

Right-Sizing PLM Software Investments

An Indian motorcycle manufacturer leverages **business analytics** to optimize **software usage** and **procurement decisions**.



By **Beverly A. Beckert**

With the explosion of computing power available today, the need to better manage and control enterprise software assets is prevalent across all industries. Year over year, software procurement has become a rising cost of doing business. As such, software inventory management, license utilization rates and charge-back accounting have become critically important to procurement and IT officers for accurate capacity planning and budgeting.



Bajaj Auto is no exception to these trending industry challenges. Founded in 1926 by Shri Jammalal Bajaj, today Bajaj is the third largest motorcycle manufacturer and the world's largest producer of three wheelers. With plants located in Waluj (near Aurangabad), Chakan (Pune), and Pantnagar (Uttaranchal), Bajaj has produced a landmark 4.32 million two- and three-wheeler units in FY2011-12, including the popular motorcycles Pulsar, Discover, Platina and RE.

Dedicated to bringing high-performance motorcycles to market with uncompromising quality, innovation through research and development (R&D) is a market differentiator for Bajaj. The Bajaj R&D facility located in Akurdi Pune is recognized by the Indian government and has numerous patents in and around its product lines. Integral to its R&D activity, Bajaj has assembled a sophisticated product lifecycle management (PLM) infrastructure and employs more than 900 technical professionals throughout its operations. It is here where Bajaj senior management

required "right-sizing" PLM software investments against organizational productivity.

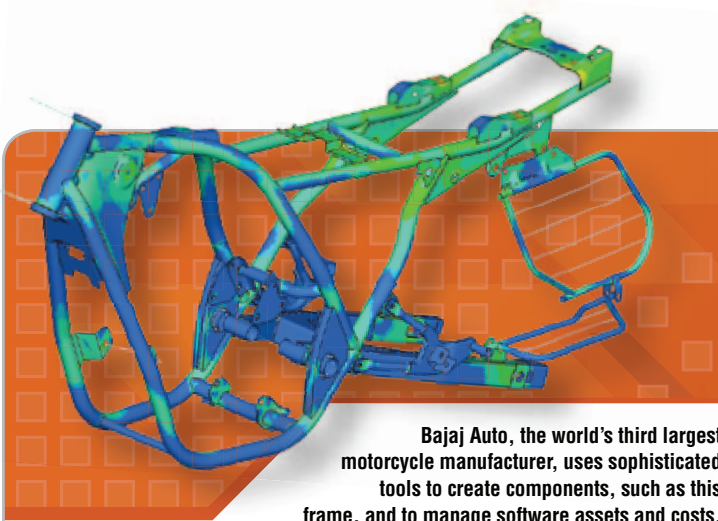
Missing the Software Snapshot

With more than 18 years experience in enterprise systems development across the automotive and manufacturing value chain, S. Vishwanathan, general manager, Research and Development Division, Bajaj Auto, found it difficult to rollup the total number of licenses and understand the usage of PLM, CAD, CAE, CFD and NVH software for capacity planning to support his R&D staff. He realized this issue was not isolated to Bajaj but was a challenge faced throughout the PLM community. He and his team set out to understand the problem in order to devise a business solution that better managed Bajaj Auto's software assets and costs.

Researching the problem, Bajaj learned that software inventory records for a majority of companies were not sufficiently maintained and that it was common for up to 25% of procured software to be significantly underutilized, or not utilized at all.

Specifically for Bajaj, limited information was available regarding current software inventory assets and license utilization. Manufacturing, Tooling and R&D departments each managed their own independent software vendor (ISV) licensing agreements and license servers. As such, there was little visibility into these distributed systems and minimal accounting for these procured software assets.

At the time, the only way to create a consolidated view of its software inventory was to manually pull data from



Bajaj Auto, the world's third largest motorcycle manufacturer, uses sophisticated tools to create components, such as this frame, and to manage software assets and costs.

each server and, depending on the licensing agreement, format this information and enter it into Microsoft Excel. While time-consuming and labor-intensive, rough snapshots of current software inventories were possible. However, this information only addressed a small part of the story associated with the total number of licenses; it did not reveal how efficiently staff was using the software – or if the software was being used at all.

What Bajaj realized was that it needed an automated system that enabled management to rapidly assess operational needs in order to make faster, more informed software procurement decisions. It needed a system that could provide:

1. On-demand software inventory visibility and system-aware alerts for license expirations, denials and renewals to ensure organizational productivity;
2. Software license utilization statistics by vendor, by feature, by shift, by division, etc. to balance software resources with demand – maximizing utilization of procured licenses; and
3. Objective data and metrics to support capacity planning, software procurement decisions and vendor negotiations.

To address these business requirements, Bajaj Auto pursued a partnering strategy to deploy a robust software asset optimization (SAO) solution.

Data Analysis on Demand

Having specific domain expertise in business analytics, design and engineering and software licensing systems, Bajaj Auto selected and partnered with Altair to implement its SAO solution. Leveraging Altair's HiQube™ business analytics technology platform and a standardized business model to manage and optimize the utilization of software assets, Altair's implementation team worked closely with Bajaj management to rapidly deploy a working solution.

The SAO solution deployed at Bajaj consisted of five main components:

- **Data Layer** – Identification and Network Time Protocol (NTP) connection to all license servers and license managers;

- **Data Collection Agents** – Installed directly on each license server machine, these agents directly query, read and push license server and license manager information at a pre-defined frequency to a central data store;
- **Data Consolidation** – A Relational Database Management System (RDBMS) with a pre-configured data schema is deployed on a host machine to efficiently format and manage information received from data collection agents;
- **Data Analysis and Analytics** – With a direct connection to the RDBMS, Altair's HiQube business analytics technology is deployed with a standardized SAO multi-dimensional data model to facilitate advanced analytics and business critical alerts, reports and dashboards; and
- **Presentation Layer** – HiQube's SAO Web Server Client provides on-demand access from anywhere to Bajaj business stakeholders via web and mobile device clients.

HiQube's baseline SAO solution is pre-configured for the most popular license servers and managers, requiring only a network connection to these servers and the installation of data collection agents to deploy a working solution.

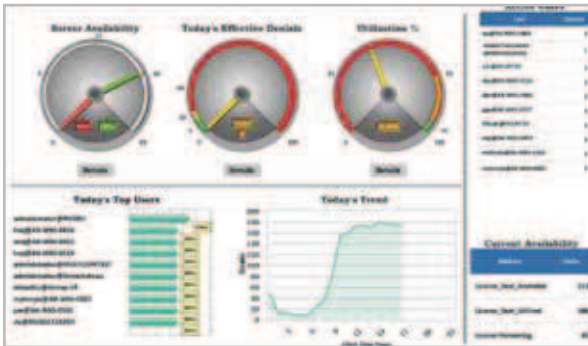
What's Trending

Within days of installing the data collection agents, Bajaj was able to visualize license server information and perform advanced analytics. Today, up-to-date consolidated views of software inventories, denials and usage trend information are available for Bajaj management to know exactly what is going on at any time.

Business-critical dashboards available in HiQube's baseline SAO solution and leveraged by Bajaj include:

Software Inventory Dashboard – At any time, Bajaj management has up-to-date, online reference to its complete software inventory and associated key performance indices across the R&D organization. This is predominantly used for Bajaj's business-critical applications including CAD, CAE, CFD and PLM. The information availed through this interactive dashboard allows Bajaj to closely track its complete software inventory portfolio, monitor the availability of these critical applications to stakeholders and proactively determine the need to add new licenses to its pool.

Usage Dashboard by Software Title – The usage dashboard provides Bajaj the ability to understand utilization rates and trends by specific software titles and software features over any time dimension (hour, day, week, month, quarter, year, etc.). For example, by viewing usage information over an hourly time increment, Bajaj can easily determine when shifts start and end as people log in and log off systems,

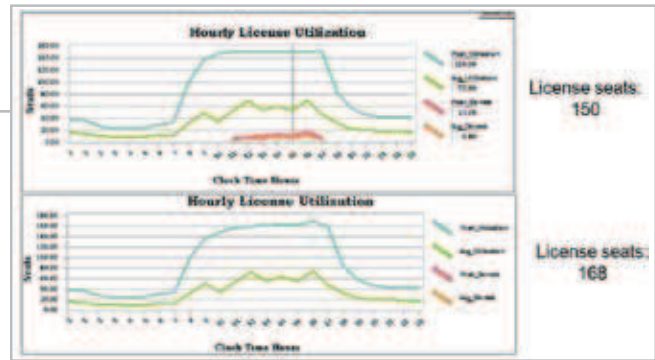


how software titles are used during specific shifts and time periods of peak and low demands for software licenses. This information can be useful to take measures to load balance license demand as well as determine the need to procure additional licenses or reallocate underutilized licenses.

This as well as the other SAO dashboards are excellent tools to understand the impact of decisions or progress towards business goals. For instance, Bajaj recently made the decision to move from its current CAD solution to a new CAD platform. The license servers and managers for both CAD systems were being managed by the HiQube SAO solution. Both systems needed to co-exist for a period of time to support legacy models and current business. However, as there are costs associated with supporting two CAD platforms, an obvious question by Bajaj management was, "How quickly are we migrating to the new system?" With the HiQube SAO solution, Bajaj was able to clearly see a positive trend and quantify their progress toward full migration to the new CAD platform.

License Denials Alerts Dashboard – Software license denials is a critical business issue for Bajaj as it negatively impacts staff productivity and can compromise program timing. With built-in email and text alerts, this dashboard allows Bajaj administrators to quickly respond to denial notifications by better understanding what software licenses were denied, frequency of denials, who was denied, how many times a person was denied and when specifically these denials occurred. Corrective actions can then be taken to reallocate licenses, terminate idle sessions or determine the need to procure additional licenses.

Advanced Analytics and What-if Simulation – The monitoring and reporting capabilities of the HiQube SAO solution provided Bajaj a much deeper understanding of the



Software asset optimization (SAO) dashboards enable Bajaj management to track its complete software inventory portfolio, monitor the availability of critical applications and determine the need to add new licenses.

current state and past performance. However, it's the advanced analytics capabilities and ability to perform what-if simulations that answer the complex questions of why something happened and what action should be taken.

For example, Bajaj frequently moves teams from one shift to another. In doing so, it needs to understand the impact on the demand and availability of certain software titles and features. Understanding the software usage profile of each team member allows the company to predict the new total license demand for the shift. To minimize license denials, managers can take proactive measures to reallocate workload, schedule resources or procure new licenses.

A Case for SAO

"I can honestly say that every PLM software license procurement decision at Bajaj is supported by a business case using the information and insight provided by our software asset optimization business solution," says Vishwanathan.

"We have and continue to make significant software investments in CAD, FEA, CFD, and PLM," continues Vishwanathan. "It's critical to the profitability of our business that we have the ability to closely monitor our software inventory and identify underutilized licenses before procuring new licenses. The trend and what-if analysis capabilities have improved our understanding and speed of our capacity planning efforts, and the automated escalation of license denial notifications continues to minimize staff productivity losses.

"For our investment," concludes Vishwanathan, "the value we have already realized is significant. I would say the adoption of an SAO strategy is low-hanging fruit for a majority of businesses to improve their bottom line."

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