & Leading Trends

2024 Market & Industry Forum—11 April 2024




## Today's Agenda

 2024 PLM Market & Industry Forum (2 of 2)

- **Updates on Key Topics**
  - **Analytics & Artificial Intelligence/Machine Learning (AI/ML)**  
Sandeepak Natu, Executive Consultant, Simulation-Driven System Development
  - **News from the Field**  
Peter Bilello, President & CEO
- **Closing Comments**

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## Agenda

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## Concluding Remarks

State of PLM: Today's Market & Leading Trends (1 of 2)

- CIMdata continues to expand & adjust to major PLM market trends—adding people & services to stay at the forefront
- CIMdata's global A&D PLM Action Group has entered its 10<sup>th</sup> year in partnership with market leaders—major MBSE research is underway & you can participate
- Multiple disconnects still exist, e.g., prioritization of digital initiatives, and management's narrow understanding of lifecycle management—executive education still required
- The global PLM economy is growing and continues to add value

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## Concluding Remarks

State of PLM: Today's Market & Leading Trends (2 of 2)

- The global PLM economy has reached another milestone—***\$73 billion—a 8.6% increase***
- To be successful, companies need to transform people, processes and technologies—there are at least 12 evolving critical elements—the convergence of digital thread/digital twin & continued emergence of multiple forms & application of AI
- The next industrial revolution is already upon us—are you ready?

*Agility is key to long-term success...is your organization agile?*


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### Questions & Answers

 What's on your mind?



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 Strategic management consulting for competitive advantage in global markets

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