



**IT SYSTEMS. MODERNIZED.**



Reactive Horizons is our program for navigating the journey from legacy, monolithic IT systems to new systems based on Reactive Architecture, and open source cloud-native microservices.

We can assess, plan, build and run your systems, bringing together best-of-breed technologies and proven techniques with our unique process, tailored to your specific project needs.



# ASSESS

Assessment is an optional stand-alone project where we interact with your architects and senior development staff to assess the maturity of your technological choices, team dynamics, staff technical skills, and software development process.

You benefit from receiving specific recommendations and guidance for evolution and enablement. You then have the option to engage with us in the full Reactive Horizons process. Assessment however, is not a necessary prerequisite; you can commence engagement at the "Plan" stage.

Assessment	Area
Technology	Current technology stacks and techniques that are directly integrated with your software.
System Architecture	Your current system architecture.
Tooling	The languages and compilers you use, as well as the maturity of your DevOps process.
Software Development Life Cycle	Your processes – Agility, incremental, iterative, testing, code quality techniques such as Pair Programming, Test-Driven Development (TDD), Behaviour-Driven Development (BDD).
Testing	Tools for integration, performance, scale, functional, user acceptance, etc.
Team Dynamics	We assess your team via google form-based questionnaires to determine areas for training / mentoring.
Automation	Your Continuous Integration / Continuous Delivery (CI/CD) pipeline, testing, deployment, build, tracking, tracing, etc.
Infrastructure	The managed services that are not directly integrated with your system and associated API calls.
Operations Process	How you manage the running of your system (see also the "Run" phase).
Security	The efficacy of penetration testing, intrusion detection, malware scanning, etc.

# PLAN

Proper planning has various elements which involve in-depth client engagement.

Step	Activities	Benefits
Familiarization with YoppWorks	We look at how your business is organized; the hierarchy of subdomains (to three levels) and some of the potential entities within those subdomains.	Solving the right business problem, via understanding and mutual agreement.
Domain Analysis	Bi-directional communication on requirements, context, and concepts.	Clear, unambiguous communication.
Event Storming	Via working sessions, we use this analysis technique to produce event flow diagrams, sequence interaction diagrams and other supporting materials.	Identification and agreement on the business level events, entities and commands to be addressed.
Epic Analysis	We identify and agree on the project's major milestones and associated epics (large bundles of functionality) and features.	An early high-level grasp of the features to be delivered.
Domain Driven Design (DDD)	Via Domain Driven Design (DDD), we establish a common model by which the system will be organized.	An early high-level grasp of the system to be developed, as well as any dependencies.
Backlog Capture	A prioritized project backlog consisting of all the epics, stories and tasks is completed for the first project milestone.	Clear agreement on the scope of work, allowing technical team members to commence.
Project Governance	We confirm the necessary governance, metrics, KPIs, reporting artifacts, teaming, process, and methods using a generic governance plan adapted to your project.	You understand and can modify the rules, facts, metrics, reports, responsibility matrix, and other items for the project.
Architectural Roadmap *	An optional high-level architectural roadmap shows the project phases, the components involved at each step, and how they interact.	Visualize the initial, intermediate, and final system, architecturally.
Steel Thread *	We can construct the "Steel Thread" based on a very thin slice of functionality that spans the proposed system.	You see our technologists' results even while the project is being planned and you are ready to take the next step without delay.
Training*	In-person / remote sessions prime your staff on Reactive Architecture, the Akka Platform, Domain Driven Design, or any specialized technology in the solution.	Your staff is better prepared to engage with us and they develop effective and efficient habits.

\* Optional

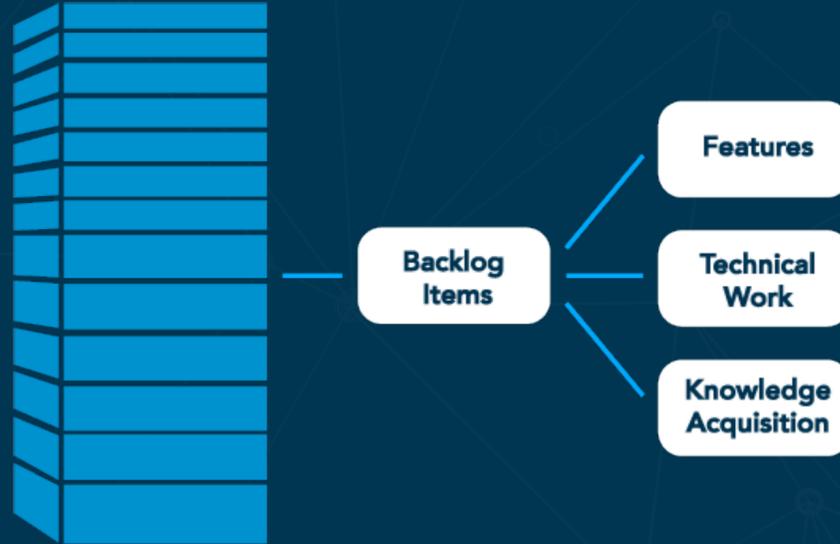
# PLAN

We use these techniques in our planning process.

## Initial Domain Driven Design



## Backlog Capture



## Domain Analysis



## Event Storming



## Epic Analysis



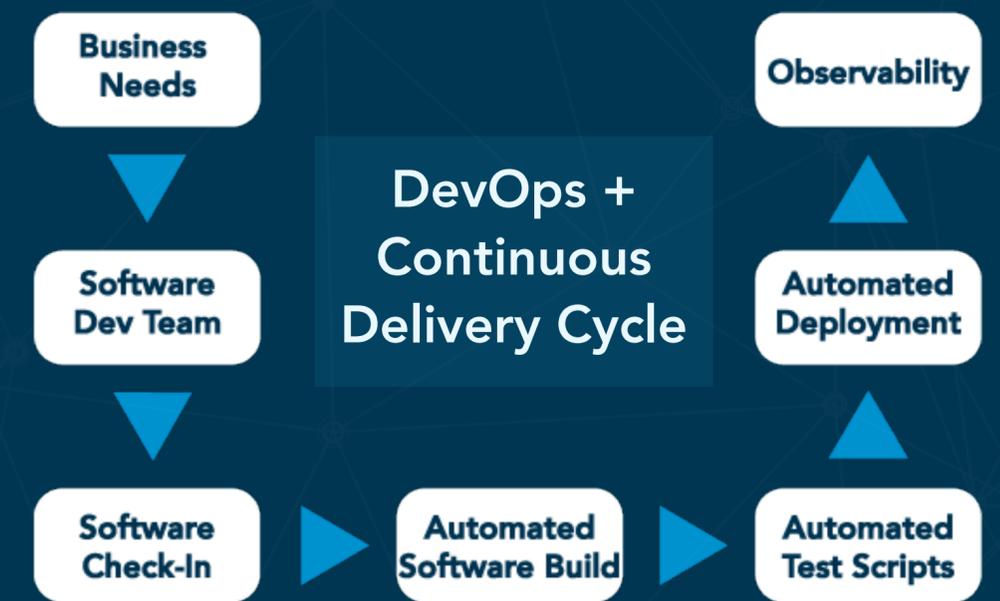
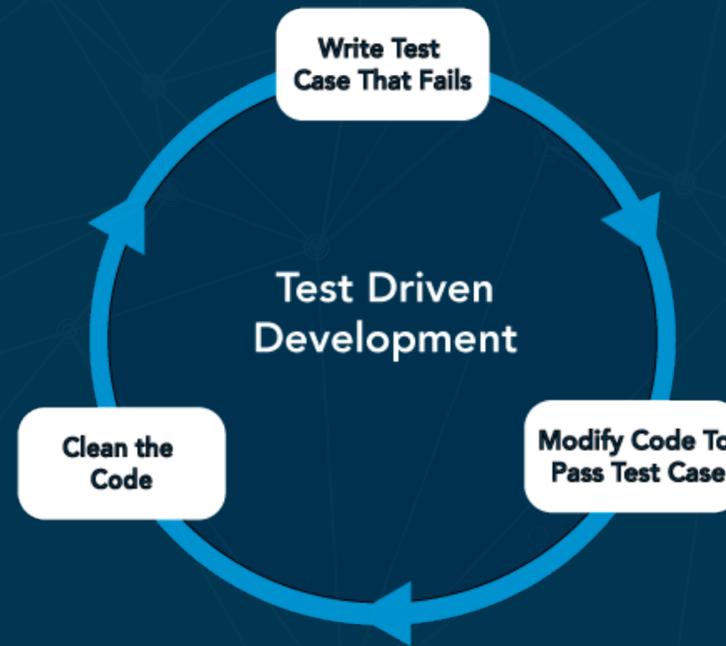
# BUILD

We use best practices derived from Lean, Scrum, Agile, Matrix Management, Team Dynamics, Google 5 Key Factors, and other techniques for producing highly effective technical teams. With these practices, your new system will be implemented correctly, fully integrated and exhaustively tested.

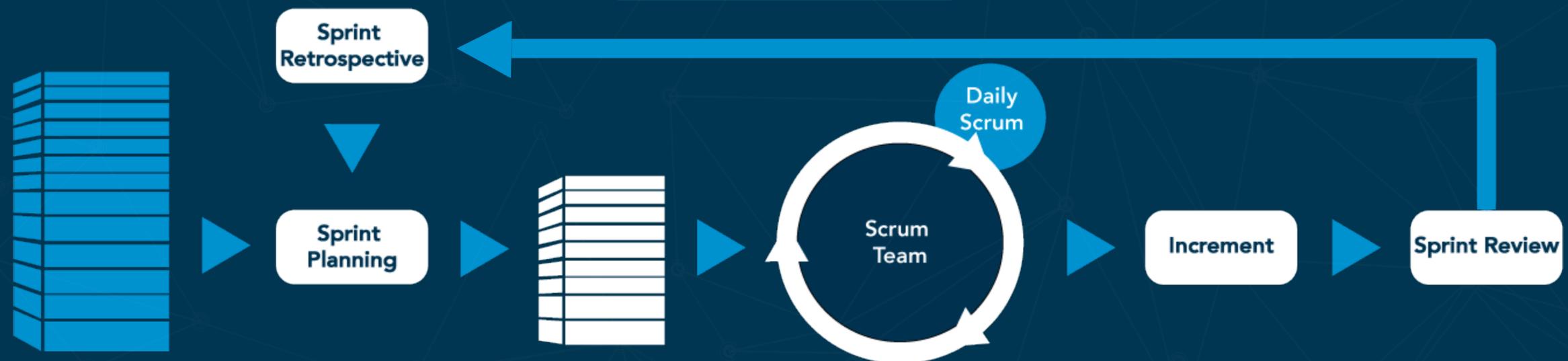
Step	Activities	Benefits
Project Management	Our method is derived from SCRUM, Lean, Agile, and eXtreme Programming. This provides an iterative, evidence-based approach to project management.	You stay engaged in shaping the project's requirements and in correcting the course of the project every week.
Enablement	We train you in the new technologies - working on the project side-by-side or via video conference. Going deeper than online courses, this addresses an issue the moment it arises - the best time to learn.	Your development staff learn, in real-time, about the technologies, processes, and techniques used. We also gain a more in-depth understanding of your domain, for better results.
Software Development	We use best-of-breed technologies like Akka, ZIO, Cassandra, Kafka, Spark, and many others. We use the Scala programming language for its excellent object-oriented and functional programming fusion with a bridge to legacy Java libraries.	You receive a state-of-the-art software system that inherently can scale, recover gracefully from failure, is extremely efficient and secure, and highly-responsive to its users.
Quality Assurance	Continuous, repeatable, and automated QA techniques are used throughout the development cycle. Four eyeballs per change is the ethos of our development culture.	Continuous, high-quality results with very low bug rates or outages.
Automation	The continuous Integration and Continuous Development (CI/CD) system is automated via GitLab or GitHub Actions. Every software change must pass development and testing gates. Staging environments then simulate the real environment.	Your cost for running tests over time is significantly reduced and you are assured of industry-leading quality.
Integrations	Existing legacy systems are replaced using the Strangler Pattern (incremental, phased replacement of existing functionality). Integration with other systems is performed using the Adaptor/Wrapper Pattern (resolving interfacing incompatibilities).	Your new solution integrates with existing and future external systems, with minimum operational disruption.
Metrics & KPIs	We use measurements, metrics and KPIs to provide you with data tables, charts, graphs, etc. that quantify the health of the project as well as the product.	Metrics provide an operational, real-time view of how your business related to the new system is functioning.
Operational Infrastructure	Infrastructure-as-Code (IaC) makes deployments repeatable and automated. To that end, we use the Google Cloud Platform (GCP) development and deployment infrastructure.	Provision multiple environments, no matter how complicated, automatically and typically in under one hour.
Operational Security	We secure & harden the Operational Environment, cutting off avenues of attack from the internet or personnel.	Your system operates without intrusion, disruption or infection.

# BUILD

## Matrix Management



## Scrum Process



# RUN

Step	Activities	Benefits
Technical Support	Using state-of-the-art help desk tooling (FreshDesk), we track trouble tickets, history, etc.	All interactions between your staff and ours is recorded for review or audit.
Continuous Monitoring	Advanced metric collection and graphing monitors the technology and business in parallel. Root cause analysis, diagnostic tools and automated alerting is used.	System issues are quickly identified, and alerts notify us and you of system status.
Develop & Maintain Run Book	Run books are used by operators use to handle situations that arise. With the help of the "Build" phase team, they keep them up to date, using automated tooling for creation and maintenance of the run book.	Mean Time To Resolve (MTTR) is lowered.
Automated Cloud Operations	Routine administrative or operational actions are taken automatically via state-of-the-art software that can also invoke corrective actions if necessary.	Drastic reduction in the probability of operators making "fat finger" mistakes in corrective scenarios.
System Inspection	Your system is inspected by a Site Reliability Engineer regularly for operational efficiencies, threshold breaches, performance or security problems, etc.	Recommended system tuning, stability and performance enhancements scheduled on request.
Disaster Recovery	A plan for loss of a data center due to disaster is determined from a menu of choices. Our Site Reliability Engineer enacts the strategy and includes relevant tests and subsequent system Inspections.	Disaster recovery is tailored to your risk tolerance, recovery time, and cost objectives.
Infrastructure Version Upgrades	As new versions of cloud infrastructure and other third-party software are released for new functionality, security patches etc., this activity plans the upgrades.	You receive a secure system, with on-going upgrades and zero downtime.
Software Version Upgrades	YoppWorks Reactive Systems are built for continuous operations with no downtime for software upgrades. This requires testing to ensure that rolling deployments are problem free, as well as rollback procedures, should problems arise.	Your system receives an automatically testable and provably correct upgrade.
Security & Financial Audits	We will assist with any security and financial audits of the system being run.	Access to technical operational expertise to conduct any audits required.
Metrics Dashboards	A single pane of glass shows system operations and associated business metrics.	7x24 operational visibility.



# YOPPWORKS

**YoppWorks was founded in 2016 with the primary focus of helping organizations modernize their legacy IT systems to cope with modern business demands.**

**An industry leader in Reactive Systems design and implementation, the Scala programming language and Akka development toolkit, as well as Kubernetes deployment and other technologies, YoppWorks' technical staff are acknowledged industry-experts.**

**Contact Us!**

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