

State of PLM: Today's Market & Leading Trends

2022 CIMdata PLM Market & Industry Forum

State of PLM: Today's Market & Leading Trends

PLM Market & Industry Forum

A CIMdata PLM Leadership Event

31 March 2022—Ann Arbor, MI USA

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Global Leaders in PLM Consulting
www.CIMdata.com

#plm4um

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Our Mission...

Strategic management consulting for competitive advantage in global markets

CIMdata is the leading independent global strategic management consulting and research authority focused exclusively on PLM and the digital transformation it enables.

We are dedicated to maximizing our clients' ability to design, deliver, and support innovative products and services through the application of PLM.

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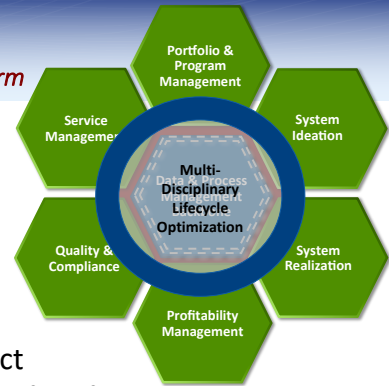
State of PLM: Today's Market & Leading Trends

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PLM – CIMdata's Definition

Digital transformation of the lifecycle—enabled by a product innovation platform

- Strategic business approach
 - **NOT** just technologies
 - Consistent set of business solutions
- Collaborative creation, use, management & dissemination of product related *intellectual assets*
 - All product/plant definition information – the virtual product
 - AEC, MCAD, EDA, ALM, SE, requirements, simulations, analytics, portfolio, formulas...
 - All product/plant process definitions – the virtual processes
 - Processes that plan, design, produce, operate, support, decommission, recycle...
- An innovation platform that supports the extended enterprise
- Spans the full lifecycle, from idea/concept through life



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Key Takeaways

State of PLM: Today's Market & Leading Trends—2022 CIMdata PLM Market & Industry Forum

- The global PLM economy is growing and continues to add value
- Multiple disconnects still exist, e.g., PLM vs. DT, outside-in vs. inside-out, and managements narrow understanding of lifecycle management
- To be successful, companies need to transform people, processes and technologies—there are at least 12 critical elements
- The digital thread is really a digital web—key to true E2E traceability
- Sustainability is a lifecycle issue that offers significant opportunities for all
- The PLM user community is evolving its thinking and so are the leading PLM solution providers
- The future is looking bright when it comes to broader PLM adoption

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Agenda

State of PLM: Today's Market & Leading Trends

- What's New from CIMdata
- 2021: The Year in Review
- 2022: Today's Trends & Challenges
- Looking Towards the Future
- Sustainability: PLM Essential to Facing this Global Challenge
- Concluding Remarks

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CIMdata Services...

Creating, disseminating, and applying our intellectual capital in support of your digital transformation



**PLM
Foresight**

**PLM
Leadership**

**PLM
Transformation
PLM Invest
PLM
Success**

Delivering strategic advice and counsel through a comprehensive, integrated set of research, education, and consulting services

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PLM Invest™

Services for Financial Organizations—optimizing your PLM investments in the evolving digital economy




CIMdata's PLM consulting methodology—leveraging deep market knowledge and extensive experience to enhance investment success!

A comprehensive set of services tailored to fit your specific needs...

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PLM Success™

Services for PLM Solution Providers—supporting the drive towards market success in the evolving digital economy



CIMdata's PLM consulting methodology for PLM solution providers

A comprehensive set of services tailored to fit your specific needs...

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CIMdata's Expands Solution Provider Support

Doug Macdonald joins CIMdata as Director of PLM Success

Monday, January 24, 2022

PLM Industry Executive Doug Macdonald Joins CIMdata as Director of PLM Success and Executive Consultant

The primary focus will be developing and delivering new services to meet solution provider needs.



Ann Arbor, Michigan, USA 24 January 2022—CIMdata, Inc., the leading global Product Lifecycle Management (PLM) strategic management consulting and research firm, has hired Doug Macdonald as Director of PLM Success and Executive Consultant. Doug will be responsible for expanding relationships with PLM solution providers and developing new consulting services to meet their needs.


Peter Bilello, President & CEO of CIMdata, commented, "We're excited to have Doug join CIMdata. He has a deep understanding of PLM both from a solution provider and industrial user perspective. His experience has given him a comprehensive understanding of how solution providers operate and organize their processes and resources to maximize success. As the needs of PLM solution providers continue to evolve, Doug's experience will help CIMdata to support them in meeting existing, as well as new market challenges."



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PLM Transformation™

Services for Industrial Organizations—supporting the drive towards enabling the digital enterprise



CIMdata's PLM consulting methodology—transforming your business for a competitive advantage!

A comprehensive set of services tailored to fit your specific needs...



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Our PLM Transformation Clients...

A sampling of CIMdata's past and present international industrial clients (1 of 2)

A&D
 ALLEN VANGUARD, Litton TASC, AIRBUS GROUP, BOEING, NORTHROP GRUMMAN, MOOG, Newport News Shipbuilding, Vought, Orbital ATK, THALES, RAFAEL, EMBRAER, BERTIS, OSHKOSH, CAE, Rolls-Royce, BAE SYSTEMS, GENERAL DYNAMIC, CURTISS WRIGHT, Gulfstream, Sandia National Laboratories, AEROSPACE, Los Alamos, Bell Helicopter

Auto
 DURA, DELPHI, NISSAN, JAGUAR, gm, TOYOTA, VOLVO, PAULSTRA, Johnson Controls, BOSCH, TIMKEN, FAURECIA, LEAR CORPORATION, HONDA, Visteon, Ford, YAZAKI, CHRYSLER, FIAT, TENNECO, GRUPPO BOCA, NEXTEV, FURUKAWA, Autoliv, nemak, RICARDO, INTIER, AVL, RIETER, BODPER STANDARD

Fab & Assembly
 JOHN DEERE, McCauley, WARTSILA, Bissell, CAT, Swagelok, ROLEX, Steelcase, SLOAN, JLG, KONE, MEYU, Hypertherm, SIEMENS, Bosch CASE, Schneider Electric, HUNTER, BOBST, STRATTEC, SIMPSON, ACCO, Husqvarna, Sidel, Whirlpool, Pentair, GE, TRANE, FISHER, WinWind, DANABER, Colfax, Aprilaire, STANLEY, ABB Group, AS-E, GRUNDFOS, JCB, Cimarel

High-Tech
 PHILIPS, Microsoft, SHURE, AMD, Seagate, GIGABYTE, OKI, rakon, 3COM, ALCATEL, IBM, Tellabs, STORAGETEK, Benq, Pulse, Veeco, NOKIA, TE, Canon, LEXMARK, XEROX, Waters, MINOLTA, Sun, opnext, HUAWEI, Raytheon, hp, DELL, FLUORWARE, SONY, NXP

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Our PLM Transformation Clients...

A sampling of CIMdata's past and present international industrial clients (2 of 2)

CPG/F&B/Process
 Kimberly-Clark, DOW, KEURIG GREEN MOUNTAIN, Altria, FFA Dairy Farmers of America, Coca-Cola, P&G, McCormick, Shell, LAND O'LAKES, GOODYEAR, LEGO, DSM, CSM, Imperial Tobacco, PHILIP MORRIS, amcor, JTI

Medical/Pharma
 Baxter, BD, Alcon, GE, MEDRAD, Edwards, Dräger, B&L OLFSEN, Playtex, DePuy, Johnson & Johnson, smith&nephew, ETHICON ENDO-SURGERY, Inc., Abbott, BAYER, SIEMENS, FORT WAYNE METALS

Emerging Ind.
 NATIONAL OILWELL VARCO, Outotec, EDF, GORE, JPL, Pokéon, Schlumberger, IHC, MERWEDE, DAMEN, DOOSAN, Doosan Power Systems, Samsonite, Walt Disney Imagineering, EAB ENGINEERING, Rijkswaterstaat, NIKE, Baker Hughes, ULSTEIN, AREVA

Other
 SAVONIA, KONGSBERG, VTT, IDS Infotech Ltd., Cranfield UNIVERSITY, KACST, NTNU - Trondheim, LINCOLN LABORATORY, INSTITUTE FOR INFORMATION INDUSTRY

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CIMdata Leadership

Conferences, seminars, and educational programs



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

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PLM Certificate Program Participants

A sampling of CIMdata PLM Leaders—over 1,100 PLM Professionals certified



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CIMdata's PLM Road Map™

Right-sized, regional, industry-focused collaborative events



- PLM Road Map™ 2022 Series—in person
 - PLM Road Map™ NA 2022—May 24-25, Washington D.C. area
 - PLM Road Map™ EMEA 2022—November, Gothenburg, Sweden
 - Hosted jointly with PDT NA & PDT Europe 2022
- 2022 Theme: “Digital Transformation and PLM – a call for PLM Professionals to re-define and re-position the benefits and value of PLM”

PLM Road Map, in its 29th year, continues to be a premier international PLM industry event in the rapidly transforming digital world

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2022 CIMdata PLM Status & Trends Survey

Some key conclusions

- CIMdata once again executed its comprehensive PLM Status & Trends survey
- A majority of the respondents have more than one PLM solution and have been working on PLM for more than 10 years
- Most implementations still focus on “traditional” PDM aspects of PLM
- For the most part, companies continue to find PLM worth investing in
- There continues to be an emphasis on getting faster, better, cheaper
- Enterprise systems confusion still exists, as well as culture & practice differences
- Management disconnect is believed to be widespread
- PLM appears to have gained momentum in 2022

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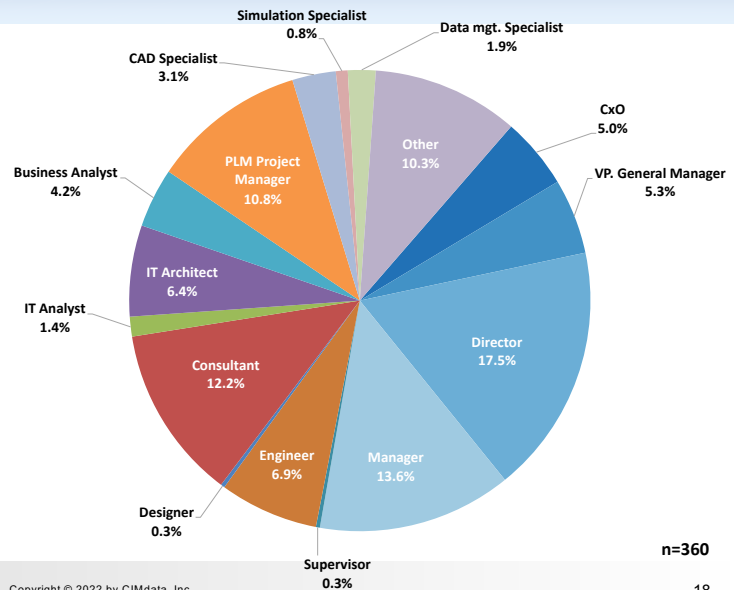
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Respondent Demographics

(1 of 6)

What is your role/title?

CIMdata comment: ~42% of the respondents hold a role of supervisor or higher in their organization, and another ~11% are PLM Project Managers. A good cross section of PLM influencers and users.



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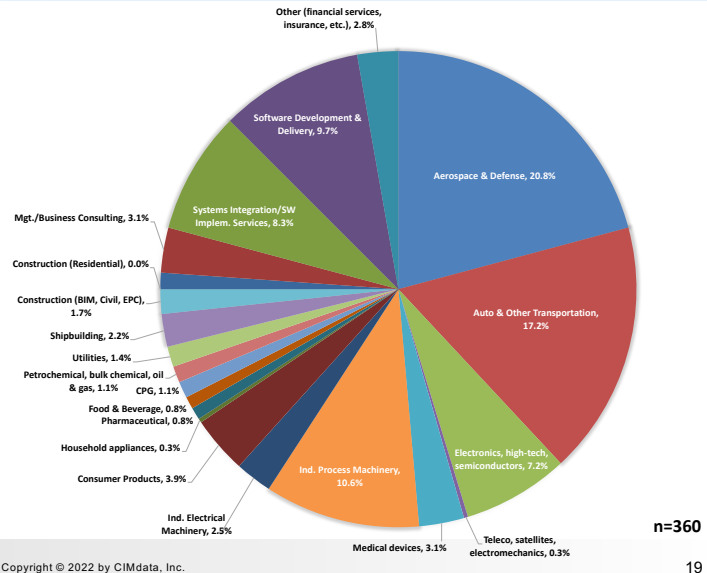
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Respondent Demographics

(2 of 6)

What is the primary industry your company serves?

CIMdata comment: This industry spread approximately matches the overall spend on cPDM offerings, traditionally led by automotive, aerospace and defense, high-tech, industrial machinery, and medical device.



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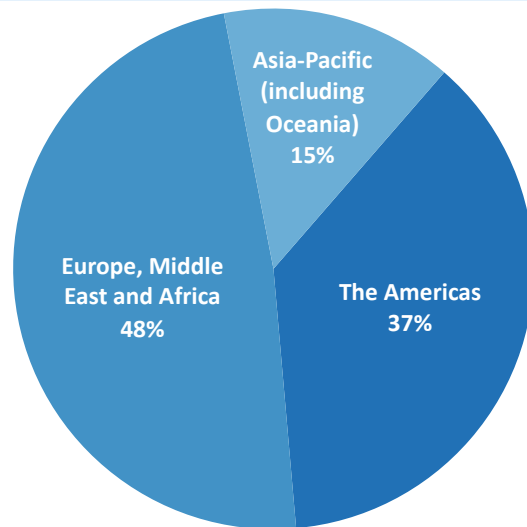
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Respondent Demographics

(3 of 6)

In which geographic region is your company's headquarters located?

CIMdata comment: Respondents primarily from EMEA and the Americas, and a good representation from Asia-Pac this year. Global PLM spend is 40-40-20.



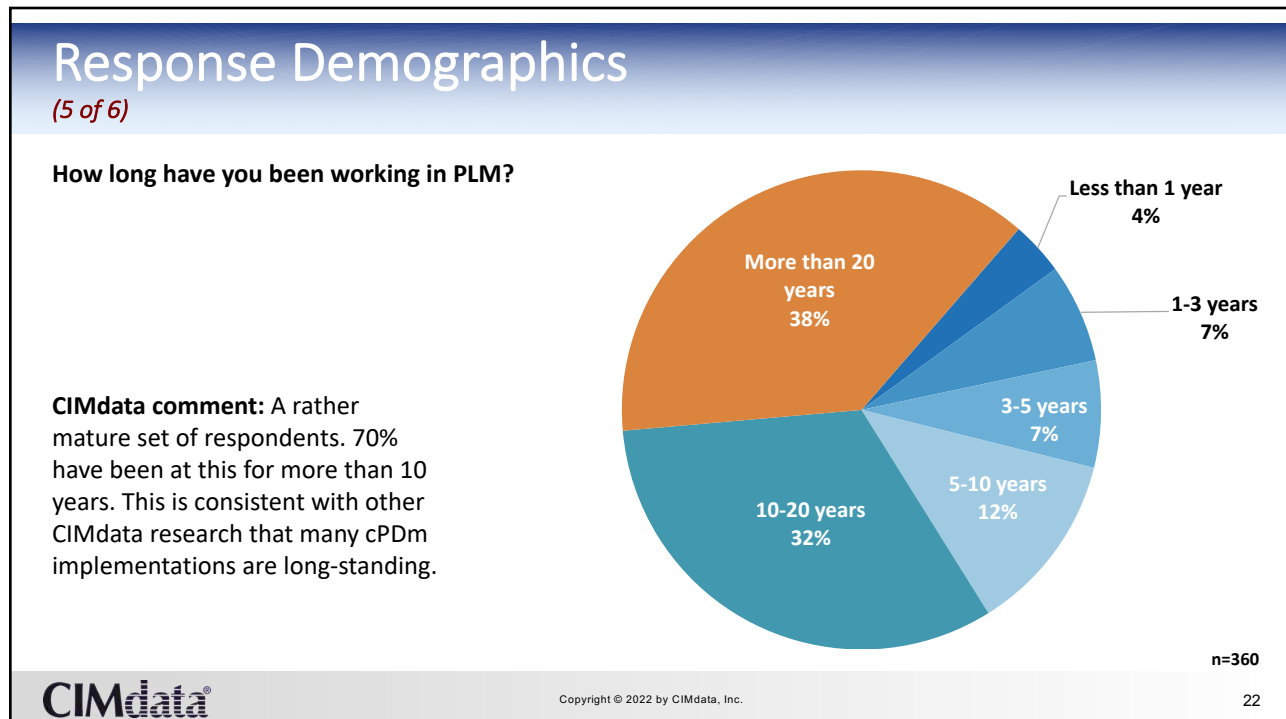
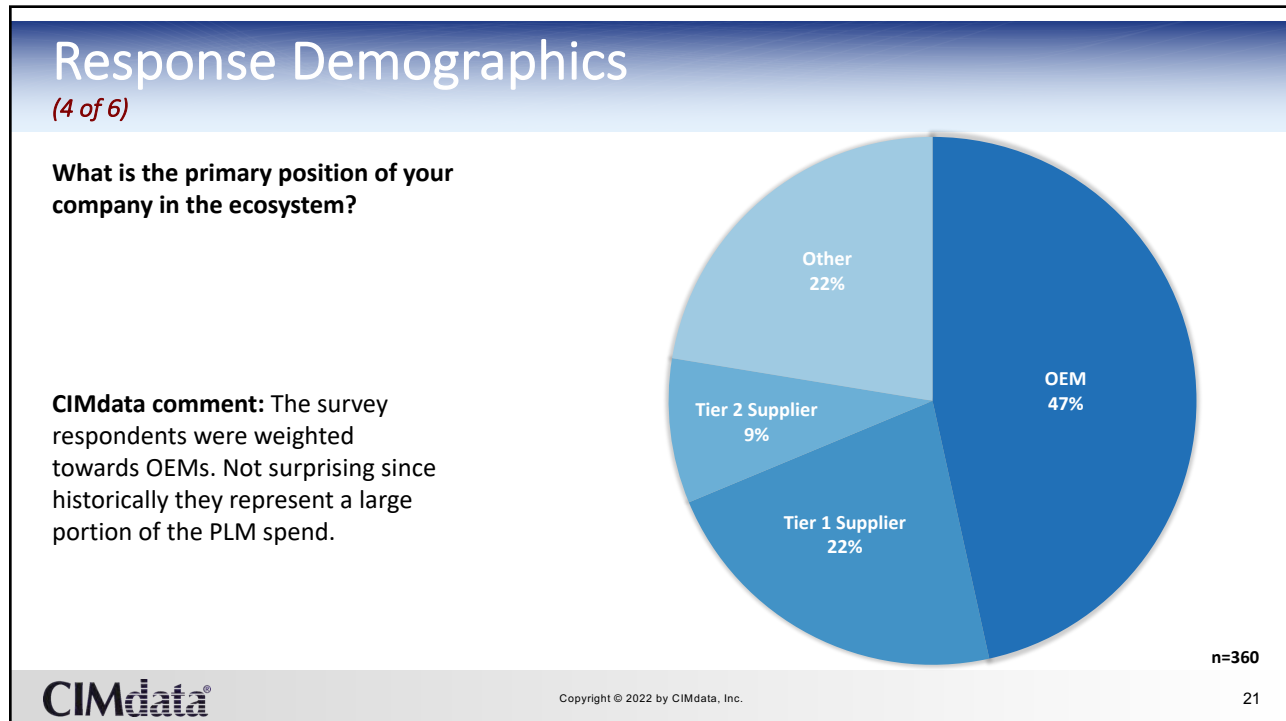
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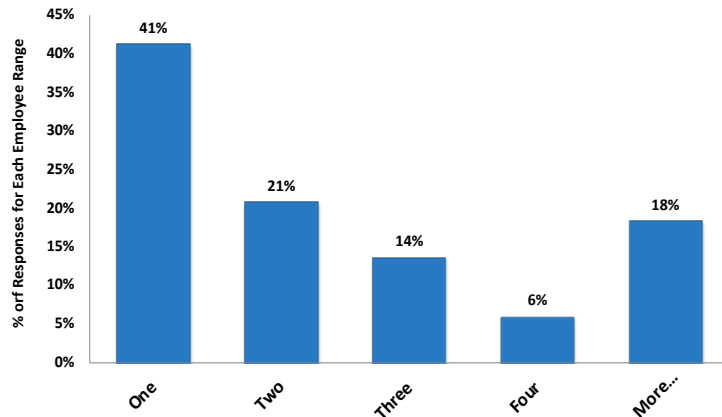
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Response Demographics

(6 of 6)

How many commercially available PLM solutions are currently in operation within your company?

CIMdata comment: ~60% of the respondents have more than one PLM solution. This is consistent with CIMdata's industrial consulting work, where many large companies built through mergers and acquisitions have many solutions in place.



n=250



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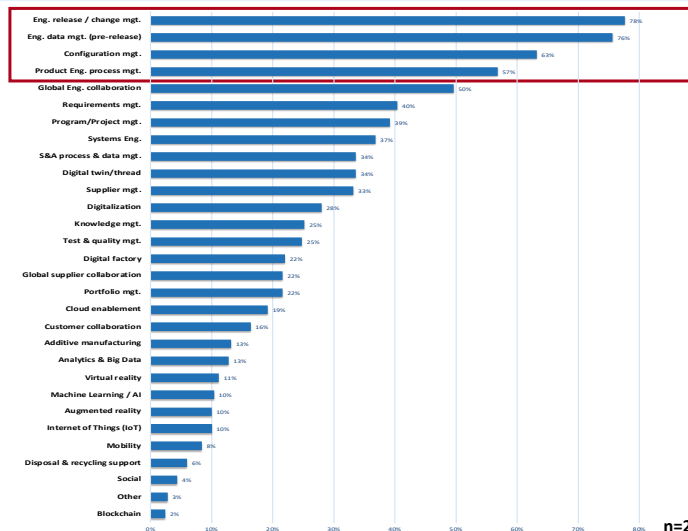
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Implementation Status

(1 of 2)

What is the business process scope of your current generation PLM solution?

CIMdata comment: Heavily weighted towards the "traditional" PDM aspects of PLM. This is consistent with CIMdata's experience. Others: App. Lifecycle Mgt., Master Data Mgt., Doc Mgt., Compliance, Sustainability & BI, Project Accounting & BOM fed.



n=250



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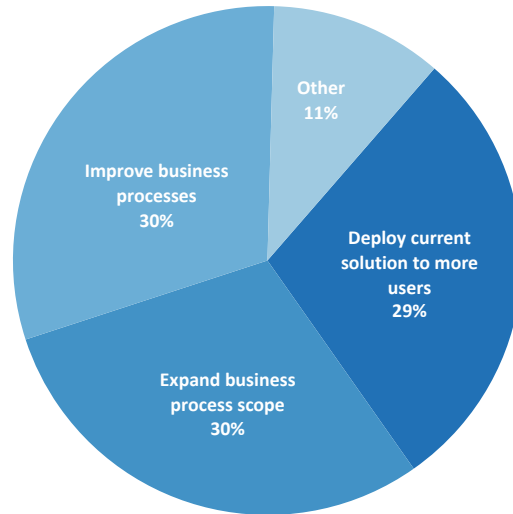
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Implementation Status

(2 of 2)

Please estimate the size, as a percent, of your total investment for each of the categories listed.

CIMdata comment: Investment evenly split among the three main investment areas. No real change over the last few years.



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PLM Financials

(1 of 3)

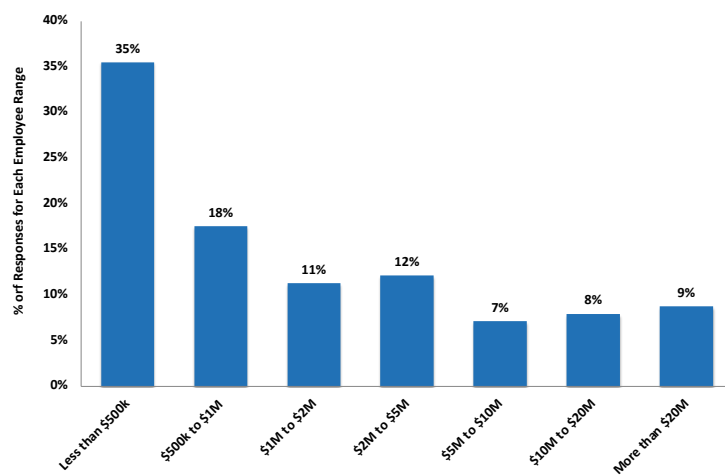
What is your current annual PLM budget?

CIMdata comment: A good cross section of implementation sizes, with 47% spending more than US\$1 million each year.

2021: 52%

2020: 58%

2019: 43%



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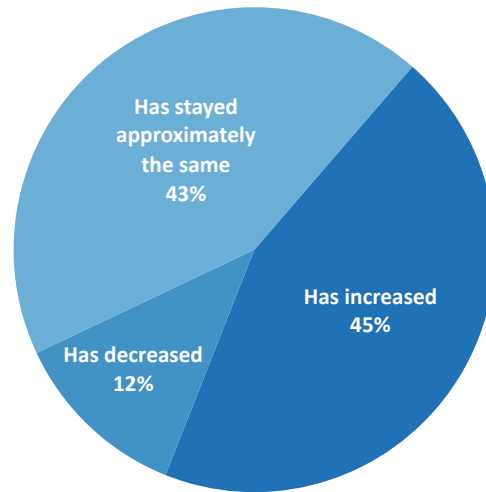
PLM Financials

(2 of 3)

What is your PLM budget trend from the previous two years?

CIMdata comment: A continued positive sign that companies find PLM worth spending money on. **88%** stated increased or stayed the same.

2018: 76% **2020:** 84%
2019: 80% **2021:** 82%



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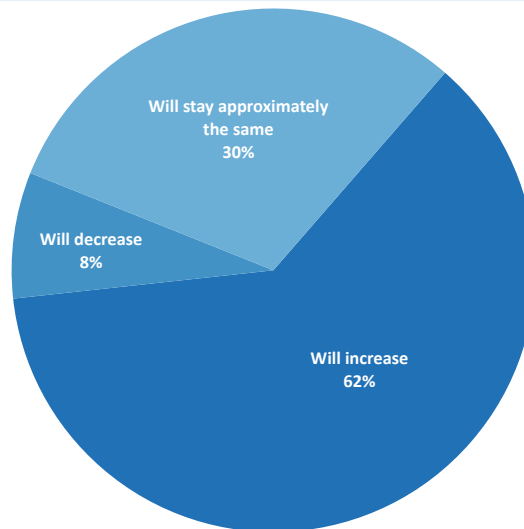
PLM Financials

(3 of 3)

What is your expected PLM budget trend for the next two years?

CIMdata comment: A positive sign for continued investment. **62%** will increase.

2021: 51% Will increase
2020: 42%*
2019: 64%
2018: 48%



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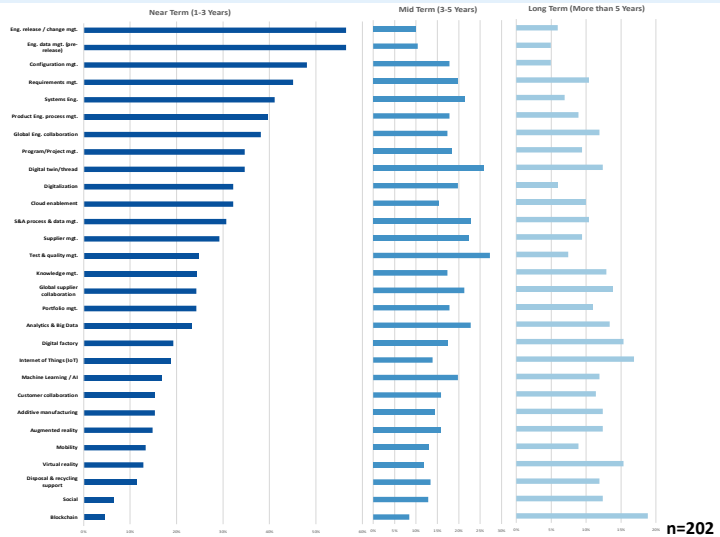
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PLM Investment

(1 of 2)

What business process areas will you invest in for your future PLM solution and what is the time frame for each investment area?

CIMdata comment: Short-term still focused on “traditional” areas. Mid-term spread across traditional & non-traditional areas. Long-term non-traditional areas. Others: ALM, SLM, ERP/MES integration, Multi-BOM, Mfg. Planning, Compliance, Sustainability, and many others.



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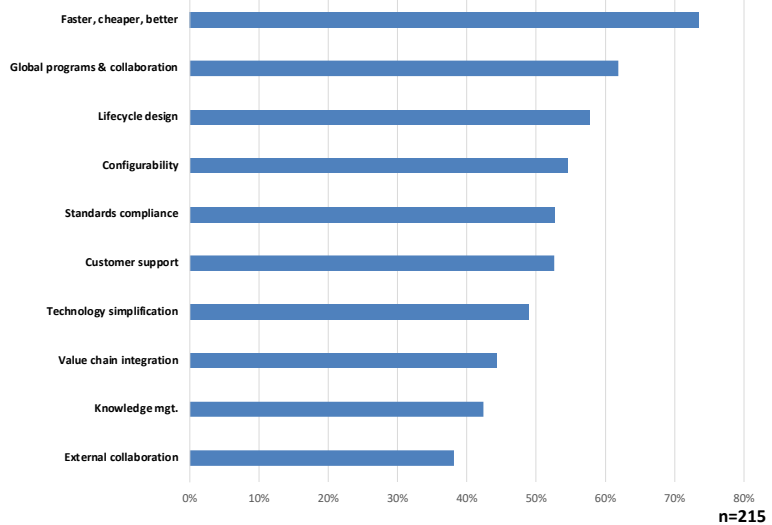
PLM Investment

(2 of 2)

What are the business objectives that have been established for your future PLM solution?

CIMdata comment: Significant future focus getting faster, better, cheaper. Same as in 2019, 2020 & 2021.

Lifecycle design moved down one spot. Global program & collaboration moved up three spots. Configurability stayed the same.



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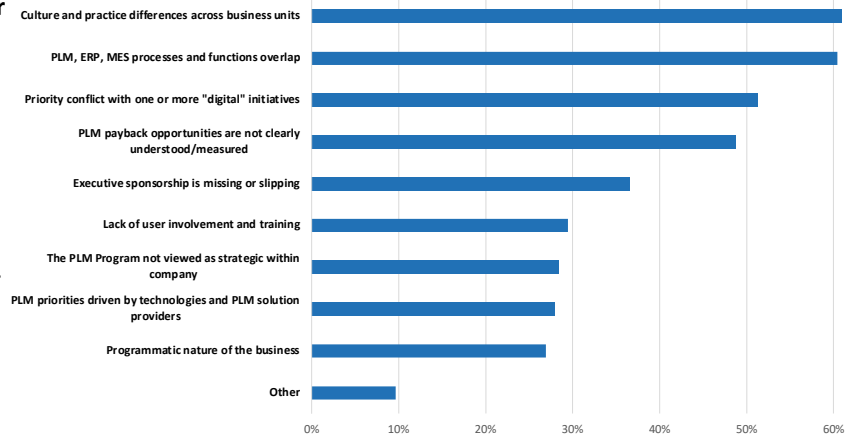
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Investment Challenges

(1 of 1)

What are the major challenges to be overcome for the success of your future PLM solution?

CIMdata comment: "PLM, ERP, MES process..." moves down 1 spot. Culture moved up one spot. Others stay in the same spot as last year.



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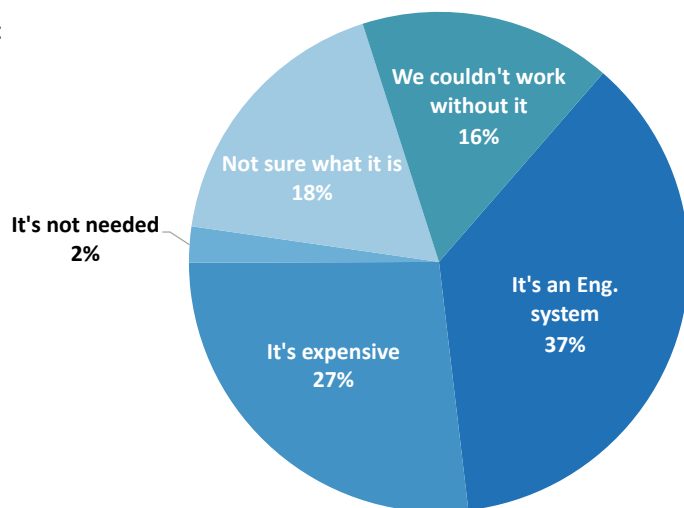
PLM's Future

From 2022 CIMdata PLM Status & Trends survey (1 of 2)

What does your company's management think of PLM?

CIMdata comment: There is a significant value disconnect. Only 16% couldn't work without it.

2021: 20% couldn't work without it
2020: 14%
2019: 16%



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PLM's Future

From 2022 CIMdata PLM Status & Trends survey (2 of 2)

Has the term PLM run its course?

Response	Percentage
No	62%
Yes	38%

CIMdata comment: The majority still believe that the term PLM has value.

2021: 31% said Yes it has run its course
2020: 44%
2019: 52%

Please join our webinar on May 12, 2022 for a full review of our 2022 PLM Status & Trends survey.

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What CIMdata Has Been Saying

Some examples—have you seen what we have been publishing since the last Forum—more than one release per week

Top 12 Trends and MachineDesign.

Unlock Every Transform

Fast Photonics Alignment Engines

Re-engineering the Digital Transformation

Feb. 18, 2022
 Processes and people alike must be upgraded to take full advantage of tools and technology.
 Tom Gill

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2021 PLM Market – Overall State

PLM market—overall growth of 10.7%



- The global PLM market exceeded CIMdata's forecast
 - Overall, the PLM market was up 10.7% to \$59.2 billion (vs. forecast of 7.5%)
 - cPDm sector @ \$19.5B (8.2%); solid software growth, services down
 - Tools sector @ \$39.4B (12.1%); led by significant EDA growth
 - Digital Manufacturing sector @ \$874M (4.9%)
- Continued movement towards subscription
 - E.g., Autodesk & PTC finished, others, e.g., Siemens DIS in early stages
- Digital Transformation, I4.0 & other initiatives are becoming a force multiplier
 - Led by major service providers, e.g., Accenture & Atos, expanding their reach
 - Major PLM players are differentiating & expanding their reach

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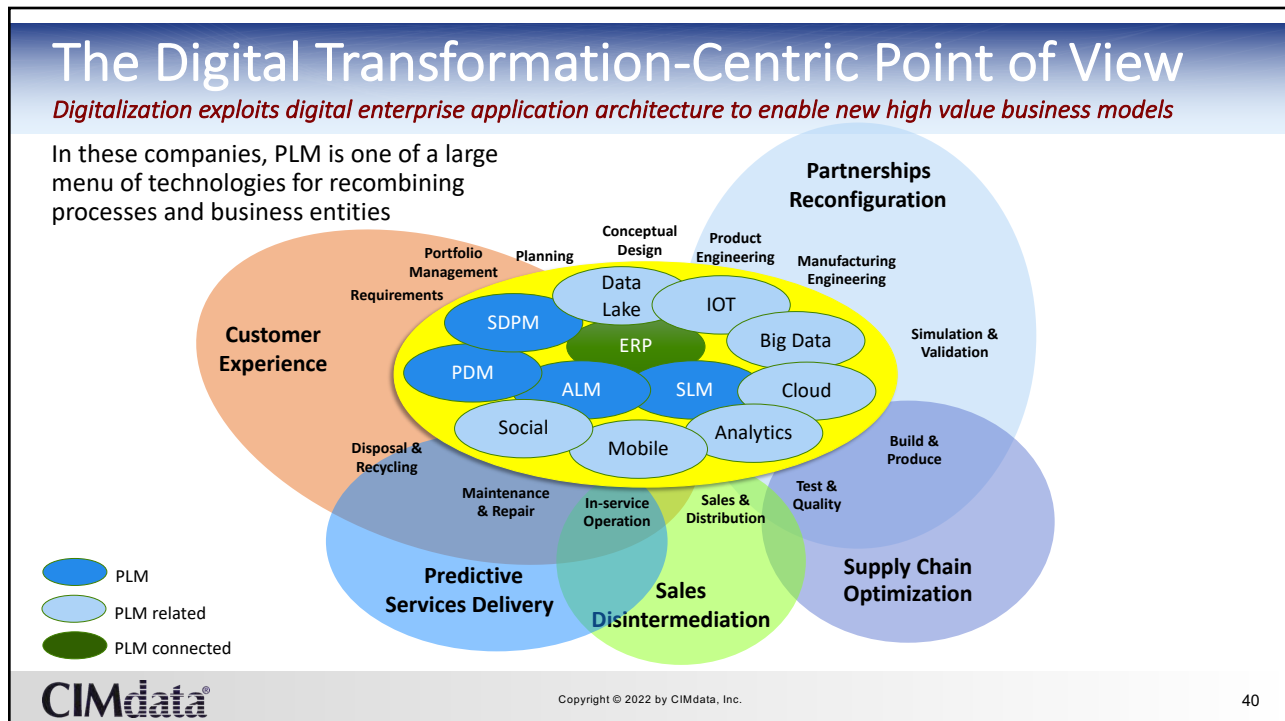
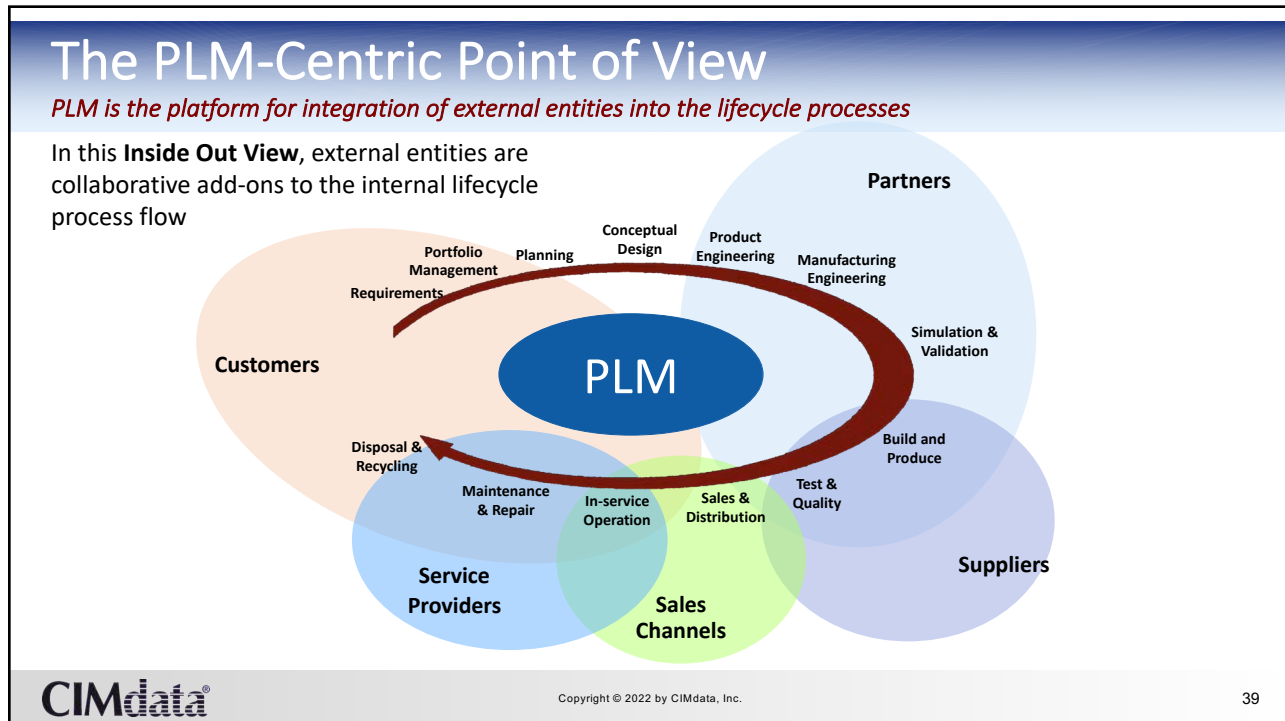
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Driving Engrg., Info. & Op. Technology Convergence

Closing the multiple systems of systems loops that exist throughout an enterprise

- The integration of ET & IT systems used for data-centric creation & computing with OT systems used to monitor events, processes and devices, and adjust enterprise and industrial operations
 - ET includes those systems and tools that support the development and evaluation of product and process definitions (i.e., an organization's product-related IP)
 - IT includes any use of computers, storage, networking devices and other physical devices, infrastructure and processes to create, process, store, secure, and exchange all forms of electronic data
 - OT, traditionally associated with manufacturing and industrial environments, includes industrial control systems (ICS) such as supervisory control and data acquisition (SCADA)
- Convergence enables more direct control & more complete monitoring, with easier analysis of data from these complex systems

<https://searchitoperations.techtarget.com/definition/IT-OT-convergence>

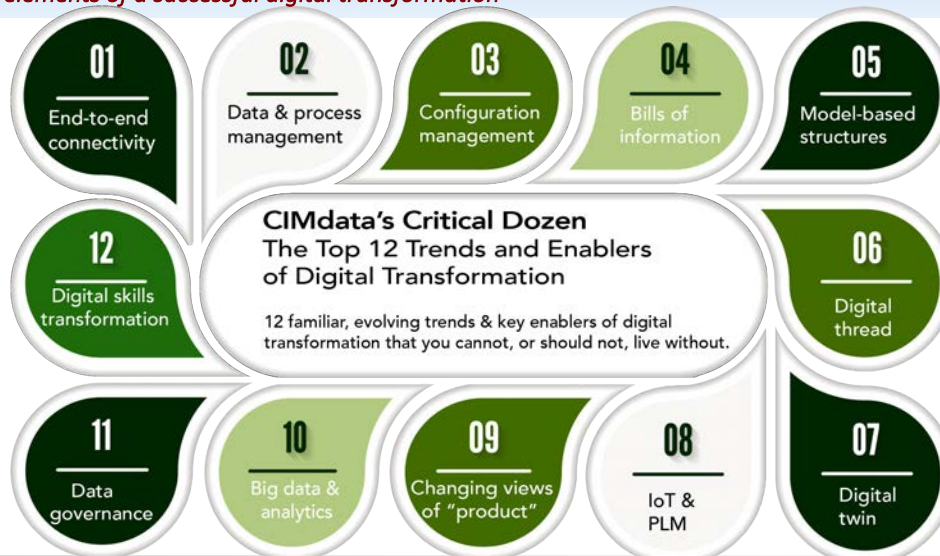
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CIMdata's Critical Dozen

12 critical elements of a successful digital transformation



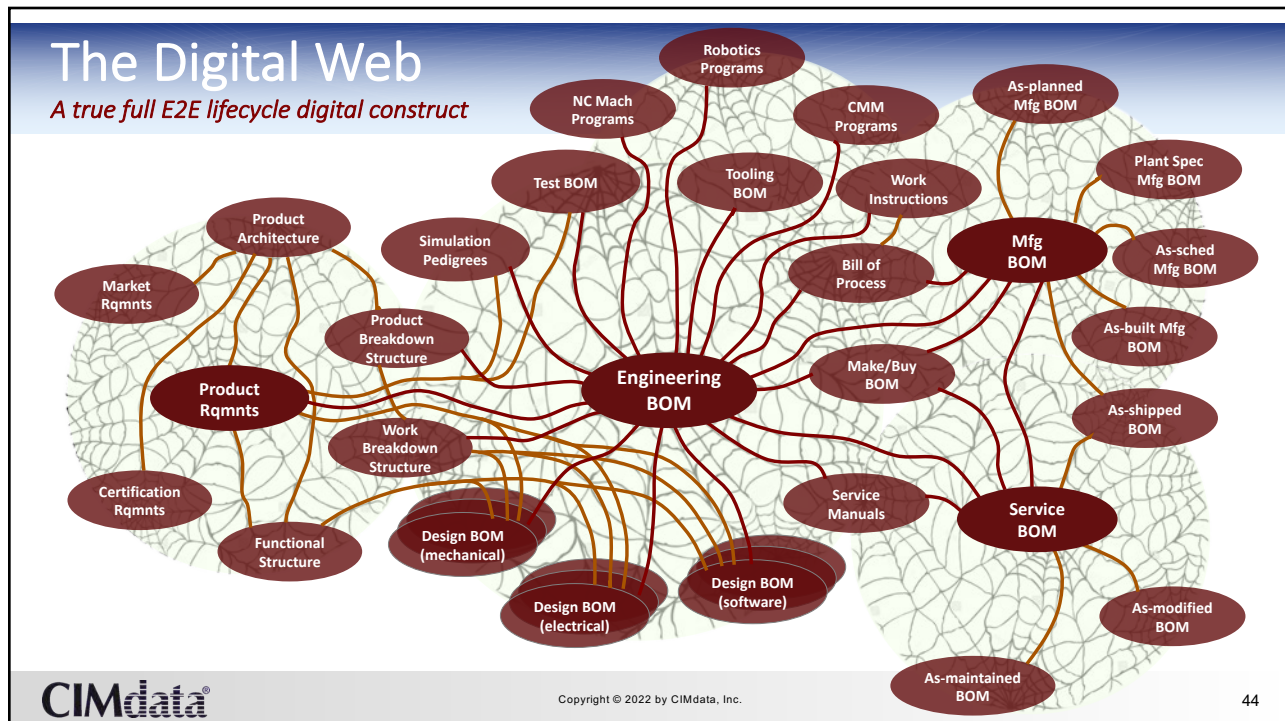
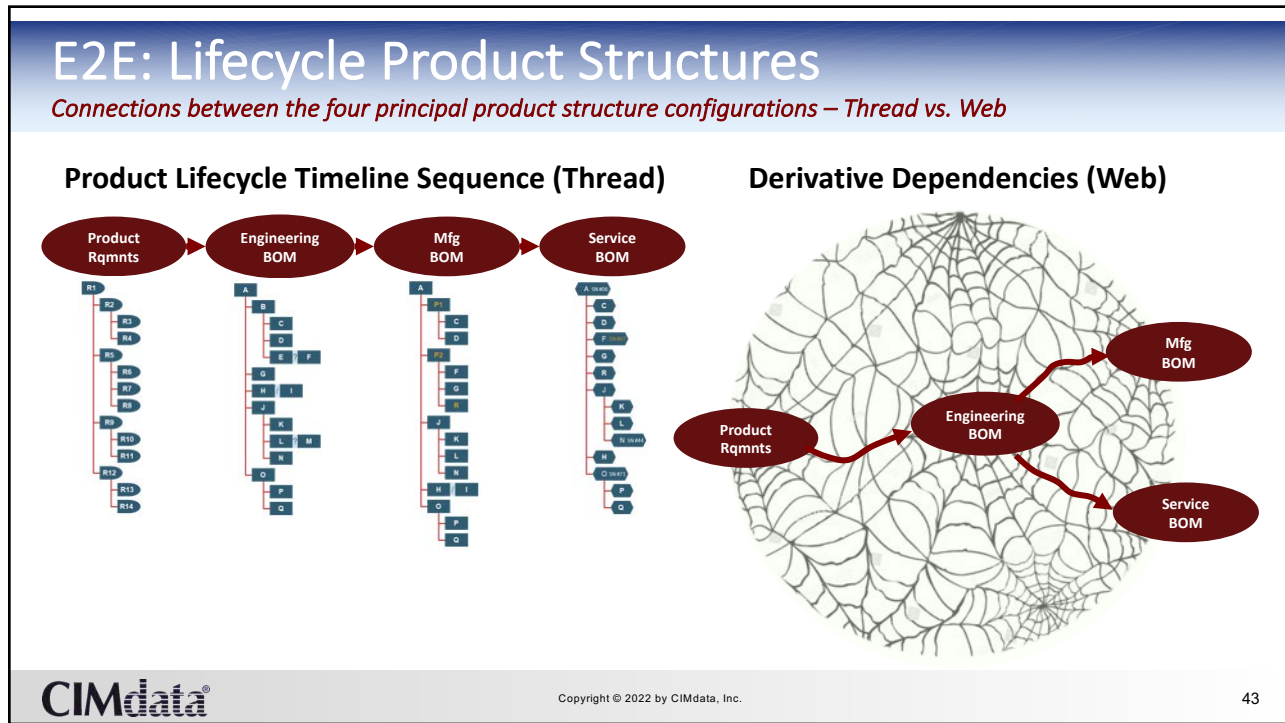
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Success Includes People, Processes & Technologies

I am glad that we aren't the only people saying this

The most successful transformations enable employees from every corner of the organization to put forward ideas that can improve the focus, process, and execution of initiatives.

London, Laura, Madner, Stephanie, and Skerritt, Dominic, *How many people are really needed in a transformation?*, McKinsey & Company, September 2021.

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Top Strategic Tech Trends

Gartner's Top Strategic Technology Trends


2019	2020	2021
1. Hyperautomation	1. Internet of Behavior	1. Data Fabric
2. Multixperience	2. <u>Total Experience</u>	2. <u>Cybersecurity Mesh</u>
3. Democratization of Expertise	3. <u>Privacy-Enhancing Computation</u>	3. <u>Privacy-Enhancing Computation</u>
4. <u>Human Augmentation</u>	4. Distributed Cloud	4. Cloud-Native Platforms
5. <u>Transparency & Traceability</u>	5. Anywhere Operations	5. Composable Applications
6. <u>The Empowered Edge</u>	6. <u>Cybersecurity Mesh</u>	6. Decision Intelligence
7. <u>Distributed Cloud</u>	7. <u>Intelligent Composable Business</u>	7. Hyperautomation
8. <u>Autonomous Things</u>	8. AI Engineering	8. AI Engineering
9. <u>Practical Blockchain</u>	9. Hyperautomation	9. <u>Distributed Enterprises</u>
10. <u>AI Security</u>		10. <u>Total Experience</u>
		11. Autonomic Systems
		12. Generative AI

<https://www.gartner.com/en/newsroom/press-releases/2019-10-21-gartner-identifies-the-top-10-strategic-technology-trends-for-2020/>

<https://https://www.gartner.com/smarterwithgartner/gartner-top-strategic-technology-trends-for-2021/>

<https://www.gartner.com/en/information-technology/insights/top-technology-trends>

Direct connection
Indirect/secondary connection



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Today's Top Priorities

McKinsey Global Survey on CxO productivity, 2021

Manufacturers see digitization, AI, and automation as top drivers of productivity and profitability for the coming three years.

Productivity drivers that will most affect profitability by 2024, by priority ranking, % of companies that selected driver as priority¹ (n = 1,004)

	Ranked 1st	Ranked 2nd	Ranked 3rd
Digitization, AI, automation, and tech enablement	39	18	13
Operations processes	20	26	12
People and organization	17	16	18
Resilience and operational agility	11	16	15
ESG ²	13	15	9

¹Question: Which of the following productivity drivers do you believe will most positively affect your company's or business line's profitability in the next 3 years?
²Environmental, social, and governance.
Source: McKinsey Global Survey on CxO productivity, 2021

<https://www.mckinsey.com/business-functions/operations/our-insights/the-ceo-architect-of-the-new-operations-agenda>



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Change Is Afoot

Major change is underway in leading industries...here's one example

Office of the Under Secretary of Defense, Research & Engineering

DEWG-COP Quarterly Highlights

Ms. Philomena Zimmerman
Director, Digital Engineering, Modeling &
Simulations

March 17, 2022



DEWG-COP Quarterly Highlights

- Philomena Zimmerman, Director of Digital Engineering & Modeling, Simulation retirement effective March 25, 2022
- Organization Name Change to Digital Engineering & Modeling, Simulation (DE&MS)
- Introducing LT Col Vince Rae as acting DEM&S Lead until a replacement is hired
- Still awaiting OUSD(R&E) Reorganization Announcement
- Digital Engineering Quarterly Newsletter has been released
- To support the adoption of Digital Engineering in the Department, OUSD(R&E) is developing a new instruction (policy) on Digital Engineering implementation
- Digital Engineering Fundamental has been revised and is available for public release
- Digital Engineering Body of Knowledge (DEBoK) launched on February 22, 2022. It is available to all DoD CAC users on the Defense Technical Information Center (DTIC).

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Other Areas of Activities

Just a few word on a few other areas of accelerated PLM-related investment to keep your eyes on

- Enterprise platform implementations for digital thread/twin enablement
 - e.g., Aras, CONTACT, Cassini, Dassault Systèmes, and Siemens*
- Development OEM agreements
 - e.g., Aras and CONTACT*
- Movement to full cloud-enablement and SaaS delivery
 - e.g., Aras, Dassault Systèmes, Oracle, SAP, and Siemens*
- Continued acquisitions (much more on this later)*
 - Accenture bought at least 50 companies last year, w/2 impacting their PLM revenues
 - Atos expanding their PLM reach with Processia and IDEAL GRP
 - Autodesk acquired Upchain
 - Hexagon buying Infor's EAM business and Koch Industries buying 4.9% of Hexagon

*not an all-inclusive list.

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Agenda

State of PLM: Today's Market & Leading Trends

- What's New from CIMdata
- 2021: The Year in Review
- 2022: Today's Trends & Challenges
- Looking Towards the Future
- Sustainability: PLM Essential to Facing this Global Challenge
- Concluding Remarks

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Sustainability: PLM Essential to Facing this Global Challenge (1 of 3)

- The Earth is billions of years old, but until relatively recently, Humans had little significant impact on the natural world...unfortunately this all changed
 - The Industrial Revolution was powered by coal and then oil
- Petroleum once referred to as "nature's treasure chest," has indeed offered a Pandora's Box of benefits
 - Oil is the primary user of hydrocarbons, but they are also the raw material for pharmaceuticals, solvents, fertilizers, pesticides, and plastics
- Today, plastics are just over 100 years old (1907), but about 44% of all plastics ever made have been made since 2000 and about 40% for single-use
 - No wonder we have large floating islands of plastics spinning in the North Pacific, South Atlantic, South Pacific, and the Indian Ocean

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Sustainability: PLM Essential to Facing this Global Challenge (2 of 3)

- In the 1960s, companies began implementing corporate social responsibility programs to address social issues, including the environment & sustainability
 - The Club of Rome and the Circular Economy
- Today's Industry 4.0 vision was developed, in part, to address the negative impacts of Industry 3.0 dating back to the Industrial Revolution
- Today, most would agree, PLM is essential to a systemic response to minimizing or even solving many of today's sustainability problems
 - It is inherently a system of systems problem that can leverage the same techniques, methods, processes, and solutions need to develop smart connected products
- Leading PLM software & service providers are defining the needed metrics, measurement approaches, and enabling technology for their clients

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Sustainability: PLM Essential to Facing this Global Challenge (3 of 3)

- CIMdata sees efforts reflected in the requirements and actions of our industrial consulting clients
 - Many of those clients are leveraging ideas like the Circular Economy to help ensure minimum environmental impact
 - Many companies need new ways to capture the needed data and measure their results and potential impacts
- In this industry-leading Forum, CIMdata will...
 - Frame the Sustainability Imperative
 - Discuss the issues faced by industry to best respond to these new requirements
 - How is the global PLM Economy responding to these requirements?
 - How well are their industrial clients achieving their sustainability objectives?

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Sustainability Has Always Been a Lifecycle Issue

Sustainability is a visible part of the entire lifecycle

Sustainability...

Re-use
Re-purpose
Re-mfg.
Re-cover
Re-cycle
Re-tire
Recycling

Portfolio Management Planning Conceptual Design Product Engineering Manufacturing Engineering Simulation & Validation

Build & Produce Test & Quality Sales & Distribution Commissioning & In-service Operation Maintenance & Repair

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Sustainability...

Product & process innovation are critical for business success

- Integration between PLM and CRM, and other business solutions are often required
- Some of the major issues with with regards to sustainability:
 - Security
 - Process rigor
 - Collaboration & supplier integration
 - Traceability and reporting
- Opportunity for PLM solution providers to provide templates for compliance and other sustainability related protocols that make sustainability easy for customers in specific industries
 - Enablement of the digital thread, requirements mgt., data analytics, etc.

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Sustainability...Investment

The need to connect data sources and processes

- Today, this needs to be a major component of PLM initiatives
 - Many see this as a tool on the side
 - Others have been dealing with this for some time
- Remains immature
 - Medical—very good for compliance
 - CPG—better than most, especially food & beverage
 - Automotive—good when it comes to safety
 - Aerospace—excellent in regard to safety
 - High-Tech Elec.—it depends
 - ...



In the News

Select examples of what is being reported

A historic moment: the adoption of a mandate to negotiate a legally binding UN Treaty on plastic pollution



We applaud the decision taken at UNEA 5.2 yesterday, 2nd of March, agreed on the adoption of a mandate for an International Negotiating Group to develop a legally binding UN Treaty on plastic pollution that takes us closer to that becoming a reality.

<https://ellenmacarthurfoundation.org/news/the-adoption-of-a-mandate-to-negotiate-a-legally-binding-un-treaty>

Sustainability is at the heart of our business and fundamental to everything we do as a company.



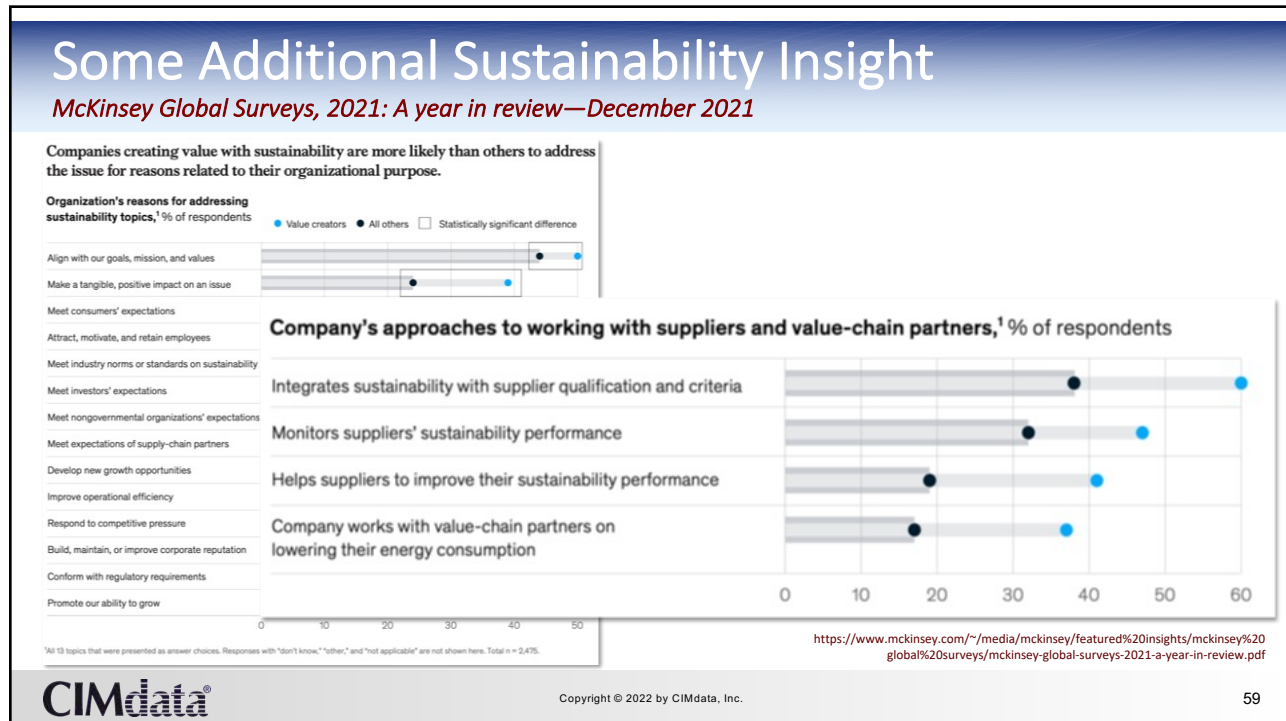
E Environmental	S Social	G Governance
<p>Achieve net zero carbon emissions before 2040</p> <p>Set 2030 science-based targets consistent with the most ambitious 1.5°C IPCC scenario</p> <p>Double customers' annual avoided emissions by 2030 through Johnson Controls' Operative digitally-enabled products and services</p> <p>Use 100% renewable energy by 2040</p> <p>Direct 70% of R&D investment on new product development to sustainable solutions</p> <p>Elevate sustainability as a key performance metric for preferred suppliers and create supplier sustainability council; provide training to help suppliers cut their emissions</p>	<p>Double the representation of women leaders globally and minority leaders in the United States within 5 years</p> <p>Launch initiative to educate next generation of diverse sustainable building industry leaders; partnering with HBCUs</p> <p>Launch an initiative focused on underserved markets and increase spend with women and minority owned businesses</p>	<p>Link executive compensation to sustainability and diversity goals to drive leadership accountability</p> <p>Maintain a Board diverse in gender, ethnicity, citizenship and skills</p> <p>Sustainability oversight elevated to Board of Directors (Governance & Sustainability Committee)</p> <p>Non-Financial reporting align with recommendations of the Task Force for Climate-related Financial Disclosures (TCFD)</p> <p>History of transparency: sustainability data publicly reported since 2002</p>

<https://www.achnews.com/articles/144400-johnson-controls-announces-sustainability-commitments>



State of PLM: Today's Market & Leading Trends

2022 CIMdata PLM Market & Industry Forum



Today's Agenda

2022 PLM Market & Industry Forum (1 of 2)

- 8:30 a.m. – 8:45 a.m. | **Welcome**
- 8:45 a.m. – 10:15 a.m. | **The State of PLM – Today's Market and Leading Trends**
Peter Bilello, President & CEO, CIMdata
- 10:15 a.m. – 10:30 a.m. | **Networking Break**
- 10:30 a.m. – 12:00 p.m. | **2021 Market Analysis Results**
Stan Przybylinski, Vice President, CIMdata
- 12:00 p.m. – 1:15 p.m. | **Networking Lunch**

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State of PLM: Today's Market & Leading Trends

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Today's Agenda

2022 PLM Market & Industry Forum (2 of 2)

- 1:15 p.m. – 3:00 p.m. | **Sustainability & PLM**
 - 1:15 p.m. – 1:50 p.m. | **The Sustainability Imperative**
Stan Przybylinski, Vice President, CIMdata
 - 1:50 p.m. – 2:25 p.m. | **Sustainability & PLM**
Tom Gill, Senior Consultant, CIMdata
 - 2:25 p.m. – 3:00 p.m. | **Enabling Sustainability in the PLM Economy**
Stan Przybylinski, Vice President, CIMdata
- 3:00 p.m. – 3:15 p.m. | **Networking Break**
- 3:15 p.m. – 4:15 p.m. | **Updates on Key Topics**
 - 3:15 p.m. – 3:45 p.m. | **The Multi-View BOM Potential**
James Roche, A&D Practice Director, CIMdata
 - 3:45 p.m. – 4:15 p.m. | **Enterprise Application Architecture: A Valuable Enterprise Framework**
Peter Bilello, President & CEO, CIMdata
- 4:15 p.m. – 4:30 p.m. | **Closing Comments**



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Concluding Remarks

The market continues to expand and evolve—differentiation is key

- The global PLM economy is growing and continues to add value
- Multiple disconnects still exist, e.g., PLM vs. DT, outside-in vs. inside-out, and managements narrow understanding of lifecycle management
- To be successful, companies need to transform people, processes and technologies—there are at least 12 critical elements
- The digital thread is really a digital web—key to true E2E traceability
- Sustainability is a lifecycle issue that offers significant opportunities for all
- The PLM user community is evolving its thinking and so are the leading PLM solution providers
- The future is looking bright when it comes to broader PLM adoption

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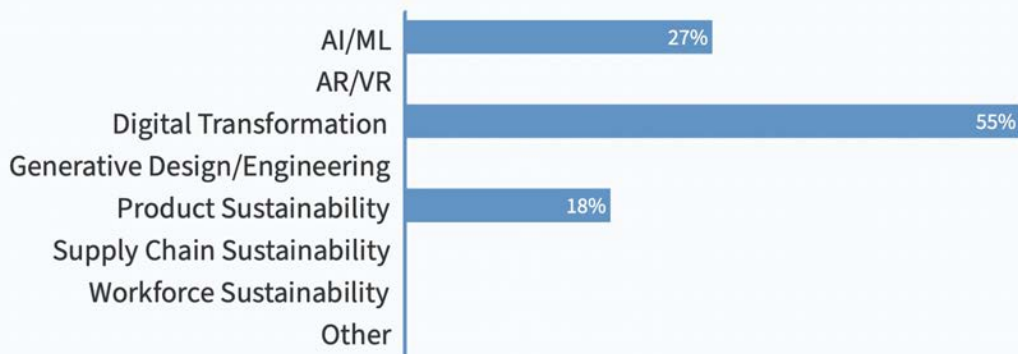
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PLM Foresight Forum Poll

Which do you think is or will have a bigger impact on the PLM economy over the next few years?

Which do you think is or will have a bigger impact on the PLM economy over the next few years?



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