**BOM PIM CURRENT PROJECT IMPACT TO PAIN POINTS with Explanations - Final 072225**

**EBOM to MBOM Project**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | The project creates a global packaging library and makes it easier to find/locate existing MBOMs for reuse, providing moderate search improvements but not addressing all component search needs |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 3 | Directly addresses this by digitally linking EBOM and MBOM systems, creating synchronized data flow between Teamcenter and SAP, though other systems remain unconnected |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 3 | Implements standardized MBOM creation process using Teamcenter Easyplan, harmonizes approach across plants, and establishes consistent workflows |
|  | Lack of standard approach of how part information is organized | 2 | Standardizes MBOM part organization and creates global libraries, but doesn't fully address all part information organization across systems |
|  | Lack of ability to manage variants and options for a product/product family | 2 | Future capability mentions Variable configurator for 150% BOMs, but current scope provides moderate variant management through improved BOM structure |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 3 | Eliminates manual Excel export/import between EBOM and MBOM, automates MBOM line item creation, and provides digital transformation of the process |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 3 | Implements automated MCN process, unified change management for BOMs company-wide, and provides bidirectional change communication |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 2 | Core objective is digitally linking EBOM to MBOM with alignment checks, though cBOM connection not explicitly addressed |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 2 | Provides digital MBOMs in Teamcenter accessible to plants, establishes an opportunity but doesn’t explicitly define the business process for eliminating paper-based processes and ensuring current information |
|  | Incomplete/incorrect/missing part information | 2 | Visual indicators and alignment checks help identify missing information, but doesn't directly populate missing data |
|  | Incomplete/incorrect/missing material master information | 1 | Improves material master consistency through standardized processes but doesn't directly address data completeness |
|  | Lack of standard approach for material master data governance | 1 | Standardizes MBOM approach which impacts material masters, but specific MM governance not primary focus |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 3 | Creates single source of truth by digitally linking systems and implementing EBOM-MBOM alignment checks |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 2 | Primary objective is creating digital thread between EBOM and MBOM with future plans for BOP/BOE integration. The CBOM is not in scope for this project. |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 3 | Directly connects and synchronizes EBOM (Teamcenter) and MBOM (SAP/Teamcenter) data |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 2 | Moves from document-based to system-based BOM management, though some document dependencies may remain |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 3 | Key objective is harmonizing MBOM approach across all plants, eliminating silos and ensuring seamless data flow |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 1 | Standardizes a minimal portion of the MM processes through MBOM harmonization but MM creation not primary focus |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 2 | Provides tools and processes for MBOM variants, with future Variable configurator capability planned |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 3 | Implements single change management process company-wide with MCN workflows in Teamcenter |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 1 | Improves traceability through BOM change tracking, but specific MM revision control not addressed |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 3 | Enables bidirectional change communication - plants can communicate MBOM changes back to PD |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 2 | Standardizes internal change processes which should improve PCN, though PCN integration out of scope |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 3 | Implements standardized MBOM creation, organization, and maintenance processes across all plants |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 2 | The scope of the project should include a training program for deployment and an on-going |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | Improves MBOM reuse and creates searchable global libraries, partially addressing component reuse |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 3 | Real-time EBOM-MBOM linkage and visual indicators ensure manufacturing knows when designs are production-ready |
|  | Lack of effective communication regarding the readiness of NPI parts | 3 | Digital thread and automated notifications improve NPI communication between PD and manufacturing. This requires a workflow that informs manufacturing of all elements required for production readiness. |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 2 | Establishes clear MBOM processes and workflows but doesn't fully address governance structure for all part information management. |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 1 | Acknowledges "Huge OCM Effort" as a risk but doesn't provide comprehensive adoption strategy |

**UBOM**

Pain Points Impact Analysis Table for UBOM Phase 1 Project

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | EBOM content becomes searchable in Teamcenter, enables "where used" functionality, and directly encourages component reuse |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 2 | Connects Teamcenter EBOM to SAP UBOM automatically, but doesn't address all systems mentioned (SharePoint, Molex.com, etc.) |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 2 | Standardizes EBOM to UBOM flow and provides starting point for MBOM creation, but doesn't fully standardize BOM creation approach |
|  | Lack of standard approach for how part information is organized | 2 | Establishes standard UBOM structure from EBOM, but doesn't redesign part organization |
|  | Lack of ability to manage variants and options for a product/product family | 1 | Minimal impact - focuses on training for existing UBOM capabilities rather than variant management features |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 2 | EBOM data typed only once and automatically pushes to UBOM, eliminating duplicate data entry between systems. The MBOM still must be manually created from the UBOM. |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 2 | Semi-automated change management for Teamcenter changes impacting UBOM, but not fully automated |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 2 | Connects EBOM to UBOM (starting point for MBOM), but digital UBOM-MBOM connection explicitly out of scope |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 1 | Provides digital UBOMs in SAP for plants to use, reducing reliance on paper, though MBOM digitization not included |
|  | Incomplete/incorrect/missing part information | 3 | Ensures all EBOM components are accurately transferred to UBOM, preventing missing information in the transfer |
|  | Incomplete/incorrect/missing material master information | 2 | A portion of SAP Material Master basic views are automatically created for all EBOM items, ensuring there’s a MM for every component. |
|  | Lack of standard approach for material master data governance | 1 | Automates a portion of the MM basic view creation from the EBOM, providing some standardization but not comprehensive governance |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 2 | Ensures EBOM-UBOM consistency through automatic updates, but doesn't address all system inconsistencies |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 1 | Creates EBOM to UBOM integration, which is part of the digital thread, but UBOM-MBOM link and CBOM are out of scope |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 2 | Synchronizes EBOM (Teamcenter) with UBOM (SAP) automatically, partially addressing scattered information |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 1 | Minimal impact - There isn’t a focused effort on reducing document dependency |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 2 | Training standardizes UBOM usage across plants, providing common starting point for MBOM creation |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 1 | Automates and standardizes a portion of the MM basic view creation from EBOM creating a minimal level of impact across the plants. |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 1 | Training-focused project doesn't add new variant management capabilities |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 2 | EBOM changes automatically reflect in UBOM after Design Review, reducing manual change tracking |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 1 | Provides some traceability through EBOM-UBOM linkage but doesn't add MM revision control |
|  | Disconnect and lack of traceability between changes to mBOM thatmight affect the eBOM | 1 | One-way flow from EBOM to UBOM; MBOM to EBOM feedback not addressed |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 1 | PCN integration explicitly out of scope; minimal indirect impact through better UBOM usage |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 2 | Training provides standard approach for using UBOMs as MBOM starting point |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 2 | Primary focus is developing and delivering comprehensive UBOM training to all relevant plants |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | Makes EBOM content searchable and explicitly encourages component reuse through UBOM visibility |
| Manufacturing-Specific Issues | Lack of effective communication regarding production readiness | 2 | Teamcenter notifies plant coordinators when EBOM is updated or ready for production release |
|  | Lack of effective communication regarding the readiness of NPI parts | 2 | Manufacturing gets early insight (Phase 2-3) on materials/components in EBOM through UBOM. Production readiness is only partially addressed in Teamcenter today. |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 1 | Training improves usage but doesn't establish governance structure or ownership models |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 2 | Addresses adoption through training and C3 involvement in identifying appropriate plants |

**Charted Drawings Project**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Directly addresses this by making attributes searchable in PLM instead of static text in drawings, enabling data reuse and "where used" functionality |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 2 | Connects PLM attributes to SAP Material Masters, but doesn't address all systems mentioned |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 2 | A meaningful step towards leveraging Teamcenter EBOMs which is much more structured than BOM information added to drawings |
|  | Lack of standard approach of how part information is organized | 3 | Replaces unstructured charted drawing tables with standardized PLM attributes, creating consistent part information organization |
|  | Lack of ability to manage variants and options for a product/product family | 3 | Core objective - enables variant management through PLM attributes and product configurators instead of static charts |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 3 | Product configurators can automatically create drawings, models, material masters, and eBOMs, eliminating manual entry |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 2 | Enables mass changes through PLM attributes vs. updating hundreds of individual drawings, though not full change management |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 2 | Communicates design intent more effectively in a Teamcenter EBOM and connects it to SAP in a UBOM |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 2 | EBOMs for all variants are communicated to the plants digitally. This is an incentive to leverage the digital thread. |
|  | Incomplete/incorrect/missing part information | 3 | Reduces errors from manual text entry in tables by using structured PLM attributes with validation |
|  | Incomplete/incorrect/missing material master information | 2 | Links PLM attributes to SAP Material Masters, improving data consistency but not completeness |
|  | Lack of standard approach for material master data governance | 1 | Provides some standardization through PLM attributes but doesn't establish governance framework |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 3 | Eliminates duplicate data between drawing tables and material masters by using single source PLM attributes |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 2 | EBOMs for all variants are communicated to the plants digitally. |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 2 | Centralizes variant/attribute data in PLM rather than scattered drawing files, partial synchronization with SAP |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 3 | Directly addresses by moving from document-based (drawings) to data-based (PLM attributes) approach |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 0 | No impact - project doesn't address eBOM to mBOM workflows |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 1 | A step towards enabling SAP Configurators that can automatically create material masters, providing some process standardization |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 3 | Primary focus - provides tools (PLM attributes, configurators) and processes for variant management |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 0 | No impact - focuses on drawings/attributes rather than EBOM/MBOM change management |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 1 | Links attributes to MMs but doesn't add revision control capabilities |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 0 | No impact - project scope doesn't include MBOM/EBOM change tracking |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 2 | Mass change capability for attributes could improve PCN efficiency when material changes affect many products |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 2 |  |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 2 |  |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Searchable PLM attributes enable finding and reusing components with specific characteristics |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 1 |  |
|  | Lack of effective communication regarding the readiness of NPI parts | 1 |  |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 1 | Provides some structure through PLM attributes but doesn't establish governance framework |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 1 | Mentions need for "diligent manual maintenance" but doesn't address adoption strategy |

**Resin Selection Tool Project**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Directly enables searching for resins used in previous products through "where used" functionality and TeamCenter integration |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 3 | Consolidates resin data from Granta, EDP, TeamCenter, GRTS, M&O, and Supply Chain systems into single application |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 1 | Minimal impact - focuses on material selection rather than BOM structure |
|  | Lack of standard approach of how part information is organized | 2 | Standardizes resin selection process and material part number organization across all BUs |
|  | Lack of ability to manage variants and options for a product/product family | 2 | Enables "what if" scenarios for alternative resins, supporting variant management indirectly |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 2 | Automates resin selection process, reducing manual research and data entry for material specifications |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 1 | Minimal impact - focuses on selection rather than change management |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 0 | No impact - doesn't address BOM connectivity |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 0 | No impact - focuses on design phase material selection |
|  | Incomplete/incorrect/missing part information | 2 | Identifies data gaps in material attributes, though data completeness is noted as an assumption/risk |
|  | Incomplete/incorrect/missing material master information | 1 | Standardizes material selection which should improve material master quality over time |
|  | Lack of standard approach for material master data governance | 2 | Creates standardized approach for resin material masters through consistent selection process |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 3 | Creates single source of truth for resin selection by integrating multiple data sources |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 0 | No impact - doesn't address BOM integration |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 3 | Core objective - connects Granta, EDP, TeamCenter, GRTS, M&O, and Supply Chain data |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 2 | Moves from document-based material selection to digital application with structured data |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 1 | Minimal impact - standardizes material selection but not eBOM/mBOM processes |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 2 | Creates "One Molex" resin selection process, eliminating BU-specific approaches |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 2 | Provides tool for material alternatives but not comprehensive variant management |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 0 | No impact - doesn't address EBOM/MBOM changes |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 1 | Tracks material selection decisions but doesn't add MM revision control |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 0 | No impact - focuses on initial selection rather than change tracking |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 2 | "What if" scenarios could help identify alternative materials for PCNs more efficiently |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 1 | Minimal impact - standardizes material selection aspect only |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 2 | Requires significant rollout and training effort but doesn't establish ongoing program |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Saves PDEs 1-10 hours/year through improved resin search and reuse capabilities |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 0 | No impact - focuses on design phase material selection |
|  | Lack of effective communication regarding the readiness of NPI parts | 0 | No impact - doesn't address NPI communication |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 2 | Establishes governance for resin selection with clear SME ownership and standardized process |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 2 | Identifies adoption risk and includes rollout phase, but success depends on PDE conversion |

**Master Data Nexus Project**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | Provides visibility into part setup status and enables tracking, but primary focus is on master data enrichment rather than component reuse |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 3 | Directly addresses by integrating SAP and Teamcenter through centralized MDN platform, replacing scattered email/SharePoint workflows |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 2 | Standardizes master data enrichment process which impacts BOM creation, though BOM structure not primary focus |
|  | Lack of standard approach of how part information is organized | 3 | Implements stage-wise workflow (Concept, Prototype, Production) with standardized data enrichment process across all BUs |
|  | Lack of ability to manage variants and options for a product/product family | 1 | Minimal impact - focuses on master data setup rather than variant management |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 3 | Automates Material Master enrichment using predefined attributes and APIs, eliminating manual data entry |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 2 | Replaces manual email/SharePoint processes with automated workflows and notifications through MDN platform |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 1 | Connects Teamcenter (eBOM) to SAP for master data, improving BOM connectivity though not full BOM integration |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 1 | Minimal direct impact - focuses on master data setup rather than plant BOM availability |
|  | Incomplete/incorrect/missing part information | 3 | Ensures Critical Data Elements (CDE) are captured at right stages, with validation and governance |
|  | Incomplete/incorrect/missing material master information | 3 | Core objective - ensures complete Material Master setup with all required views and attributes |
|  | Lack of standard approach for material master data governance | 3 | Establishes Master Data Stewards to govern process with centralized oversight and data quality controls |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 3 | Creates single source of truth through MDN platform, eliminating duplicate workflows and data inconsistencies |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 1 | Limited BOM integration - focuses on master data rather than BOM connectivity |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 3 | Seamlessly integrates ERP and PLM tools (SAP and Teamcenter) with bi-directional data flow |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 2 | Moves from document/email-based processes to digital platform with real-time tracking and updates |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 2 | Harmonizes master data processes across BUs, indirectly supporting BOM harmonization |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 3 | Primary objective - implements "One Molex" approach for standardized MM creation across all plants/BUs |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 1 | Minimal impact - doesn't address variant management capabilities |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 2 | Reduces redundancy in master data management, though EBOM/MBOM change management not primary focus |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 2 | Provides audit trails and tracking through MDN platform, improving traceability |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 1 | Limited impact - focuses on master data rather than MBOM-EBOM change tracking |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 3 | Reduces PO acknowledgment time from weeks/months to 24-48 hours, improving customer responsiveness |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 2 | Standardizes master data aspects of BOM creation but not comprehensive BOM management |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 1 | Mentions training needs but doesn't establish comprehensive program |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | Dashboard provides visibility into part status and setup progress, supporting better decision-making |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 2 | Stage-based enrichment clearly communicates when parts move from Prototype to Production readiness |
|  | Lack of effective communication regarding the readiness of NPI parts | 2 | Automated notifications and real-time tracking ensure stakeholders know NPI part status immediately |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 2 | Establishes Master Data Stewards as governing body with clear ownership and accountability |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 2 | Identifies need for alignment and migration from current methods, but OCM strategy not fully detailed |

**Parts Management Connect to Requirements Project**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | Directly addresses through "Part Design Reuse" value driver ($0.83M) and "Search Time Reduction" ($0.23M) |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 2 | Core objective - creates digital thread linking Polarion (RM) and Teamcenter (Parts Management) to eliminate disconnected systems |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 1 | Establishes structured approach through integrated requirements-to-parts workflow, indirectly standardizing BOM creation |
|  | Lack of standard approach of how part information is organized | 2 | Creates standardized information architecture for data collection, storage, and management across the organization |
|  | Lack of ability to manage variants and options for a product/product family | 1 | Improved traceability from requirements to parts supports variant management, though not primary focus |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 2 | Addresses "Data Reentry Reduction" value driver ($0.20M) by eliminating manual data transfer between systems |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 2 | "Change Process Efficiency" value driver ($0.77M) - automatically propagates requirement changes to parts |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 1 | Creates foundation for BOM connectivity through requirements linkage, enabling future BOM integration |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 1 | Limited direct impact - focuses on requirements-to-parts link rather than plant floor BOM availability |
|  | Incomplete/incorrect/missing part information | 2 | Ensures parts align with defined requirements, reducing errors and improving data completeness |
|  | Incomplete/incorrect/missing material master information | 1 | Improves data quality through requirements traceability but doesn't directly manage material master |
|  | Lack of standard approach for material master data governance | 1 | Minimal impact - focuses on requirements-parts link rather than material master governance |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 2 | Creates single source of truth by integrating Polarion and Teamcenter, eliminating data inconsistencies |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 1 | Establishes foundational digital thread capability necessary for future BOM integration |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 3 | Primary objective - creates seamless integration between requirement management and parts management systems |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 2 | Moves from document-based to integrated digital systems with real-time data flow and traceability |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 1 | Creates foundation for harmonization through standardized requirements-to-parts process |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 1 | Limited impact on material master creation - focuses on requirements-parts linkage |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 1 | Improved requirements management supports variant tracking but doesn't provide specific variant tools |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 2 | Automatic propagation of requirement changes reduces redundancy and ensures alignment |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 1 | Minimal direct impact on MM revision control |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 1 | Establishes end-to-end traceability from requirements through parts lifecycle |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 1 | Improved change management and traceability supports PCN process efficiency |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 1 | Provides structured approach to product development process, supporting BOM standardization |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 0 | Training identified as TBD - not addressed in current scope |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | "Part Design Reuse" value driver enables faster product development and reduces redundant design efforts |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 2 | Enhanced collaboration and real-time data sharing improves production readiness communication |
|  | Lack of effective communication regarding the readiness of NPI parts | 2 | Seamless traceability ensures NPI part requirements are clearly communicated through lifecycle |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 2 | Establishes governance framework for IT investments and decision-making, though implementation TBD |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 2 | Identifies adoption risks and proposes mitigation through workshops, training, and pilot programs |

**Combined Cognite AI & Part Centric Projects**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Part Centric creates digital thread linking all design info to parts; Cognite AI enables natural language search via chatbot interface |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 3 | Part Centric links all digital assets to parts across systems; Cognite links 4000+ documents to part numbers |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 2 | Part Centric links EBOMs to parts and establishes governance; indirect impact on BOM standardization |
|  | Lack of standard approach of how part information is organized | 3 | Part Centric creates structured taxonomy; Cognite digitizes attributes in standardized format |
|  | Lack of ability to manage variants and options for a product/product family | 2 | Improved part information organization supports variant management, though not primary focus |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 2 | Cognite automates extraction of data attributes from PDFs; Part Centric eliminates manual searching |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 2 | Digital thread enables better change tracking; reduces manual coordination across systems |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 1 | Part Centric explicitly links eBOM, cBOM, and mBOM to parts in priority stages |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 1 | Digital thread ensures current BOM info accessible; manufacturing info in Stage 4 |
|  | Incomplete/incorrect/missing part information | 3 | Cognite extracts missing attributes from documents; Part Centric ensures comprehensive linking |
|  | Incomplete/incorrect/missing material master information | 2 | Part Centric links procurement info; Cognite digitizes attributes for material master |
|  | Lack of standard approach for material master data governance | 2 | Part Centric establishes governance for digital links; supports material master standardization |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 3 | Part Centric creates single source of truth via part number; Cognite ensures consistent attribute data |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 1 |  |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 3 | Both projects focus on connecting disparate systems through part-centric digital thread |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 3 | Cognite digitizes document-based data; Part Centric links all documents to parts |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 2 | Digital thread reduces silos; Operations leading eBOM to mBOM transformation effort |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 2 | Standardized part information structure supports harmonization across plants |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 1 | Limited direct impact on variant management tools/processes |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 2 | Part Centric links all BOMs to parts, reducing redundancy in change management |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 2 | Digital thread improves traceability; version control through linked documentation |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 2 | Explicit linking of all BOMs to parts ensures change traceability |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 2 | Better access to part information and documentation speeds PCN process |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 2 | Part Centric establishes framework for BOM organization through part-centric approach |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 0 | Neither project addresses training programs |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Cognite chatbot enables quick natural language search; Part Centric ensures all info findable |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 2 | Stage 4 includes manufacturing info; improved access to production data |
|  | Lack of effective communication regarding the readiness of NPI parts | 2 | Digital thread provides visibility into NPI part status and documentation |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 3 | Part Centric explicitly addresses governance through GES, project teams, Change Specialists |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 2 | Both projects identify adoption risks; Part Centric emphasizes global adoption requirement |

**Parts Classification Project**

| Pain Point Type | Individual Pain Points | Impact | Impact Explanation |
| --- | --- | --- | --- |
| Search & Discovery Issues | Limited ability to easily/quickly search for and reuse Molex designed features and components | 3 | Improves classification and retrieval through automated DFR-TC integration |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized (ECTR, SAP, Molex.com, SharePoint, etc.) | 3 | Directly addresses DFR and Teamcenter integration, automating data transfer between systems |
| Duplication & Proliferation | Lack of standard approach of how BOM's are created and organized | 1 | Focuses on commercial parts classification, indirect impact on BOM organization |
|  | Lack of standard approach of how part information is organized | 3 | Implements standardized classification system for commercial parts in Teamcenter |
|  | Lack of ability to manage variants and options for a product/product family | 2 | Limited impact - focuses on commercial part classification rather than variant management |
| Data Entry & Manual Processes | Lack of automation results in extensive manual data entry for BOM's and part information | 2 | Reduces manual process time from 45 to 15 minutes per component (75% improvement) |
|  | Manual change mgmt process for BOM's and part information across multiple systems | 2 | Automates DFR to TC updates, reducing manual change management burden |
|  | Disconnected BOM management (ie: eBOM not connected to cBOM, cBOM not connected to mBOM, eBOM partially connected to mBOM, etc.) | 1 | Focuses on commercial parts, limited direct impact on BOM connectivity |
| Data Integrity & Quality Issues | Lack of digital BOM's available in plants resulting in potential quality issues (ie: Paper BOMs on shop floor no longer valid) | 0 | Does not address plant-level BOM digitization |
|  | Incomplete/incorrect/missing part information | 3 | Implements validation checks to ensure classification accuracy before pushing to TC |
|  | Incomplete/incorrect/missing material master information | 2 | Improves commercial part data quality through automated classification |
|  | Lack of standard approach for material master data governance | 2 | Establishes standardized process for commercial part classification and governance |
|  | Inconsistency/Duplication between systems resulting in unreliable information (ie: multiple sources of truth) | 3 | Ensures data integrity across DFR and Teamcenter systems through automation |
| System Integration Problems | Lack of integration of digital thread between different BOM's (ie: eBOM to mBOM, cBOM to eBOM) | 1 | Limited to commercial parts integration, not full BOM integration |
|  | Part information scattered across multiple systems/data sources and not connected/synchronized | 3 | Core objective - integrates DFR database with Teamcenter seamlessly |
|  | Due to Molex's dependency on documents, the ability to update/locate/refine our data is very difficult | 2 | Improves data accessibility through automated classification and integration |
| Process & Workflow Inefficiencies | Lack of harmonization of an eBOM to mBOM approach (people/process) across plants creates silos and disrupts data flow between departments | 1 | Does not address eBOM to mBOM harmonization |
|  | Lack of harmonization of material master creation (people/process) across plants creates silos and disrupts data flow | 2 | Standardizes commercial part classification process globally through GES team |
|  | Lack of business process (and possibly tools) to manage variants and options for a product/product family | 2 | Not focused on variant management |
| Change Management | Changes to EBOMs and MBOMs managed in different systems resulting in redundancy and overlap | 1 | Limited to commercial parts, not full BOM change management |
|  | Lack of traceability for Material Master changes (no revision control for MM's) | 1 | Improves traceability for commercial part changes through automated system |
|  | Disconnect and lack of traceability between changes to mBOM to might affect the eBOM | 0 | Does not address mBOM to eBOM change traceability |
|  | Inefficient and non-standardized application of PCN Process resulting in customer frustration | 2 | May improve commercial part change notifications through better data quality |
| Knowledge Management Issues | Lack of standard approach of how BOM's are created, organized and maintained | 2 | Focuses on commercial parts, limited BOM impact |
|  | No comprehensive/organized/standardized training programs leveraged on an ongoing basis | 1 | Does not address training programs |
| Business Impact | Limited ability to easily/quickly search for and reuse Molex designed features and components | 2 | Improves commercial part retrieval and classification efficiency |
| Manufacturing-Specific Issues | Lack of effective communication regarding the production readiness | 2 | Does not address production readiness communication |
|  | Lack of effective communication regarding the readiness of NPI parts | 2 | May improve commercial part readiness visibility |
| Organizational & Governance Gaps | Lack of data governance for BOM's and part information management. Unclear ownership and lack of formal process tools to enforce governance | 2 | Establishes governance for commercial part classification process |
|  | Poor execution of OCM and lack of business ownership for value creation resulting in poor adoption | 2 | Reduces vendor dependency and empowers internal teams with better tools |