Modern Application Development using **TCS MasterCraft™ TransformPlus – Forward Engineering Edition**

Enterprises are striving to leverage innovative digital technologies for designing and developing applications in keeping with the dynamic business requirements and evolving customer expectations. Developing microservices-based cloud-native applications will equip enterprises to foray into new avenues that will enable better handling of business needs by improving efficiency, through increased scalability and flexibility. Industry-standard technologies are transforming at an unfathomable pace and to deliver and develop timely and high-quality applications, the demand for a highly automated development platform is gaining momentum.

TCS MasterCraft™ TransformPlus Forward Engineering edition is a new-age, cognitive application development platform that seamlessly builds functionally complex, large, multi-tier database-centric, business applications suitable for browser and mobile, on-premise and cloud. It generates containerized, microservices-based applications and deployment scripts for Kubernetes-based deployment, for public/ private cloud.

Overview

TCS MasterCraft™ TransformPlus (*Forward Enginee ring Edition*) is a patented, model driven, digital application development platform, that accelerates the development of Microservices. It offers an intuitive, wizard-based approach for developing microservices, RESTful Application Programming Interfaces (APIs), and Inter Service Communication. The generated application code complies with coding best practices ensuring higher code quality.

The product facilitates the development of applications by offering complete support to:

• Generate User Interface (UI) for web and mobile applications

• Ensure decentralized development

• Create, version and document API

• Monitor Microservices

• Ensure multiple packaging & deployment options

TransformPlus (Forward Engineering Edition) enables users to design a responsive user interface effortlessly through a Drag and Drop UI editor. The ability to develop vendor-agnostic, cloud-based applications signify the service orientation to leverage Cloud for scalability and agility. Automated code-generation enables continuous upgradation of the application, offering enterprises maximum agility to deliver new functionalities.

Key Features

TransformPlus offers -

Model Driven Development: Microservices with state-of-the-art UI, using drag and drop wizards, generating code using Models
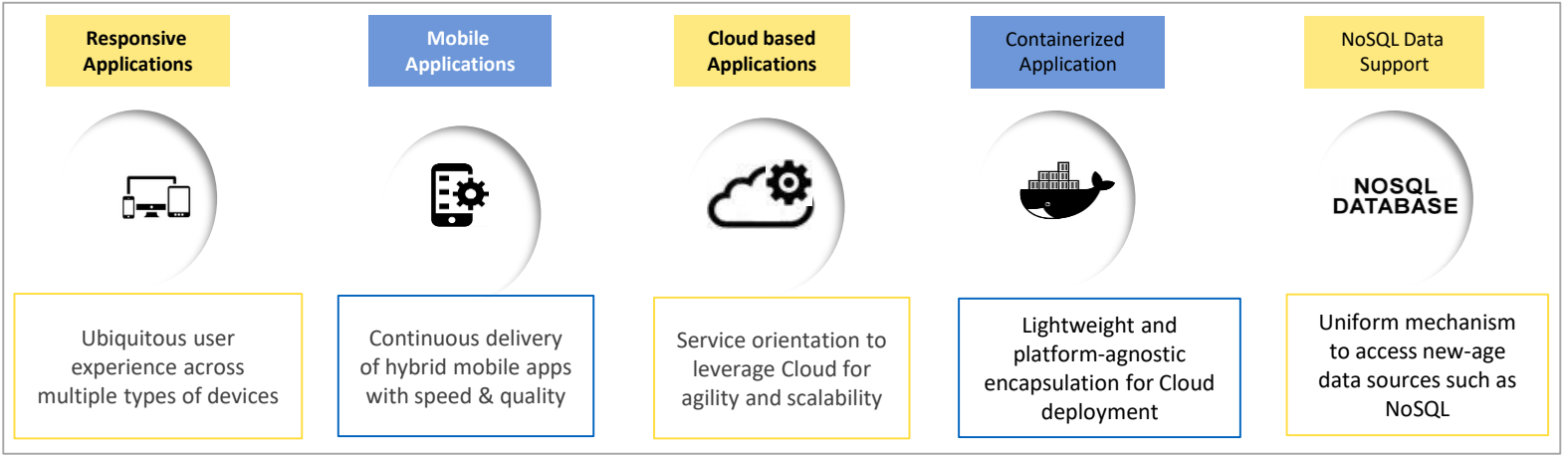
Responsive Web Design: Template-based, responsive UI generation for major devices and browsers, with the latest technologies in React, Angular, Angular Material, frameworks & libraries

Continuous Technology Upgrade: Automated Code Generation, supporting latest technologies both in UI and Backend Models with Data Layer.

API Creation, Versioning and Documentation – Wizard-based approach for APIs, with support to create, version, secure end points and generate Swagger-based documentation, API monitoring

Optimized Cloud Application Development: Cloud –ready, vendor-agnostic, cloud-optimized applications, using Spring Cloud, Reactive Spring WebFlux , Spring JPA and Netflix OSS Components.

Inter Service Communications: Wizard-based approach to model synchronous and event based asynchronous communication with the help of Restful APIs and Apache Kafka and RabbitMQ.

Responsive Applications	Mobile Applications	Cloud based Applications	Containerized Application	NoSQL Data Support
Ubiquitous user experience across multiple types of devices	Continuous delivery of hybrid mobile apps with speed & quality	Service orientation to leverage Cloud for agility and scalability	Lightweight and platform-agnostic encapsulation for Cloud deployment	Uniform mechanism to access new-age data sources such as NoSQL

End to End Testing: Integrated support for UI test cases and Microservices, with consumer driven contracts

Model Reports: Valuable insights on component design, implementation and configuration through HTML reports for GUI and business components

Multiple Database Support: Supports Relational Database Management System and NoSQL databases using Java Persistence API (JPA), making it easy to have a polyglot persistence in microservices based applications using MongoDB or cloud native CosmosDB for Azure Cloud.

Distributed Logging: In-built support for log aggregation and analysis with Splunk as the underlying technology

Multiple Application Observation: Visual insights into microservices, Prometheus/ Grafana capabilities are leveraged and Microservices are isolated using circuit breaker patterns to allow graceful degrades

Benefits
Key benefits of TCS Mastercraft™ Plus include:

Faster Time to Market – Enables developing and deploying microservices at the earliest in both on-premise and on-cloud options

Enhanced Productivity - Improves productivity by almost 30% eliminating the need to write boiler plate code using auto code generation

High Quality of Deliverables: Enhances the quality of code generated, adhering to industry standards as it passes through SonarQube

Decentralized Development – Promotes independent development and testing of microservices

Multiple Deployment Options – Provides support for packaging Microservices into Docker containers and orchestrating the use of Kubernetes, which can be deployed on all major clouds

No Vendor Lock-In - Enables the use of Open-source libraries and framework so that if required, the complete project can be maintained outside TCS MasterCraft.

Awards & Recognition

To know more
Visit the MasterCraft™ page on tcs.com
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About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled, infrastructure, engineering TM and assurance services. This is delivered through its unique Global Network Delivery Model , recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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