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CASE STUDY

Automotive Industry

Cloud Migration

How BMW Accelerated their Cloud Adoption to Drive Innovation and Agility

In order to continue to thrive in today's innovative and fast-paced automotive market, BMW needed a flexible, scalable cloud migration procedure. With high demands for innovation and the need for capacity for growth a priority, developing a comprehensive, cost efficient, and a cloud migration roadmap would be vital to their success.

The first step for creating this cloud migration roadmap required an assessment of the IT application and infrastructure landscape based on proven methods and industry benchmark comparison.

The background

The manufacturer's U.S. IT team took the lead in establishing the goals for Americas regional initiative, with plans to build a process that would establish a best practice for the global organization:

- Accelerate Cloud Adoption – Applications must be assessed and prioritized to create an actionable and optimized plan to increase cloud adoption

- Reduce Costs – Utilizing cloud, the team needed to right size over-provisioned application environments and leverage compute on demand for workload peaks
- Drive Innovation – The automobile industry continues to demand innovation and change, which requires more flexible, scalable platforms
- Increase Data Center Capacity – Increased IT demand has driven total capacity and it was a must to rapidly migrate workloads to cloud and create capacity
- Minimize Impact – Tribal knowledge must be leveraged to create an accurate and actionable view of the environment, however impact on Subject Matter Expert (SME) resources must be minimized in the process
- Support Business Case – The organization requires accurate data and vision into the overall cloud migration effort to support a compelling business case for this project

The solution

With TDS and its TransitionManager software, the manufacturer found a solution which would allow them to see their entire environment fully. With current and actionable data, business, app, infrastructure and security stakeholders can -- together -- make better, faster and more informed decisions which will accelerate their workload migrations. For BMW's US IT team, this would provide a streamlined, data-driven and integrated approach to their application assessment, application rationalization and cloud roadmap planning.

Assessment and validation

To begin, existing data from multiple data sources such as homegrown applications, BMW's CMDB was imported into TransitionManager and then mapped, normalized and filtered for data not in scope for project. This produced a consolidated view of all data, visually represented in the TransitionManager Dependency Analyzer, giving all stakeholders an interactive map of all applications and dependencies.

The rich visualization tools in TransitionManager are designed to show every known data point, application, server, etc., as well as – and this is vital – how they are interdependent. For the IT team, this provided much needed visibility into the inner workings and dependencies of all of the applications. And with more accurate and actionable information now captured, the team could do an initial assessment of readiness for cloud migration for the full application portfolio.

Brief interviews were then conducted by TDS's consultants with the BMW application experts to validate the accuracy of the application data and their infrastructure and service

dependencies as well as enriching the infrastructure data with critical business facts, requirements and priorities such as:

- **Security Policy:** Does the data have any security restrictions? (PCI, HIPAA, PII, PHI, etc.)
- **Retiring:** Will the application be retiring in the near future?
- **App Redesign:** Are there any plans for a complete application redesign?
- **Data Localization Restrictions:** Are there requirements for the data within the application to be stored in a certain geographical area?
- **Cloud Capable:** Is this application able to reside in the cloud from the SME's point of view?
- **Code Ownership:** Who created the code? (internal, BMW created; commercial off the shelf; custom vendor, created by third party for BMW)
- **Licensing Considerations:** Are there any licensing requirements keeping the application from running in the cloud?
- **Customer facing:** Is the application customer facing?
- **Architecture:** What platform is the application running on (e.g. Microsoft stack, Java, SAP, etc.)
- **Database:** Which kind of database system is used?
- **Peak Times / Overall Load:** Does the application have peak times (e.g. used once a month) or does it have permanent load?
- **Latency demands:** Are there high latency demands?

Application Portfolio Management (APM) paves the way for efficient planning and cost savings

Numerous studies show that eliminating inefficiencies in the IT landscape can uncover hundreds of millions of dollars in savings. APM streamlines the existing application portfolio by improving efficiency, reducing complexity, and lowering IT spend.

Guiding principles for BMW's application rationalization process were laid out:

- Consider cloud first for all new applications and applications undergoing a major redesign
- Consider SaaS solutions if useful
- Use lift and shift only if it produces cost savings
- Keep in mind that redesign / refactoring of applications might be required to leverage all benefits of public cloud platforms
- Align with the data center strategy

Factors which were considered when evaluating each application or bundle included: potential cost savings, impact on data center space, alignment with business requirements, risk mitigation and use of the application with outdated architecture or software.

This data-driven approach enabled more informed decisions about which applications were ready for the cloud and which might need to be retired/refactored/replatformed/ rehosted and then produced the migration schedule.

Simultaneously, the team could identify the simpler, cloud-ready applications and workloads and set aside the more detailed planning for the more complex migration initiatives.

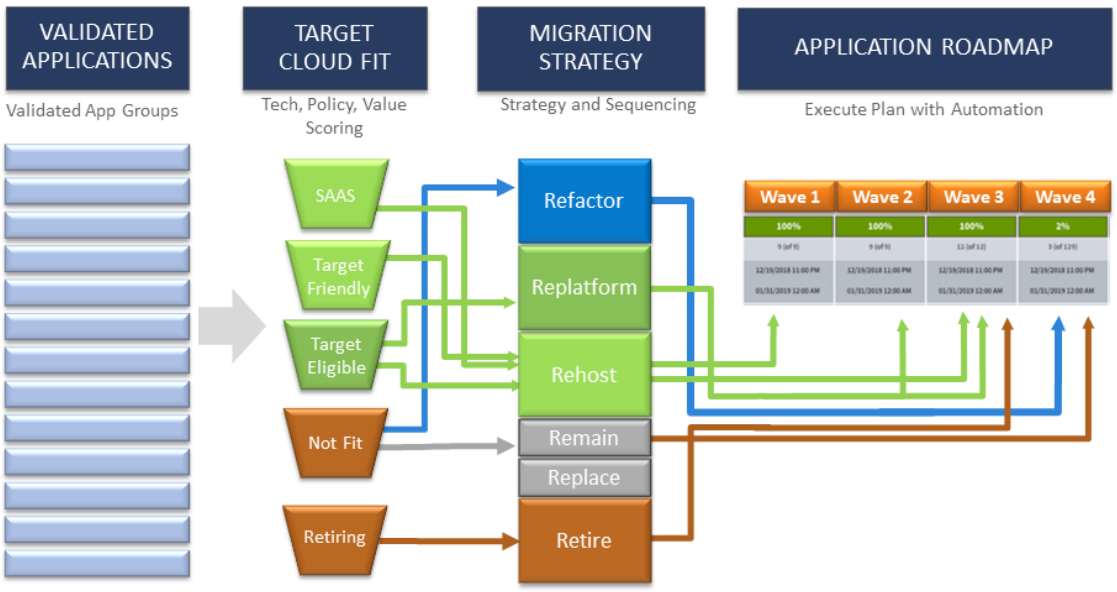
Roadmap for BMW's cloud adoption

With the data now actionable and accurate in TransitionManager, BMW was able to prioritize their cloud candidates by automatically generating application and dependency views and then consider "what if" scenarios and understand the effects of different considerations such as:

- Application complexity
  - Simple architecture (candidate for early wave)
  - High number of application-to-application dependencies (candidate for later wave)
- Dependency to shared databases
- Dependency to middleware

This ability to adopt a dual approach, allowing for rapid migration where appropriate and a more comprehensive migration of complex / mixed environments, can dramatically accelerate the benefits of hybrid cloud environments. By scoring, prioritizing and identifying the "low-hanging fruit", it introduced a more efficient process and was also a great psychological boost for the BMW team.

They could show quick progress rather than having project teams stall when they encounter a more complex decision. More importantly, they were able to show progress to executives on migrating workloads to cloud and a defined plan for the future of the project.



With key information about applications, decisions could be made about cloud-readiness, most efficient strategy, and schedule for migrations.

Because all the data had been aggregated in one place, the workload selection and placement process will be streamlined without having to bounce around to multiple tools and attempt to re-organize massive data sets to make decisions.

The results

The TDS APM process laid the important groundwork so that the BMW project managers could now build their own roadmaps. Seeing the data in TransitionManager ensured that they had a clear, accurate and actionable view of their applications and how each fits in the full environment.

As business priorities shift, this contextual information can be used to form a migration backlog that will put the owners in the right position to execute the cloud adoption roadmap for their applications going forward.

How TransitionManager Addresses IT Challenges

Faster Analysis & Decision Making

- Unsticks projects with rapid engagement, discovery and a tailored solution
- Establishes an application roadmap in an actionable platform
- Teams leverage actionable information to work in real-time, no longer slowed down by the information bottlenecks and gaps
- The TransitionManager ingestion and normalization of all the data in the platform automates much of the time-consuming work of keeping information up to date
- As requirements and impediments change dependency views can be quickly re-generated and analyzed to take action

Improved Transparency & Vision

- Rolled up views give executive summary of project and effort
- Data stored in TransitionManager enables siloed teams to see unified information and project status
- Application level financial analysis helps organizations like BMW make informed decisions and maximize ROI in the cloud
- A high-level outline and process allows IT and business leaders to accurately plan next phase work activities and associated budgets

Continued Progress & Repeatable Process

- Other environments can follow same process during initial wave execution phases
- Incorporating best practices and lessons learned into a set of repeatable processes
- Dynamic platform to leverage automation and integrations to improve efficiency and reduce risks