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# The Digital Thread, Data, and How to Move Beyond Documents

PLM Road Map™ & PDT North America 2024

*Value Drivers for Digitalization of the Product Lifecycle*

*Insights for the PLM Professional—Why the investment, what are the returns, and how are they achieved?*

May 8 & 9

CIMdata

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## Challenges



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## Data governance and ownership

- Digital thread
  - Cross domain
  - Cross budget
  - Cross decision makers
- Siloed information
  - Between disciplines and domains
  - Locked in documents
  - Lack of contracting of data when shared cross domains
- Unclear ownership

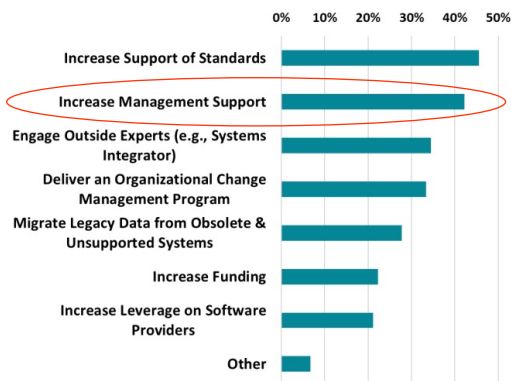


Figure 14—Proposed Means for Mitigation of Inhibitors to Formulating and Executing a Digital Strategy

Figure 14 - Digital Thread in Aerospace and Defence – CIMdata - <https://www.eurostep.com/digital-thread-in-aerospace-and-defense-ebook/>



## Data literacy

- Siloed knowledge
- Lack of understanding of the digital thread
  - Why having a digital thread?
- Communication
- Education

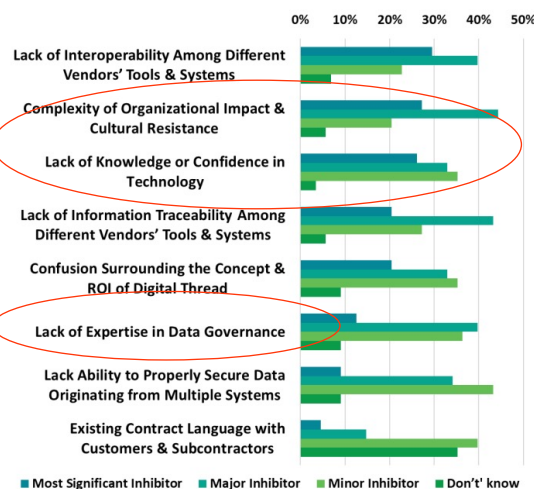


Figure 13—Principal Inhibitors to Formulating and Executing a Digital Strategy

Figure 13 - Digital Thread in Aerospace and Defence – CIMdata - <https://www.eurostep.com/digital-thread-in-aerospace-and-defense-ebook/>



# Data quality / data interoperability

- Quality of data within a domain/silo
  - Processes
  - Authoring tools
    - UI/UX
    - Validations
- Quality of data cross domains/silos/enterprises
  - Structured and verifiable links between data missing - Logically the links are there
  - No contracting for information (esp. in the extended enterprise)
  - Integrations and verification
  - Master data / source not identified

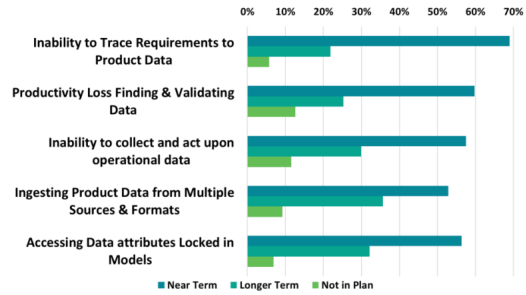


Figure 11—Top 5 Pain Points Being Targeted in Future Digital Thread Implementations

Figure 11 - Digital Thread in Aerospace and Defence – CIMdata - <https://www.eurostep.com/digital-thread-in-aerospace-and-defense-ebook/>



# A way forward

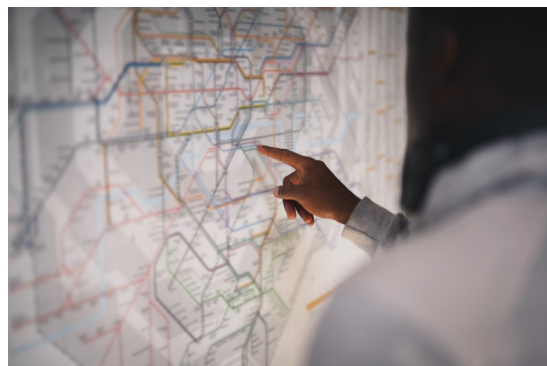


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## PLCS (ISO 10303-239)

- “Data literacy” using PLCS
  - As a foundation for training – spreading knowledge
  - As a communication base for the overall strategy – Silos vs. consolidated view
- Digital thread strategy
  - As a map for how information fit together
    - Preventing lock-in
  - A roadmap for the digital thread strategy
- Foundation for domain models and business glossaries



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## Contracting for information

- Where?
  - Within the organization
  - For collaboration with external parties
- Data/Information contracts
  - Moving from a document centric approach to a structured data approach
  - Specified need instead of "Deliver on standard xyz"
- Tooling
  - Internal integrations
  - Collaboration platforms
    - Help external party delivering information of high quality
- Validation and integration
  - Tooling support for validating information deliveries before integrating information with inhouse systems

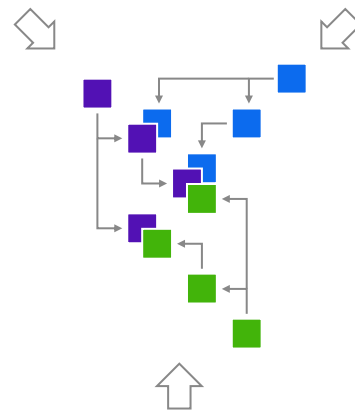


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## Consolidate information

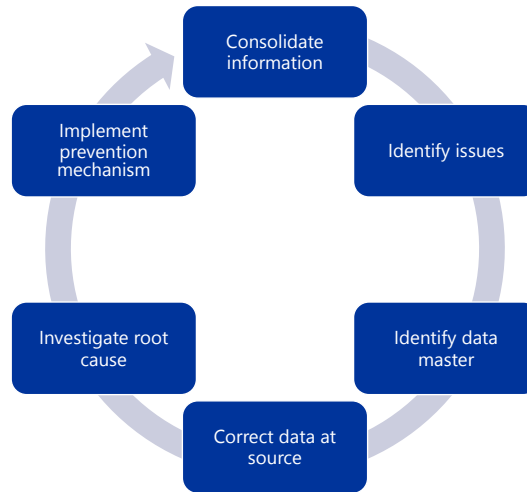
- The process of creating structured and verifiable information links
- Creating the digital web
- Identify sources (systems, etc.)
  - System can be actual IT-systems like PLM or ERP but could also be documents
- Mapping to business domain model
  - Information standards can be of great help
- Be aware of new challenges (and opportunities)
  - Non secret could become secret
  - Who has access, when, etc.
  - Will expose data quality issues



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## Handling data quality issues



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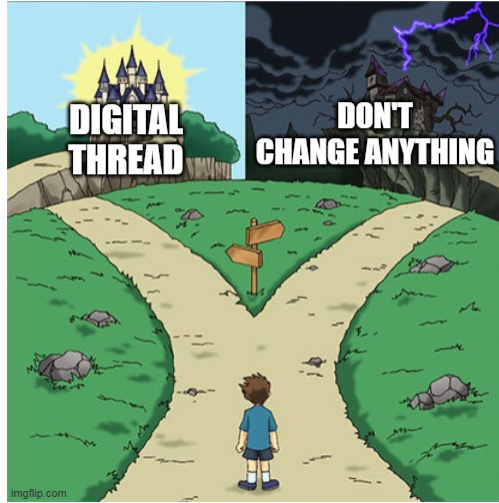
## What about the legacy documents?

- Are not structured
- Silos of data
- For new things (Contracting)
  - Structured document deliveries
  - Document deliveries picked apart and structured data created
  - Structured information deliveries
- For legacy documents
  - Full text indexing
  - Search documents from contextual structured data
  - Re-create structured information using document scraping approaches
    - Algorithms
    - ML -- AI

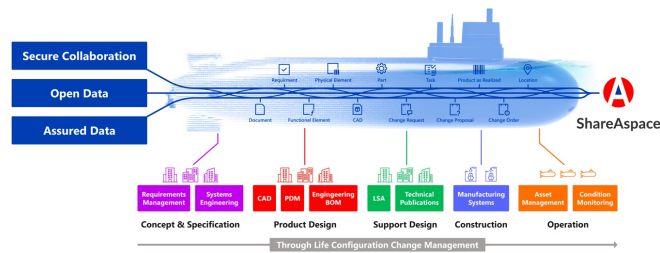


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# Thank you .... any questions?



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