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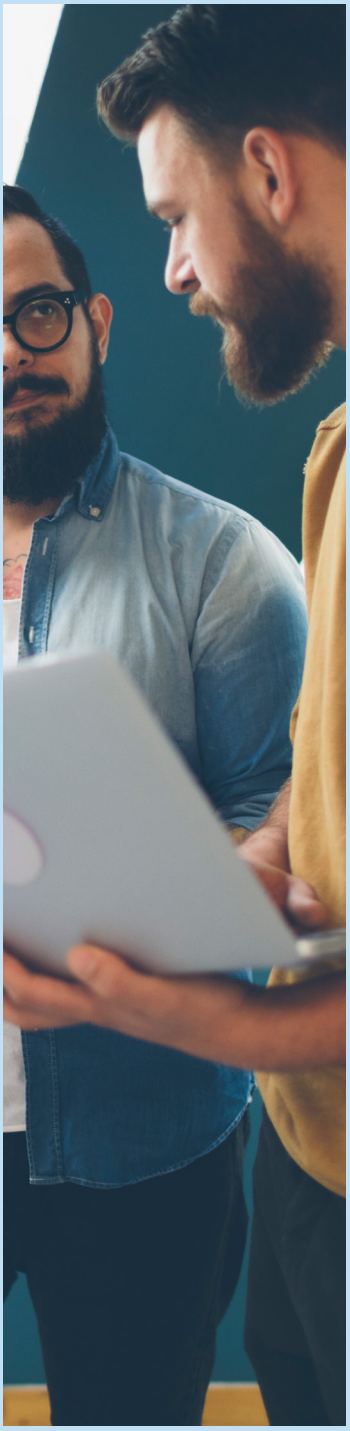

ACCELERATING DIGITAL TRANSFORMATION THROUGH THE INNOVATIVE, COLLABORATIVE INFOSYS ENGINEERING DIGITAL ACCELERATOR

Abstract

Smart product development and manufacturing are always key to a successful product enterprise. Today, the market demand for a product innovation is increasingly compulsive and competitive. Enterprises must embrace the best digital capabilities to deliver innovative products in short time to meet market requirements. Digital acceleration plays an important role in any enterprise's digital transformation. A huge challenge digitizing the sizeable volumes of information collected as specifications created over the last few decades across the organizations for new digital capabilities. The hub of new digital capabilities such as PLM or MES or ERP requires data from multiple structured and unstructured data sources to be carefully combined to form digital product definition. Infosys presents a collaborative machine learning (ML) based software platform with a unique digital acceleration method to support the digital transformation exercise.

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Background & Challenges

Today, digital transformation is inevitable, and global companies are fine-tuning digital capabilities for every technology disruption. The overall theme of digital transformation is either introducing or retrofitting digital capabilities. In turn, it redefines the product development methodology and the subsequent fitment of legacy data. Since process and technology continuously evolve along with the market requirements, legacy data becomes a non-negotiable pain point. Responsible data conversion or transformation is an unavoidable component of every digital transformation There are several aspects to consider when managing the data. First, the organizational data is split between metadata driven systems like ERP, PLM, and file driven systems like SharePoint, CAD, OpenText and Lotus Notes, mostly resulting in non-standard, conflicting or ambiguous data. In addition, model-based definitions are unavailable across various applications like CRM, PLM, ERP, SCM and MES. Second, the single source of truth of data is always unrealistic, especially when the data is authored in different systems, distributed to multiple systems and exists as either structured or unstructured data. Third, the regulatory policy changes are time critical. Hence new policies do not consider the impact on existing products. These typically end up being business friction points that can increase the product cost and delay product launches. Finally, the lack of data quality, connectedness and comprehensiveness also pose hurdles to digital transformation.

	Legacy data challenges	Outcomes
1	Large global organizations' R&D data is spread across multiple applications. Poor visibility of product specification	Inefficient digital transformation
2	Delayed merger or acquisition, lack of data harmonization methods, poor R&D synergy	Misaligned business process to current digital capabilities. unavoidable overheads.
3	Global commitment challenges, critical data dependency with suppliers, non-uniform approach to supplier data collection and missing supplier accountability on data	Incomplete digital transformation
4	Unstructured data spread across the organization, unavailable for search and analytics	Poor use of digital capabilities
5	Inconsistent and disconnected data with poor product traceability	Data duplication lowers data fidelity, increases ambiguity and the lack of part/document classification increases R&D overhead
6	Growing inconsistencies or conflicts with the same data across multiple systems and a reactive approach to issues.	Resistance to digital transformation and use of digital capabilities

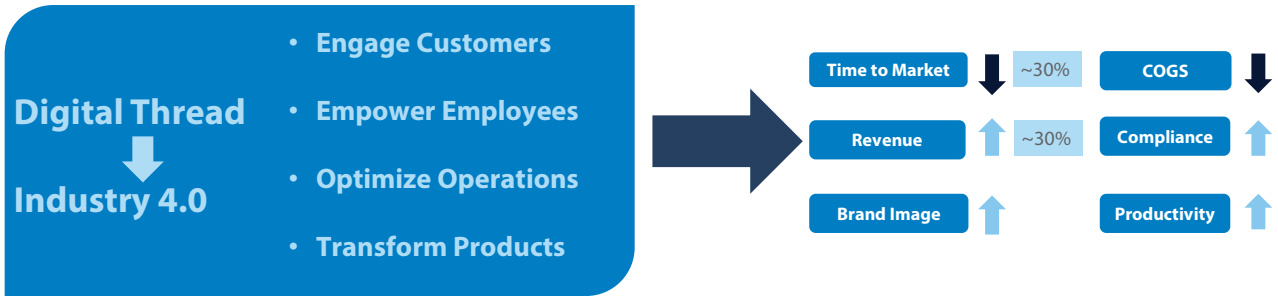
The Infosys Approach:

The foundation of digital transformation is a digital thread that demands a single data source collaboratively developed and enhanced by various disciplines or value streams throughout the product lifecycle. Hence digital transformation is always on the lookout for safer and faster methods to transform data, slowly attaining a friction-free, 360° comprehensively connected data view. The digital thread based digital transformation can boost revenue potentially by 30% and deliver time to market benefit of up to 30%

A **Connected Information :** The organizational data is split between Meta Data Driven Systems like ERP are integrated for live data exchange(Connected Information)

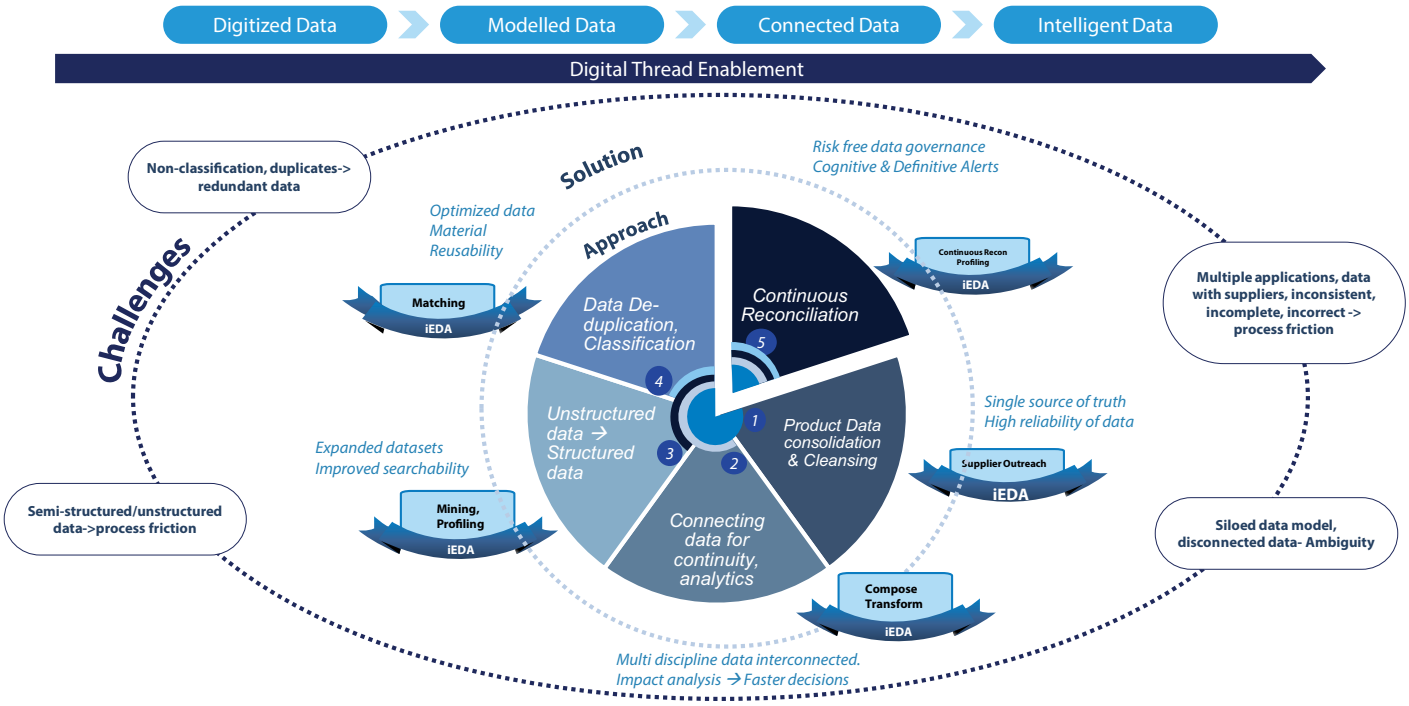
B **Modelled Information:** The model based definitions are available across the systems the various applications like CRM, PLM, ERP, SCM, MES etc

B **Comprehensive Information:** Rich set of information for decision making process



Infosys brings the proven innovative digital data accelerator platform as part of the digital transformation process. The platform has a unique approach with five interconnected steps that ensure the various personas are well connected to understand how 360° data views arrive collaboratively. Highlights of what the Infosys **Engineering Digital Accelerator(iEDA)** data platform offers –

1. **Product Data Consolidation -** consolidates data from various sources and maps it to the business object
2. **Connecting Data -** connect different objects to build product records
3. **Structured Data Conversion -** digitizes and maps to the respective business object without compromising data completeness and the single source of truth
4. **Data Optimization -** identifies the soft or hard duplicates, alternates and potential part classification and eliminates redundancies
5. **Continuous Reconciliation -** continuously monitors the digital data for its correctness and completeness and raises definitive or cognitive alerts to prevent process frictions



The Infosys Engineering Digital Accelerator(iEDA)

The iEDA platform aims to introduce a secured data consolidation technique involving data matching, mining and profiling. Data from multiple sources will be gathered and consolidated as a final set for the organization. Multiple sources of data at times can cause conflicts. Therefore, resolving these conflicts with accountability leads to a single source of truth.

Data mining helps to locate unstructured data in product specifications. Different R&D engineers would have published documents in their own style. In such scenarios, only important data would have been published. As an organization grows, the unpublished data or missing data becomes important. Natural Language Processing (NLP) and supervised Machine Learning based (ML) data mining is critical to accelerating digitization. The variables and values repeated in different unstructured documents will be identified through NLP and ML algorithms. The highest levels of accuracy and reliability of data extraction, data identification and data qualification are essential for successful digital transformation Data matching helps to optimize through interactive rule-based identification and subsequent cleansing. The optimization mainly helps to identify and remove redundancies such as duplicate parts, identify and publish alternate parts, and identify and classify similar parts. However, the bill of material (BOM) spread in multiple applications requires consolidation and alignment. Therefore, the BOM synchronization requires an interactive method for synchronization.

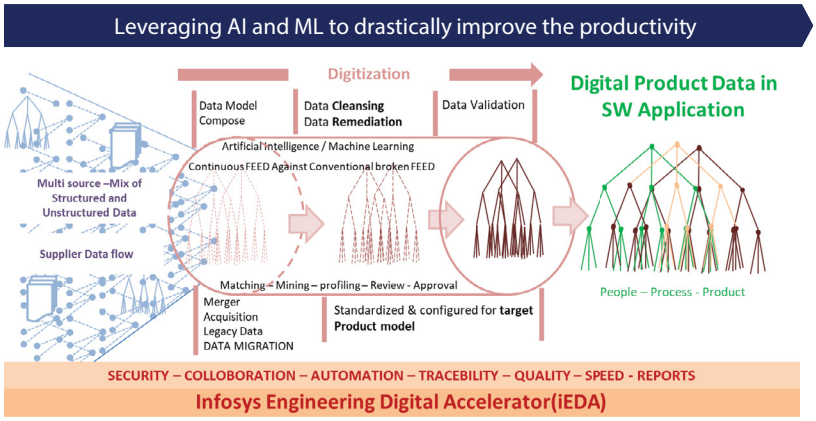
Data profiling helps validate the data fitment for digital capabilities and the need to cleanse or enrich data for digital use cases.

***Match, Mine & Profile**, Structured & unstructured data, From a variety of sources, Available in varied formats for,*

- Faster Digital Transformation
- Product Data Control

Leads to

- Digital R&D, Data Accuracy
- Time to Market
- Agile Innovation



Speed	*2x*
Cost	*1/2*
Quality	*99%*
Traceability	*100%*
Accountability	*100%*
Reduction of rehearsals	*90%*
Productivity up	*30%*

The sequential and an iterative treatment of data matching, mining and profiling will lead to data readiness in a short time. The platform offers a collaborative environment to review, cleanse and enrich the data. Projects are sensitive as it holds organizational assets. Data modification during the digital acceleration process should be in a controlled environment, follow data retention policies and enable audit.

The iEDA platform has helped several organizations accelerate their digital journey ensuring early deployments of digital capabilities, optimized digital acceleration investments and data fidelity.

US Based Food and Beverage company

The organization was maintaining product specifications across multiple R&D applications that resulted in project delays, operational inefficiencies and risk of non-compliance.

Infosys team helped to cleanse the data across 41+ global sites, 210 +co-packer facilities and 2400+ suppliers spread across EMEA, Latin America and Asia regions. With the successful vendor consolidation, the client has improved the 'Time to Market', 'Right First Time to Market' and enabled 'Closed- loop digital R&D'.

US Based Food company

The company acquired a new food brand and a swift integration of product specification into global PLM was necessary to improve the R&D synergy and global branding.

The acquired product definition includes finished goods, packaging, recipe and ingredient specifications. Most of these specifications were in unstructured data, which further required adequate human intervention for successful brand on-boarding. Infosys built the factory model data consolidation/migration tool for frequent brand acquisitions, faster consolidation, comprehensive digital R&D and global visibility of R&D specifications.

Conclusion

In addition to being a data migration accelerator, the iEDA platform collaboratively consolidates the data for digital transformation with adequate security and traceability to optimize business benefits in a short time and with less effort. A globally competing organization always requires a proven platform that supports a pre-configured enterprise data model and is equipped to address the continuous requirements of digital transformation initiatives. iEDA, an Infosys IP, is an ML based intelligent Cobalt cloud hostable and proven digital accelerator platform. It halves human effort and delivers twice faster.

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