

# Getting and Staying Current on 3DEXPERIENCE

## *The SteepGraph Approach*

### *CIMdata Commentary*

#### *Key takeaways:*

- *Deploying or upgrading enterprise software, including PLM, is often a complex, expensive, and risky process, but necessary to get access to the latest features which often have significant business value.*
- *SteepGraph, a systems integrator focused on supporting products from Dassault Systèmes and Aras Corporation, has significant migration experience and many products and services focused on the Dassault Systèmes' 3DEXPERIENCE platform.*
- *The industry-specific implementation accelerators developed by SteepGraph help customers implement or reimplement the 3DEXPERIENCE platform by delivering a pre-packaged solution letting customers focus on their core business, not on setting up IT solutions.*
- *The well-defined upgrade process based on SteepGraph's experience is augmented by a series of tools built by SteepGraph that help automate upgrades, shortening timelines and improving quality.*
- *SteepGraph's 3DX Migration Framework and 3DX Automated Test Suite are their tools for migration support, helping customers upgrade to a stable, reliable implementation and keep it that way.*

### **Introduction**

Both CIMdata's research and consulting work identify companies that are on older versions of their chosen PLM solution, often well behind the current version. We believe this is a significant issue keeping companies from reaching their full potential. In Figure 1, based on CIMdata's research, the green curve illustrates how solution providers improve their solution technology over time.<sup>1</sup> The solid black line suggests the value typically achieved by companies from their implementations. The value gap is the distance between the solid black line and green curve at a point in time. From the data generated by the research we were able to identify "leaders" (represented in the upper grey arrow), successful companies using PLM as a competitive weapon and getting better value from their implementations than the "followers" who had a larger value gap. One takeaway from this model is if you don't upgrade you can't move along the green curve and the black curve stays horizontal (at a fixed capability level) resulting in little or no improvement over time.<sup>2</sup>

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<sup>1</sup> <https://www.cimdata.com/en/resources/complimentary-reports-research/white-papers> (scroll down or search on page for "value gap")

<sup>2</sup> Travel and other expenses related to this commentary were provided by SteepGraph.

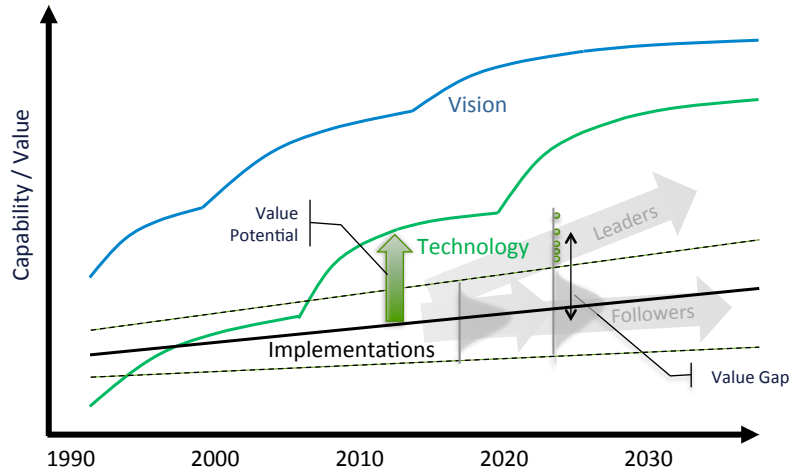


Figure 1—The Value Gap from CIMdata's Research

PLM solution providers invest millions of dollars annually in R&D to improve their products. They release major and minor updates regularly delivering capability, performance, and stability improvements. When customers have questions about software capabilities or issues, a common response is “it’s in the next release,” so staying current is important. While bug fixes, security patches, and performance improvements are necessary, capability improvement is essential to improve business performance. New capabilities introduced anywhere in the lifecycle—concept through design, manufacturing, sales, and service—can positively impact business performance and are often what enables a digital transformation because it is easier to implement new product concepts.

### Why is Upgrading Difficult?

Most enterprise software applications including PLM solutions are complex. Several factors drive complexity but, at the core, PLM solutions require a lot of intricate software code to address the complexity and scope of challenges faced by the target business. Solution providers regularly improve their products to meet ever changing capability, performance, and stability requirements. While the updates generally improve the solution, they can cause issues ranging from minor to show-stopping.

The highest risk changes a solution provider can make is when they change the underlying software product architecture. The improvements brought by these changes are usually both necessary and welcome but can come at a cost. Data from the original version may not be compatible and customizations for automation or integration often need recoding or even rearchitecting. A further non-code impact driven by architecture is licensing. Most solution providers have a module or capability-based approach to licensing. Rearchitecting can also change the licensing approach. What sometimes happens is rather than enhancing an existing capability a new module is created and licensed separately adding additional cost to an upgrade.

Data model changes are perhaps the most common type made by solution providers happening with minor and major updates. CIMdata defines a data model as the definition of all data elements (and their relationships) to be maintained within a PDM solution. The data model defines the database schema for the PDM solution.<sup>3</sup> When customers extend the data model

<sup>3</sup> <https://www.cimdata.com/en/resources/about-plm/cimdata-plm-glossary>

or manipulate the data model via customizations in ways the solution provider did not anticipate if can adversely affect the upgrade.

PLM solutions take advantage of third-party technical components such as software libraries and applications such as web servers and reporting services. When those components change, it can have a material effect on how the PLM or PDM solution functions impacting upgrades. Beyond technical components hardware and software infrastructure such as network accelerators, operating systems, and database versions can also impact upgrades.

The real fun begins when customers implement software. At CIMdata we have a saying: “even a sustainable solution can be implemented as an unsustainable configuration.” Customers often customize and integrate their solutions to fit their businesses and improve employee performance, but these actions can make upgrades much more difficult. Integrations must be configured or customized to map data from one solution to the other, so when one solution changes its data model it can have cascading effects. The other issue is software interfaces or APIs. Over time, standards change and APIs evolve often affecting integrations. Additionally, software from the solution providers doesn’t always meet the customer needs so they create new solutions with different APIs. Finally, upgrades can also have issues caused by data errors. Users often enter bad data; the classic data entry errors come from misspellings in freeform text entries.

While most enterprise implementations have the problems described above, the 3DEXPERIENCE platform has several specific issues that need to be properly managed to minimize the disruption and cost caused by an upgrade. Dassault Systèmes has done some significant rearchitecting in recent years resulting in impacts on upgrades. For example, many customers experience difficulty moving their Designer Central-based data to the Unified Product Structure (UPS) data model. This migration is a complex and lengthy exercise.

## SteepGraph’s Approach to 3DEXPERIENCE

SteepGraph is a mid-sized global systems integrator headquartered in India with offices in the US and Europe. They support the Dassault Systèmes, Aras, and PTC customer bases. In business since 2009, they have especially deep expertise with Dassault Systèmes’ 3DEXPERIENCE platform and are often leveraged by other system integrators to support complex 3DEXPERIENCE platform implementations, migrations, and upgrades.

SteepGraph’s 3DEXPERIENCE Implementation Accelerator automates repetitive tasks and provides a modeling studio for application developers that standardizes configuration and customization with best practices including agile development and user interface support. Having an integrated development environment (IDE) designed to support the 3DEXPERIENCE platform helps ensure developers work with the same standards and processes reducing development timelines and making upgrades easier.

SteepGraph’s upgrade process is shown in Figure 2 and consists of thirteen steps that represent an upgrade lifecycle for the 3DEXPERIENCE platform. SteepGraph developed a series of tools based on their experience to speed up and improve the quality of implementations, migrations, and upgrade processes. The tools are shown below each step in the figure. CIMdata is impressed by the formality of the process and the scope of the tools developed. Having a well-defined process helps ensure quality. Customization often inhibits migrations and a recent study performed by CIMdata found that customizations negatively impact upgrades at over 80% of the Dassault Systèmes user companies.<sup>4</sup> SteepGraph’s 3DX

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<sup>4</sup> <https://www.cimdata.com/en/news/item/15671-cimdata-publishes-ebook-plm-upgrade-study>

Code Review Suite helps the SteepGraph team identify issues before the upgrade starts. Another useful tool developed by SteepGraph is the 3DX Test Automation Suite. It allows developers to run automated tests on customizations to help ensure that code changes don't cause quality regressions. This capability is starting to become more common in PLM implementations and it is good to see that SteepGraph has leading-edge tools.

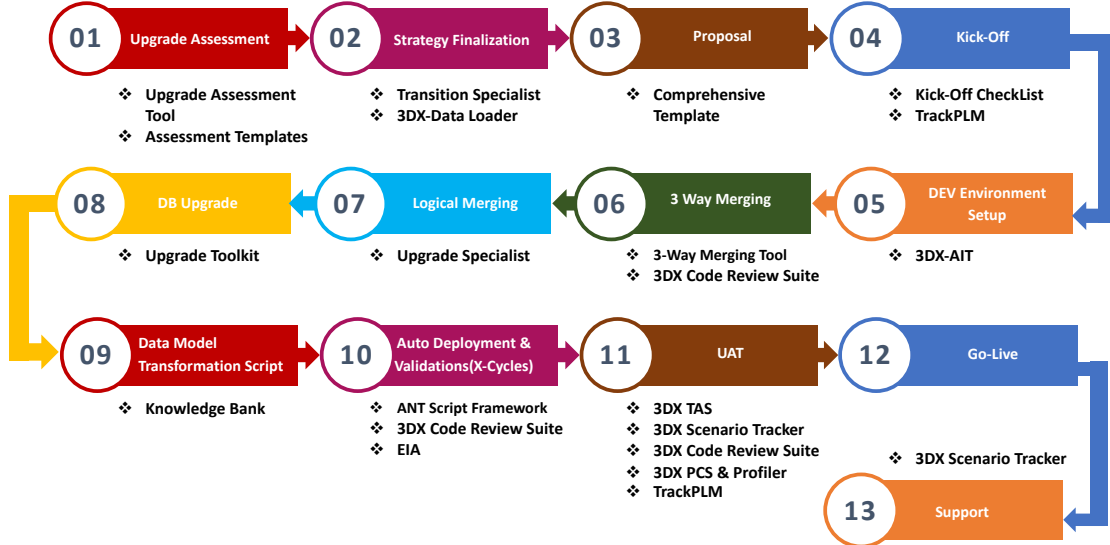


Figure 2—SteepGraph's 3DEXPERIENCE Upgrade Process and Related Proprietary Tools  
(Courtesy of SteepGraph)

SteepGraph also supports the related process of data migration with their 3DX Data Migration Framework. Data migration is the process of moving data from one PLM solution or version to another. SteepGraph has migrated data from a variety of different solutions to the 3DEXPERIENCE platform, including older versions of ENOVIA, and when consolidating multiple 3DEXPERIENCE instances.

As with upgrades, SteepGraph has a well-defined process and a series of custom tools to address the migration process and common issues. The framework is designed to address the following challenges:

- Source Data Complexity
- Data Quality Validations
- Data Migration—Roll Out Strategy
- Expected Data Model Evolution
- Existing Data Conflicts and Duplicate Data
- Operational and Planning Challenges

It has a full set of capabilities including extraction adaptors for many solutions, a transformation engine, a data validation module, and a data correction module.

While there are many more tools that can be discussed, TrackPLM, is very important to customer success. This tool can be used by PLM program team members to track the lifecycle of the PLM project. It has the usual project management tool capabilities, but they are configured to support PLM-specific tasks and connected to the Test Automation suite ensuring that a consistent process is followed. SteepGraph has an impressive framework of tools to support the 3DEXPERIENCE platform that help customers dramatically shorten time to value, generating a better return on investment.

## Conclusion

Successful digital transformations require continuous improvement to generate the best value. The improvement process requires regular software upgrades to stay current to ensure that the latest capabilities, features, and updates can be leveraged. Unfortunately, upgrading is often a complex and expensive process with the risk of significant short-term disruption. A skilled system integrator can reduce the cost and risk of implementing or upgrading if they have the right experience, tools, and methodology.

SteepGraph is a systems integrator with a deep background in Dassault Systèmes 3DEXPERIENCE platform, has expertise, a well-defined process, and a broad suite of software tools to shorten the time to value when implementing or upgrading the platform. CIMdata recommends that companies looking for implementation or upgrade support for the 3DEXPERIENCE platform consider SteepGraph to support this vital process.

## About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design, deliver, and support innovative products and services through the identification and implementation of appropriate digital initiatives. Since its founding nearly forty years ago, CIMdata has delivered world-class knowledge, expertise, and best-practice methods on a broad set of product lifecycle management (PLM) solutions and the digital transformation they enable. CIMdata also offers research, subscription services, publications, and education through certificate programs and international conferences. To learn more about CIMdata's services, visit our website at <http://www.CIMdata.com> or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.