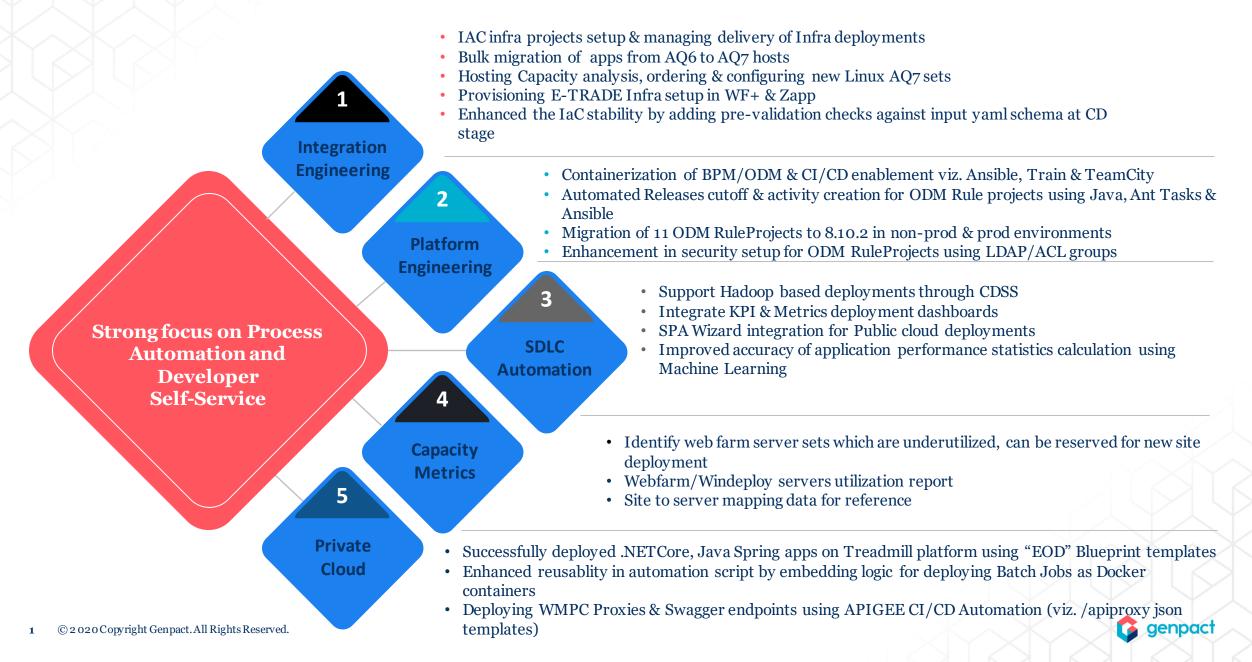
Summary of our engagement across key programs in CTS



SRE Journey – DevOps to SRE

- Several **opportunities** to enhance SRE Best Practices in DevOps framework

Plan



Code,Build, Test



Deploy, Release



Monitor



Operate

- Support & maintain-ability are an afterthought
- Rules on Production mgmt. engagement are not clear
- Lack of consistency on collaboration b/w Dev, QA & Prod environments
- Lack of best practices on intutive & predictive monitoring approaches

- Monitoring as Code is not adopted
- Resiliency testing not fully covered
- Limited & late feedback to Dev teams from QA/PM
- No Continuous Deployment for Capacity, QA & Platform automation configs
- No AI/ML driven Hygiene playbook(e.g., upgrade of components to latest ver.) as part of daily work

- Prod mgmt. Functions engaged late into the lifecycle
- Limited Proactive & predictive Post-Deploy Validations/checkouts
- Backouts not systematically tested
- Less intuitive Analytics
 Dashboards

- Runbook automations not fully implemented in vertical functions/PAGs
- During Incident mgmt, Event Correlation is less mature
- Post-mortem practices are not covered
- Very limited use of Synthetic transaction testing (like healthchecks)

- Limited operational reliablity assurance & validations
- Less Aggregations, Trends & Patterns based Analysis for intrumenting Prod level monitoring & measuring keymetrics
- No AI/ML infused Alerts
 Handling ecosystem
- Limited Operational
 Dashboards & data models
 for Ingestion & ETL
 Transformation

End to End

Artifical Intelligent

Automated

Agile

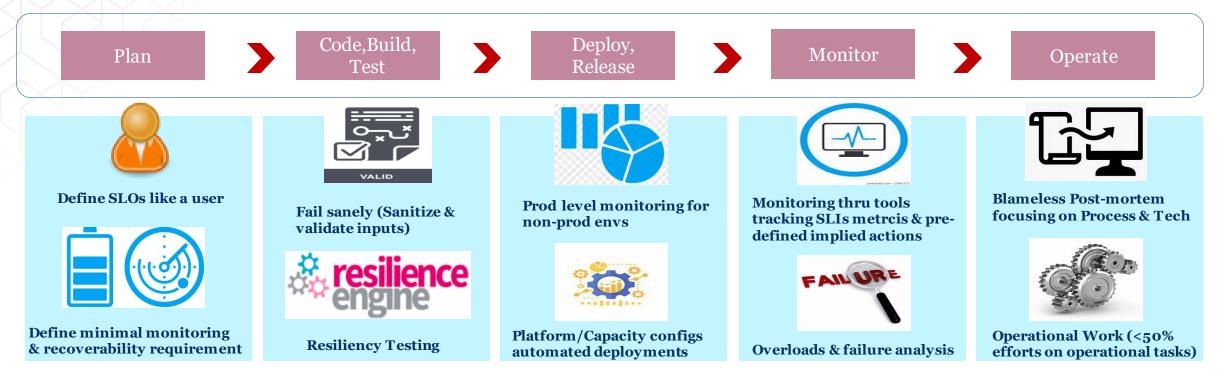
Machine Learning

Business 4.0 Ecosystem



SRE Journey – SRE Accelerators on top of current ecosystem

- SRE Model **enabling Prod mgmt** best practices through SDLC Lifecycle



- ❖ Implanting "Monitoring-As-a-Code" for annotating rollout of the SRE functions, scripts & configs viz. Devops (CI/CD) pipelines. These AIOps SRE artifacts & manifests will drive the Testing Framework, Platform, Operational Support etc. automations viz. AI/ML written intelliGen Ansible Playbooks, Flask-API/Microservices, QA load & regression workflows, Data analytics dashboards (data-models/Streamsets)
- Embedding (Al/ML-driven) SRE accelerators as Horizontal functions Spawning SRE coverage across the PAGs/Lifecycle management to build SRE ecosystem viz. Integrated Incident mgmt wireframes, Proactive Monitoring, Predictive Alerts analysis & Dynamic setup of alert Thresholds (Plant healthchecks, RFB checkouts & Hygiene items viz. RPA/RBA/Halo-Cache rules engine)

End to End | Artifical Intelligent | Automated | Agile | Machine Learning | Business 4.0 Ecosystem



SRE/DevOps Tools Landscape











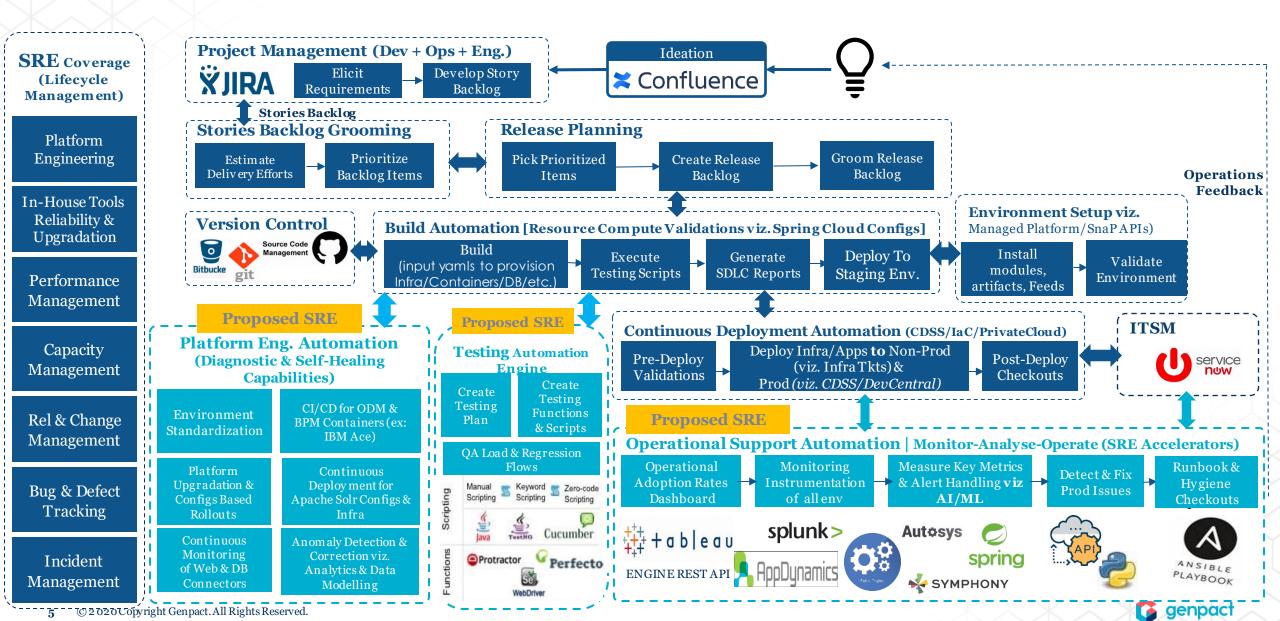


Project & Support Management

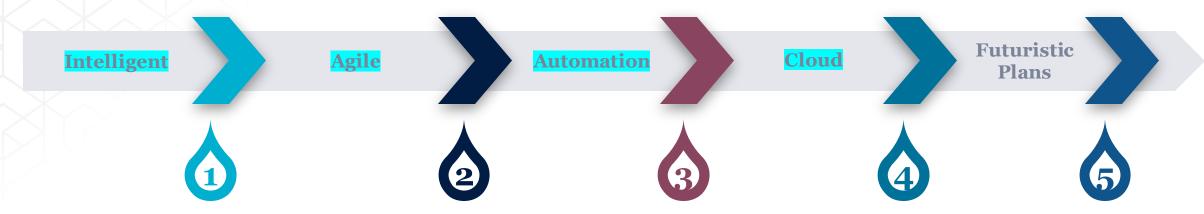


SRE Implementation Proposed Architecture

- SRE Ecosystem Wired Layout based on top of existing environment in MSWM



Meeting Strategic Goals viz. SRE 4.0 Framework



- Logging and log analytics
- Unified Smart Dashboard view on Infra metrics and container monitoring
- Cognitive
 Analytics viz. Searching,
 viewing, and visualizing data indexed in
 Elasticsearch/Kibana
- Service Modal Transformation •
- Spotify Engineering Culture
- AIOps Modal Integration
- BOTs interface for handling Alerts (viz. Catch-Dispatch)
- RPA Wireframes available via Service Hooks for integration
- Regulatory Reporting using Cloud Data Platforms (Analytics Insights viz. Azure)
- DataOps Pipelines ingestion for Data Analysis viz.
 Streamsets/Correlation identifiers
- Plug-n-Play SRE Modal Available for integration with
 any Source (DB, API, JMS etc.)
 as Upstream & Target (MQ, DB,
 API, Functions, BOTs etc.) as
 Downstream Systems



