

# Keeping Current: A Critical Digital Thread Requirement

## *CIMdata Commentary*

Key takeaways:

- *Technology obsolescence is a ubiquitous problem within industrial companies that often inhibits progress and can drag profitability lower.*
- *Old and obsolete software often doesn't have the functional capabilities and/or security companies need to support their digital transformations.*
- *PLM-enabling technologies are continuously undergoing significant technological transformation, so being able to upgrade to the latest release with minimal cost and technical friction helps companies build out and sustain their digital threads to improve business operations.*
- *In a recent survey, CIMdata found that Aras Innovator subscribers keep their solutions more current than users of other mindshare leading solutions.*

## Introduction

PLM investment sustainability, a research topic at CIMdata for a number of years, is a critical business strategy to be addressed to maximize business potential. PLM investment sustainability is defined as the ability to keep a PLM solution current, meeting a company's business requirements now and well into the future via continuous and cost-effective improvements rather than a series of discontinuous, high-intensity, and costly upgrade or enhancement events.<sup>1</sup>

In our work with industrial clients, we are often brought in to assess current state and develop a go forward and sustainable PLM strategy that enables an end-to-end digital thread. While it is not realistic to keep all solutions within an enterprise application landscape on the very latest release at all times, staying current (i.e., being on your solution providers' supported versions) is almost always advisable as it reduces risk of both catastrophic failure and incremental degradation. We often find solutions that are not currently supported being used for mission critical functions, which adds considerable risk to business operations.

There are many negative impacts caused by older and unsupported software solutions. As far as improving business performance, the lack of new features and inability to enable an end-to-end digital thread are arguably the most critical. Solution providers regularly release new capabilities and often these capabilities can have a material impact on the business (e.g., addressing critical and changing security issues). For example, adding multi-BOM support can improve the integration of engineering, manufacturing, and service, thereby reducing costs and improving customer satisfaction. Finally, deploying new capabilities faster will increase the ROI by shortening the time-to-value (TTV).

## Technology Obsolescence

So, why do software solutions go obsolete? Market evolution and technology evolution are the main drivers of software obsolescence. Market evolution is a broad area and is constantly changing. Within a market there are many participants; customers and solution providers are primary, but regulatory organizations also have major market influence. Each market

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<sup>1</sup> Research for this commentary was partially supported by Aras.

participant contributes to overall requirements within a market segment and it's up to the solution provider to choose the appropriate requirements to satisfy with their product.

Market drivers are a significant element of a solution provider's business vision and strategy. If the solution provider develops good requirements and builds a solid solution to meet them, they'll have the right foundation to succeed and grow. As requirements evolve solution providers hope to develop the right technical architecture to continually meet new requirements. Additionally, this approach needs to enable them to address requirements changes with incremental improvements, rather than major rewrites that are disruptive and risky. Incremental improvements also reduce risk for their customers as they avoid the potential effects of disruptive upgrades.

For the solution provider, making the correct architectural and technology stack choices are critical to solution resiliency and long-term success. Resiliency is when the solution is flexible enough to adapted cost effectively to new, and often unforeseen requirements well into the future. Modern PLM solutions have hundreds of developers creating and managing millions of lines of code. Often this code is written on top of other software technology platforms and capabilities. Amazon Web Services (AWS) or MS Azure, MS SQL Server or Oracle, MS Internet Information Services (IIS) or Apache are common well known technology elements, but there are others including graphical user interface (GUI) frameworks, programming languages such as Python and Rust, and third-party libraries with their own technology stack choices.

Changing architecture or stack elements are not decisions made lightly but they eventually have to be done. Competition and cost reduction are often big drivers. When a competitor makes a different choice, and it is successful, other solution providers have to respond. Often solution providers invent new technology, but over time others copy it and it becomes common, or a commercial library becomes available that replaces it. The solution provider who originally invented the new technology then has to decide if they buy the now common technology or continue to support their version of it. Ultimately, a solution provider must be able to sustainably incorporate new capabilities that meet customer business requirements such as supporting a new portion of the lifecycle such as requirements management or perhaps a new business model, for example SaaS, either by developing or licensing technology.

The consequences of obsolete technology can be substantial. For an industrial company, if their PLM solution cannot easily adapt to new business requirements, they will lose business. Often, the key business performance metrics of speed to market, quality, and cost will be impacted. Within the PLM market, it is rare to see a competitor disappear overnight, due to their continuing maintenance or subscription revenue and the stickiness of PLM solutions. If the solution provider puts the application in maintenance mode, industrial companies are put in a difficult situation. The critical question is "when is it necessary to rip and replace the current solution to get new needed capabilities?"

End users often have a lot of say about obsolete software. Obsolete software is typically disliked due to the lack of a modern user interface, which typically makes software difficult and cumbersome to use. The "swipe right" mentality made common by phones and tablets has dramatically changed expectations for existing and the next generation of enterprise software users.

From an enterprise business perspective, the big issue related to obsolete software is that it makes digital transformation, sustainment, and addressing evolving security issues difficult and sometimes impossible. CIMdata is seeing many top-down digital transformation (i.e., digitalization) initiatives get stuck because many of the tools, solutions, and even platforms they use are out-of-date and unable to function to support an integrated end-to-end digital

thread. There is nothing worse than for a project champion to receive an executive mandate to move ahead only to find out it's impossible to execute the project with an existing outdated toolset.

## Does Cloud Solve All Upgrade Issues?

Many companies are turning to the cloud to be saved. Unfortunately, the cloud doesn't solve all the upgrade issues, but it does solve some very important ones. Most new software companies are adopting a cloud-native SaaS business model. Mature providers that started on-premises are adapting and transforming their products to be cloud-ready often with a SaaS business model. A key advantage of SaaS solutions is they are typically architected in a manner that allows them to be upgraded regularly ensuring that the latest capabilities are available. SaaS upgrades often happen every few weeks ensuring application freshness, but there is a downside. Users are rarely able to delay upgrades, so the blessing is that they are forced to stay current but to do so they need to accept the upgrade on the solution provider's schedule. Staying current means the users will have the latest and greatest capabilities to support their digital transformation, but they too might have to be retrained on a more continuous basis.

Just moving software to cloud may lower overhead costs, but this isn't the most important measure. That is how much value does a move to the cloud add? Cloud-native solutions are the future but are not necessarily required for a successful PLM implementation. Choosing a solution only based on whether it is cloud-native or not is like choosing a car based on the type of tires it has. It is an important criterion, but far from the only one. The most important criterion is whether a cloud solution meets all your business requirements appropriately, and how it will meet your evolving requirements moving forward. So far, most multi-tenant PLM solutions on the cloud are focused on specific industries and use cases, and are not as flexible as many of the mature on-premises based solutions have proven to be. Fortunately, this is starting to change, as the native cloud solutions grow their depth and breadth, and many of today's PLM mindshare leaders, as defined by CIMdata, are transforming their solutions to leverage cloud platform capabilities and moving to a business model that supports SaaS PLM offerings. CIMdata is looking forward to hearing about SaaS successes where solutions are heavily tailored or customized to meet complex business requirements.

## Aras PLM Platform

Aras has carved out a rapidly growing segment within the PLM market for industrial companies that want to stay current and have the ability to highly customize their solution to meet business requirements. CIMdata has written a lot about the Aras approach to PLM and our publications are available within our [Aras Dossier](#).<sup>2</sup> We have also written about how [Aras supports customizations and is able to include free upgrades for subscribers](#).<sup>3</sup> Aras has over twenty years of experience and a strong track record of delivering upgrades as promised, no matter the level of configuration perform on their platform. Aras' latest release, which supports containerization on the cloud, will still allow the same level of customization and support for upgrades for all implementations, including those delivered via the cloud.

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<sup>2</sup> <https://www.cimdata.com/en/resources/solution-provider-profiles/plm-dossier-aras>

<sup>3</sup> <https://www.cimdata.com/en/resources/complimentary-reports-research/commentaries/item/551-aras-innovator-redefining-customization-upgrades-commentary>

## Upgrade Research

CIMdata recently executed a research project on the topic of upgrades. We surveyed industrial companies to learn how long they keep their PLM solutions, how often they upgrade, and if customizations inhibit upgrades. An upcoming eBook entitled *Deferred PLM Modernization Delays Time to Value* and [Webinar scheduled for April 13, 2021](#) will discuss the results of the survey. Here’s a sneak peek of some of the survey results based on 86 unique responses representing 120 solution implementations.

Survey Question	Aras Users	Other PLM Users (Average)
How long since you last upgraded your PLM solution?		
Response: “Within the last 6 months”	47%	10%
Response: “Within the last 2 years”	71%	32%
Are customizations inhibiting upgrades?	12% (Yes)	60% (Yes)

As you can see, Aras users stay more up to date than users of other solutions. CIMdata and Aras believe staying up to date on software is a critical element of a digital transformation strategy. Also, from the survey, Aras users have fewer issues with customizations inhibiting upgrades.

## Conclusion

PLM solutions are a complex landscape of business processes, software systems, integrations, and supporting hardware in most companies. The various technologies have lifecycles and need regular upgrades and occasional replacements. Postponing upgrades is done for both good and bad reasons; and it can be risky to be an early adopter as bugs and other issues can be disruptive. But, on the other hand, missing out on performance updates or useful capabilities can inhibit progress and drag profitability lower. Furthermore, missing security updates puts data, intellectual property, and business at risk of theft.

Digital transformation is a major industrial trend that old and obsolete software cannot often support. Companies must be able to stay current to have access to the features and security they need to successfully grow their businesses.

A recent CIMdata research project found that Aras customers have upgraded more recently than customers of other mindshare leaders’ solutions. Other findings from this research will be released soon. Companies looking for a PLM solution that can be easily kept up to date should check out Aras Innovator. Aras’ technology and business approach helps customers configure a solution to their needs and keep it current.

## 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 over thirty-five 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)