

Aras Innovator: Redefining Customization & Upgrades

CIMdata Commentary

Key takeaways:

- *Aras Innovator is redefining customization in the PLM market; the days of worrying about the potential impact on upgradeability are disappearing*
- *Aras Innovator's ability to deploy quickly with real-time customization of predefined best practice solutions is a key market differentiator; it is engineered to be highly customized*
- *Aras Innovator's architecture has been designed to protect investment and ensure future adaptability; it is engineered to be sustainable*

Introduction

For several years, the Aras Corporation (Aras) has included no-cost version-to-version upgrades in their enterprise subscriptions, independent of how the solution has been customized and implemented. This is a rather bold guarantee given the historic challenges the industry has experienced with upgrading highly customized PLM deployments. With more than 300 upgrades behind it, CIMdata felt it appropriate to find out how Aras' guarantee was playing out, and discovered that there was much more to the story than just a contractual guarantee. Fundamentally, Aras Innovator is engineered to be highly configurable—even customizable—without resulting in expensive and complex version-to-version upgrades and re-implementations.

As definers, defenders, and champions of the PLM industry CIMdata, along with most of the industry, has traditionally defined configurability (or tailorability) as the ability to adjust and/or define the behavior of a PLM solution in a manner that carries forward to the next-released version of the software solution without re-configuration. Defined this way, configurability is a good thing; many would in fact say it is a highly desirable attribute of a robust PLM solution. Whereas the industry has traditionally defined customization as a bad thing, because it frequently requires re-implementation of customizations with each subsequent upgrade; usually a costly and time-consuming effort that CIMdata and almost all PLM solution providers recommend be avoided. But with Aras' comprehensive PLM solution, Aras Innovator, this appears to no longer be the case. Could this be a true innovation, a PLM solution that is highly customizable to satisfy specific business requirements without causing negative side effects? A solution where you could easily and extensively customize its look and feel, data model, and even operational behavior without worrying about the upgrade process? The simple answer is Yes; a more detailed answer follows.

The Innovation Behind Aras Innovator

Like most innovations, Aras Innovator's architecture started with a simple, yet elegant main design concept; one based on a behavioral modeler (as Aras calls it, a "model-based SOA enterprise application framework"). At its core, Aras Innovator is an object-oriented, web-based solution that relies on a service-oriented architecture (SOA) with a behavioral modeler that provides a graphical drag-and-drop environment that enables real-time system definitions and alterations that do not require complex programming. Modifications to Aras Innovator are made in real-time by editing the model definition directly, rather than by having to edit source

code, compile, link, and then deploy to make the necessary application changes and enhancements. By contrast, application modifications in traditional compiled-code-based architectures, where the business logic is defined within scripts and associated computer code, can take weeks or even months to implement.

By supporting solution model modification in real-time, Aras Innovator’s platform allows changes to be implemented on a live system. The solution’s behavioral modeler stores the XML solution models (e.g., object model, relationships, business logic, and methods) as normalized data structures in the database, separate from the underlying web services framework that comprises the Aras Innovator application (see Figure 1).

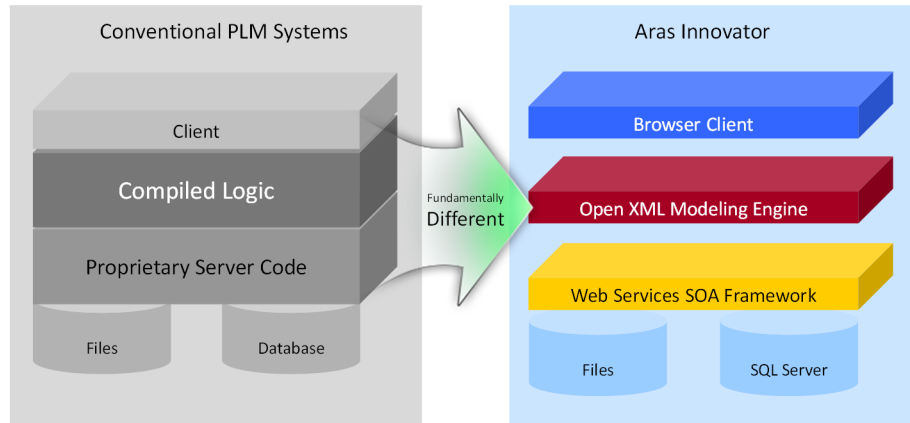


Figure 1—Aras Innovator Application Stack vs. Conventional PLM Systems
(Courtesy of Aras)

Figure 2 illustrates the range of solution models and business process models available out-of-the-box with Aras Innovator. The models can be modified, combined, and extended using the graphical model editor and simple forms. The solution models in turn subscribe to web services found in the Enterprise Application Framework (EAF) layer. When upgrades occur to the web services programs, these programs are replaced without impacting the XML models residing at the higher level, and since there is no implementation-specific business logic in Aras Innovator’s web services programs, all business logic is made available and is endlessly customizable within the modeling environment; upgrades do not require code changes to the solution models.

It is important to note that Aras Innovator’s behavioral modeler is not a data modeler with scripts running beside it. It is, rather, an object-oriented system where the solution and its behaviors are defined in the modeling environment, and the model is executed directly by the solution’s SOA run-time engine. Aras Innovator has no middle abstraction layer of code that defines and/or interrupts business rules between the user interface layer and the database layer, which is important for a number of reasons. Not only does this result in a higher level of configurability; it also results in a leaner code stack than that found in most comprehensive PLM solutions. (Aras reports fewer than one million lines of code exist in the current release of Aras Innovator.) A benefit of the leaner stack is that it allows the database to be directly optimized since it precisely represents the business logic, thereby making scalability solely a database issue. To date, Aras reports lab-run scalability tests of over 200,000 concurrent users with significant potential to go much higher based on the availability of the appropriate hardware configuration to support the increased database traffic.

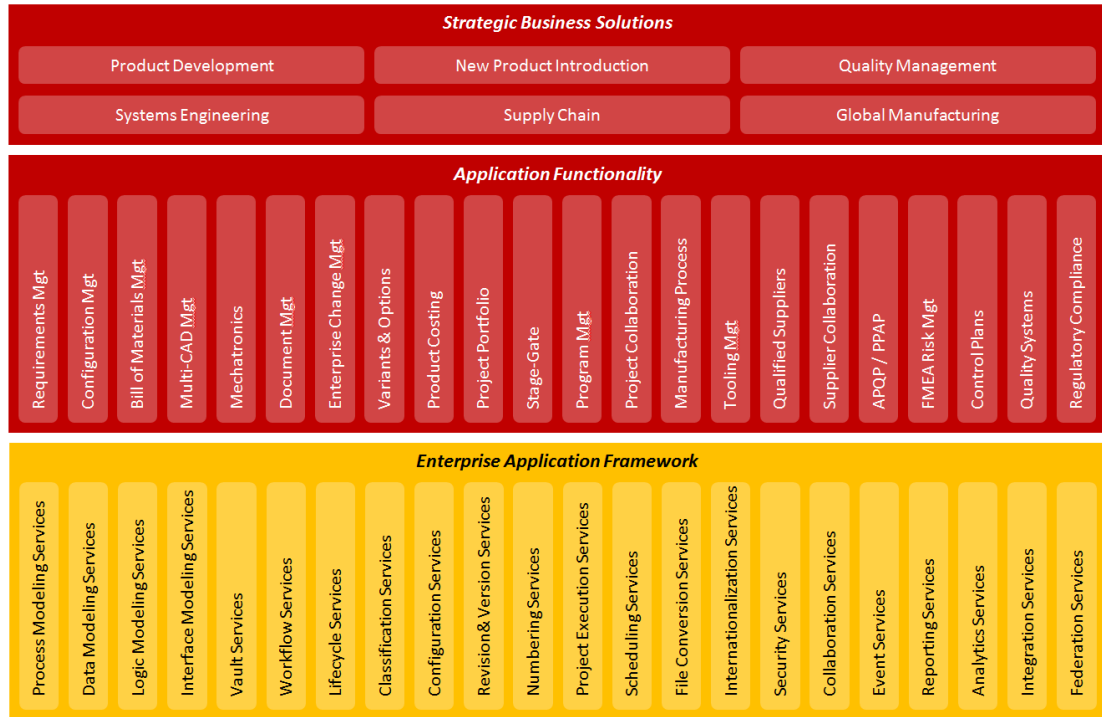


Figure 2—Aras Innovator Solution Suite with Out-Of-The-Box Business Process Models
(Courtesy of Aras)

Another benefit of the behavioral modeler is that Aras can run a more efficient development organization with fewer people; the organization doesn't have to upgrade, move, and test as much source code between releases as many of its competitors. This means that Aras can more quickly develop, test, and deliver solution enhancements to its customers, thereby enabling them to rapidly enhance their PLM capabilities.

Aras' customers, many of whom speak at Aras' multiple annual user events, report that Aras Innovator's unique architecture has saved them time and eliminated the need to make core system changes to implement complex customizations. They also report that this approach results in a rapid and rather effortless system definition; one that adapts to changing business requirements simply, continuously, and without the headaches of typical code-based customization paradigms. Many Aras customers report that Aras Innovator's architecture enables the rapid implementation of business-specific solutions either from scratch, or when starting with the predefined industry templates that are available to the Aras community. They also report that forms, workflows, relationship structures, business rules, and data model schema can be easily customized in real-time to support even complicated business requirements.

Finally, it is important to note that the guaranteed upgrade of a highly customized PLM solution is not only possible, but is in fact commonplace among Aras Innovator subscribers. Many report that the upgraded database is returned from Aras within two weeks. Aras says the technical part of the upgrade generally takes a few hours, with the remaining time consumed with validation testing. Customers still need to validate integrations and perform their own acceptance testing.

Aras' upgrade-for-free guarantee is proven by customers like the United States Army who reported that with ten major version upgrades since 2000, they have never lost any previous customization or integration done to Aras Innovator. This places Aras Innovator in a special

position that merits investigation both by companies searching to replace an existing PLM solution and by those looking to implement one for the first time.

Conclusion

Aras' secret is out and many industrial companies are taking advantage of Aras Innovator's ability to support extensive customization while avoiding upgrade issues. Aras' customers have found Aras Innovator's modeling capabilities and predefined best-practice templates enable solutions to be developed quickly, and the real-time configuration and customization support enables fast deployment. The solution's ability to be upgraded without causing time and money to be spent on re-implementing customizations is impressive, and those looking for a highly customizable PLM solution should take note. For the companies that have already embraced Aras Innovator, the solution's elegance is in its simplicity and in the fact that it is possible to upgrade without a penalty for customization. The follow-on impacts are significant, and for many of Aras' customers there is a lot more value to come. Aras Innovator's architecture is not just highly customizable, it is also highly sustainable. The days of missing or significantly delaying upgrades have potentially ended. Aras Innovator is a robust solution with a high degree of resilience to business and technology changes, thereby protecting a company's short- as well as long-term PLM investment, and ensuring future adaptability. To answer our earlier question as to whether or not Aras Innovator could be a true innovation, significantly customizable to satisfy business requirements without causing negative side effects, the answer is a resounding Yes.

About CIMdata

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