

Case Study

Hughes Systique Continues to Build Capability and Drive Performance with CMMI[®] Performance Solutions



The Business Need

Hughes Systique, a global software solutions and services organization, needed to develop a well-defined delivery execution model to facilitate and drive sustainable and continued business growth. They knew that the CMMI Performance Solutions model provided a structured and systematic approach to improving capabilities and leveraging best practices. Hughes Systique believes that the CMMI-based delivery execution model is one of the key factors that has ensured the organization not only survived their nascent stage but also grew consistently to become a recognized player in the marketplace. In the last few years, Hughes Systique placed a strong and sustained focus on continually improving and streamlining processes for more predictable and better outcomes against specified business objectives. Their current focus is to maintain the business gains achieved so far, consolidating their position in the market, and continuing to grow and scale further, so they continue to rely on CMMI to improve capabilities and business performance. Their main objectives were to:

- Improve customer satisfaction: Measured by CSAT score on a scale of 1 to 5. CSAT score positively correlates to customer retention and business growth
- Increase the quality of delivered software: Measured by Post Release Defect Density (PRDD). PRDD negatively correlates to the customer experience while using the delivered software
- Reduce turnaround time for support: Measured in terms of Mean Time to Resolve (MTTR). MTTR negatively correlates to the timely resolution of tickets

Company Background



Hughes Systique is an award-winning software solutions and services company that specializes in providing complete end-to-end product engineering services ranging from technology &

product consulting, architecture, development, and testing & validation. It provides technical support for networking, media streaming, retail, automotive, IoT, blockchain, security, and Wi-Fi Engineering (including 5G, NHG Solution and Wi-Fi analytics). Hughes Systique's global headquarters are in Rockville, MD, and its India headquarters are in Delhi/NCR, with additional development centers in Gurugram and Bengaluru, India, staffed with best-in-class domain experts, system architects, and engineering teams.

For more information, go to [hsc.com](https://www.hsc.com)



- Decrease cost of poor quality due to review defects: Measured by % of rework effort spent to fix review defects. % of rework effort positively correlates to schedule and effort overruns
- Improve the quality of data used for generating the metrics for project management: Measured by data quality index (DQI). DQI positively correlates to the reliability of the data used for managing the projects quantitatively

The capabilities targeted for further improvement by Hughes Systique were related to following focus areas:

- Ensure Quality
- Design and Develop Products
- Deliver and Manage Services
- Planning & Management
- Maintain Habit and Persistence
- Improve Performance

The Solution

For the identified focus areas, the CMMI framework provided readily available best practices which were appropriately adapted and implemented by Hughes Systique:

- Ensure Quality: CMMI best practices from Verification and Validation (VV), Peer Review (PP) and Process Quality Assurance(PQA) have been integrated into SDLC processes resulting in improved quality of deliverables
- Design and Develop Products: CMMI best practices from Requirement Development and Management (RDM), Technical Solution (TS), and Product Integration (PI) have been integrated into SDLC processes, resulting in a highly capable delivery execution model
- Deliver and Manage Services: CMMI best practices from Strategic Service Management (STSM), Service Delivery Management (SDM), Incident Resolution and Prevention (IRP) and Continuity (CONT) have been integrated into support processes resulting in timely and quality resolution of tickets
- Planning and Management: CMMI best practices from Estimation (EST), Planning (PLAN), Monitor and Control (MC) and Risk Management (RSK) have been integrated into project management processes and SDLC resulting in timely and cost-effective delivery of quality software
- Maintain Habit and Persistence: CMMI best practices from Governance (GOV) and Implementation Infrastructure (II) have been integrated into organizational policies and processes resulting in consistent and reliable outcomes
- Improve Performance: CMMI best practices from Managing Performance and Measurement (MPM) and Causal Analysis and Resolution (CAR) have been integrated into organizational and project-level processes resulting in predictably improved outcomes

“The CMMI framework fully aligns with the company’s objective of creating long-term value for its customers, employees, and shareholders. Over the years, CMMI has resulted in significant gains in customer satisfaction and higher predictability in project execution which has eventually resulted in consistent business growth both in terms of revenues and margins.”

**Vinod Sood, Managing Director and Head,
Hughes Systique India**



“The systems and processes at Hughes Systique are encapsulated in its business management system (BMS) which is aligned with customer needs, attuned to business operations model, and benchmarked against industry standards such as ISO 9001, ISO 27001, ISO 27701, Six Sigma, and CMMI. Sustaining and leveraging a highly recognized industry framework like CMMI has enriched the organization’s BMS and has benefitted tremendously in terms of increased maturity of the systems and processes at Hughes Systique.”

Hemanta Chandra Bhatt, Quality Head, Hughes Systique India

Hughes Systique Maturity Level Milestones

The CMMI model has been at the core of the delivery execution framework at Hughes Systique since its beginning.



In addition to delivery processes and given the criticality of people factor in business success, Hughes Systique has continuously invested in improvements in its people management practices since its inception. In pursuit of the same, Hughes Systique benchmarked its people management framework against the People Capability Maturity Model and attained Maturity Level 5 rating in 2021.

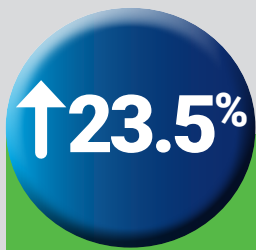
“Adoption of CMMI has played a pivotal role in building and institutionalizing a delivery framework at Hughes Systique that is highly reliable and ever improving. The strong focus on delivery and people excellence along with a deeply ingrained culture of learning and innovation at Hughes Systique has enabled us to consistently meet and often exceed the expectations of our customers. The use of CMMI practices has provided a definitive edge to our project management and execution capabilities resulting in continually improving the predictability of our delivery outcomes.”

Tarun Singhal, SVP and Head of Engineering, Hughes Systique India



Key Performance Goals Achieved

CMMI high maturity practices were fully integrated into Hughes Systique's organizational processes in 2012, when Hughes Systique reached Maturity Level 5 for the first time. Since then, significant improvements continue to be achieved.



CSAT score of delivered projects has increased by 23.5% from 2012-2022



PRDD for development and enhancement projects has been reduced by 64.5% from 2012-2022

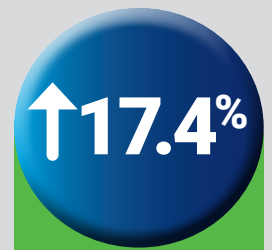


MTTR for support projects has been reduced by 58.7% from 2019-2022

(NB: Data before 2019 not available since there was no project of this type prior to 2019)



% rework effort for review defects for development and enhancement projects has been reduced by 28.0% from 2012-2022



DQI for metrics data reported by projects has increased by 17.4% from 2016-2022

(NB: DQI was introduced in the organization in 2016)

Lessons Learned

Hughes Systique introduced several innovative practices and integrated them into the fabric of the organization. These best practices have ensured the sustained evolution of the CMMI program at Hughes Systique. They have:

- Established a corporate-level metrics team and high-maturity team to coordinate and perform high maturity analysis per defined rhythm. The metrics team consists of members with extensive expertise and experience in using statistical and analytical tools and techniques
- Defined the enterprise-wide framework for the governance of high-maturity activities in the organization. This includes several tools such as a yearly calendar for high-maturity activities, fortnightly sync-up meetings, and quarterly reviews by top management
- Developed competency in project managers and leads in applying statistical/analytical tools in project management. Some concepts included process stability and capability, what-ifs, and sensitivity analysis



Lessons Learned (con't)

- Streamlined and automated the mechanism for quantitatively managing projects using MPM-based practices. This has not only increased the usability of this mechanism but also significantly reduced the effort required by the project managers
- Created and maintained a funnel of process improvement opportunities based on triggers from different sources, such as process performance analysis at the organizational level, ideation workshop, and issues reported in certain business processes
- Leveraged the architecture of CMMI framework to define the business management system at Hughes Systique. This has benefited tremendously in integrating other frameworks and models such as ISO standards, Six Sigma, and data privacy
- Conducted a yearly best practices conclave (BPC) where practitioners share their actual process experience while executing projects

The support from senior management has been instrumental in building a strong process-oriented culture in the organization, based on CMMI best practices. The strong commitment for CMMI from the executive sponsor, Vinod Sood, Managing Director and Head of Hughes Systique India has been essential for Hughes Systique's continued growth and success. He has constantly provided the direction and resources for CMMI implementation and other process initiatives in the organization.

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