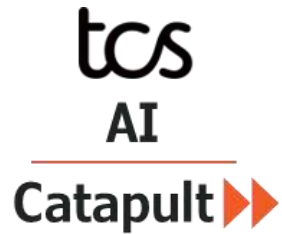# TCS AI Catapult Forward | Features

TCS' AI-powered application migration & modernization framework "TCS AI Catapult Forward" aims to accelerate application development by leveraging the potential of **Azure OpenAI**. The framework automates numerous repetitive tasks through context-aware suggestions from Azure OpenAI enabling **rapid application development by improving developer velocity.**

1 — **CLOUD-NATIVE DESIGN TEMPLATES**
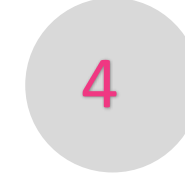*Various cloud-native design templates to adopt for target state application architecture.*

2 — **CODE GENERATION CAPABILITY**
Generate application code for both new cloud-based projects and migration of existing systems to the cloud.

3 — **PROMPT GUIDANCE FOR DEVELOPMENT**
Guided Prompt for generation of Application code which can be further contextualize with prompt tuning

4 — **COMPLETE SOLUTION**
All-in-one solution for cloud-based projects, includes application source code, database scripts, IaC scripts, and DevOps YAML files.
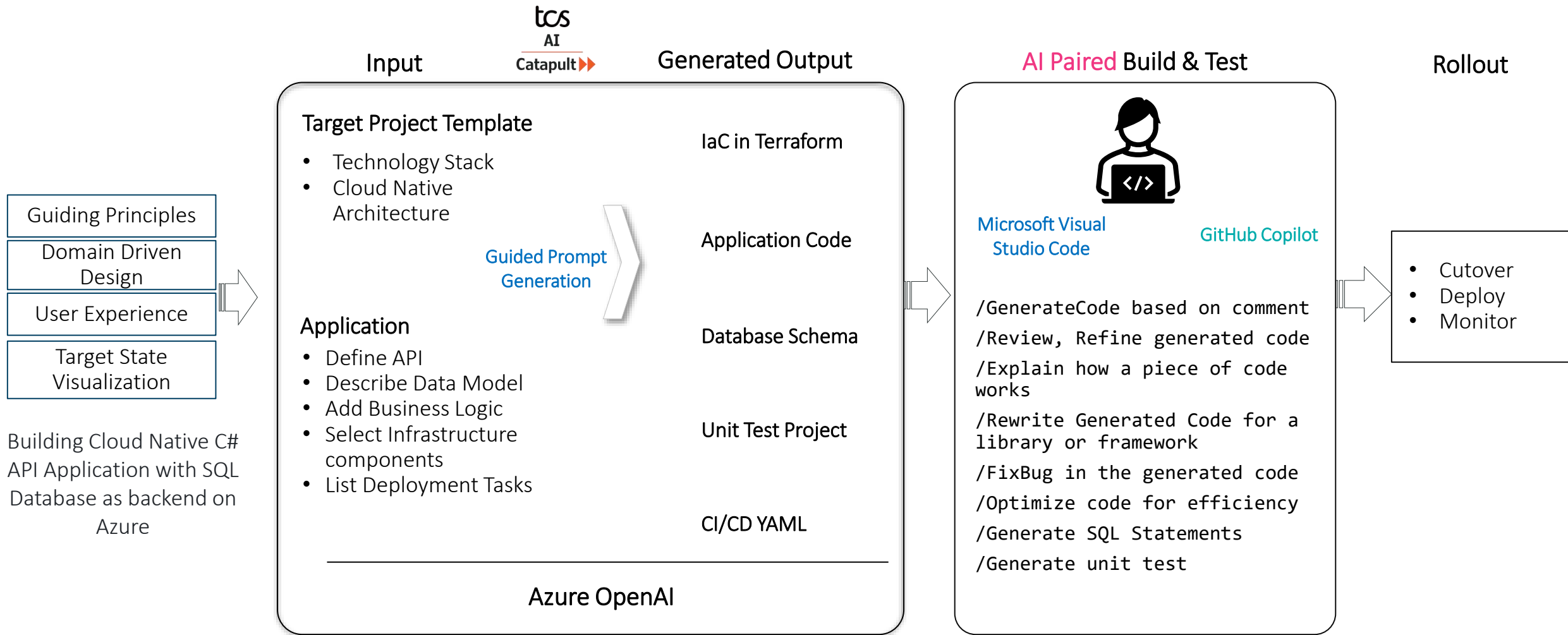
and experience...

| **Improved** Developer Velocity | **Low** Development Cost | **High** Automation |

AI Assisted Application Cloud-Native Development Service Framework

tcs AI Catapult▶▶

Input | Generated Output | AI Paired Build & Test | Rollout

Guiding Principles

Domain Driven Design

User Experience

Target State Visualization

Building Cloud Native C# API Application with SQL Database as backend on Azure

Target Project Template

- Technology Stack
- Cloud Native Architecture

Guided Prompt Generation

Application

- Define API
- Describe Data Model
- Add Business Logic
- Select Infrastructure components
- List Deployment Tasks

IaC in Terraform

Application Code

Database Schema

Unit Test Project

CI/CD YAML

Azure OpenAI

Microsoft Visual Studio Code | GitHub Copilot

/GenerateCode based on comment
/Review, Refine generated code
/Explain how a piece of code works
/Rewrite Generated Code for a library or framework
/FixBug in the generated code
/Optimize code for efficiency
/Generate SQL Statements
/Generate unit test

- Cutover
- Deploy
- Monitor

Collaborate | Generate | Refine
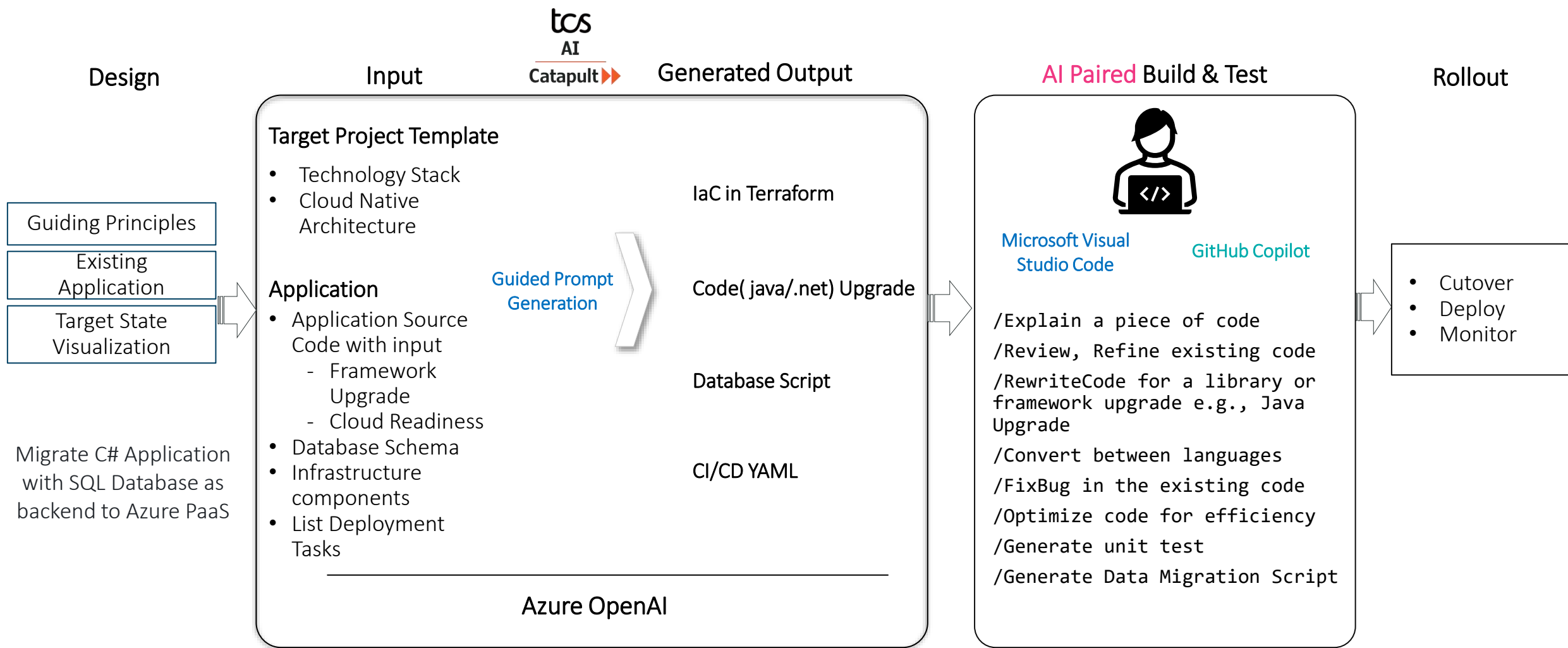
↑ Productivity ⋮ ↑ Standardization ⋮ ↑ Predictability ⋮ ↑ Reliability

AI Assisted Application Migration Service Framework

tcs AI Catapult ▶▶

Design | Input | Generated Output | AI Paired Build & Test | Rollout

Guiding Principles

Existing Application

Target State Visualization

Migrate C# Application with SQL Database as backend to Azure PaaS

Target Project Template

- Technology Stack
- Cloud Native Architecture

Application

- Application Source Code with input
  - Framework Upgrade
  - Cloud Readiness
- Database Schema
- Infrastructure components
- List Deployment Tasks

Azure OpenAI

Guided Prompt Generation

IaC in Terraform

Code(java/.net) Upgrade

Database Script

CI/CD YAML

Microsoft Visual Studio Code   GitHub Copilot

```
/Explain a piece of code
/Review, Refine existing code
/RewriteCode for a library or
framework upgrade e.g., Java
Upgrade
/Convert between languages
/FixBug in the existing code
/Optimize code for efficiency
/Generate unit test
/Generate Data Migration Script
```

Rollout

- Cutover
- Deploy
- Monitor

Collaborate | Generate | Refine

⬆ **Productivity**   ⬆ **Standardization**   ⬆ **Predictability**   ⬆ **Reliability**