# CI/CD
# Fundamentals and Benefits

**CODE - BUILD - TEST - RELEASE - DEPLOY - MONITOR**

# SW development [Challenges vs Goals]

With Traditional development methodologies companies face many challenges

- delayed time-to-market
- high development cost
- long release cycles
- disjoint functioning of IT with business
- poor quality products

With the adoption of new principles of agile, lean practices & DevOps

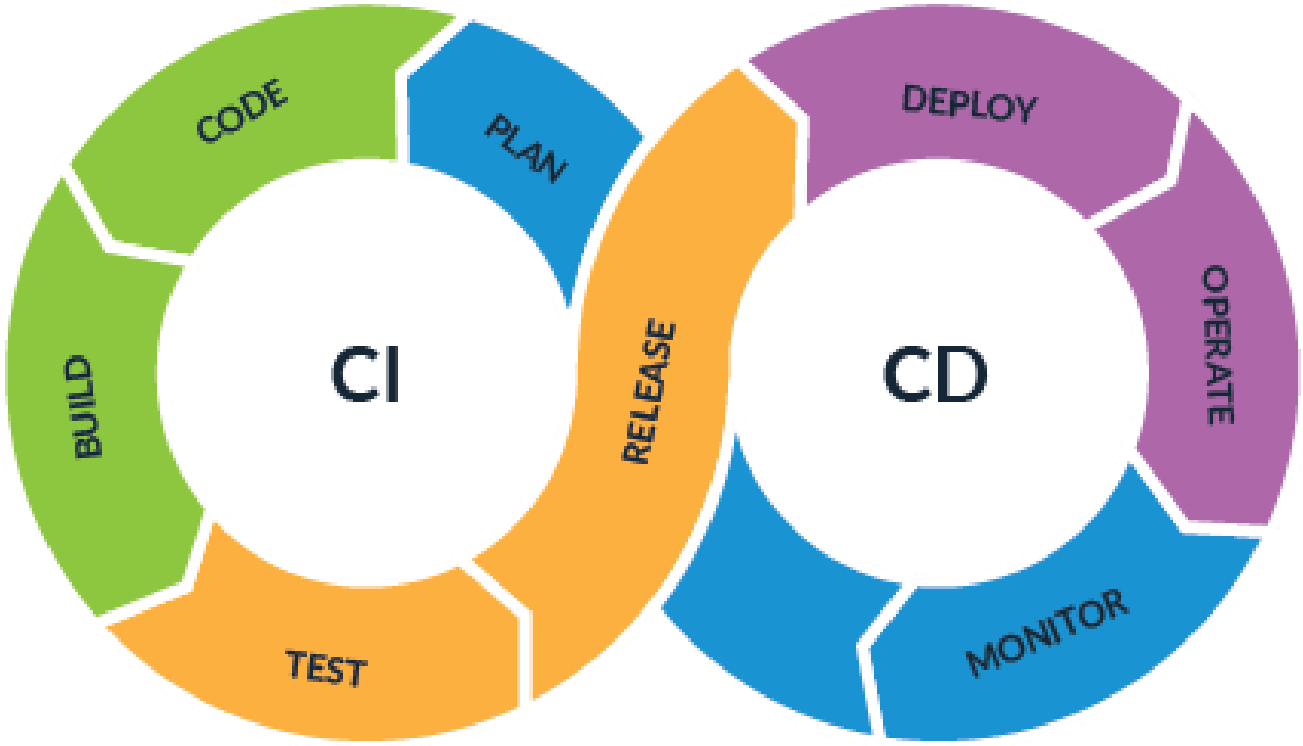
Companies can achieve

- Accelerating Time to market
- Reducing development costs
- Ensure shorter release cycles
- Align with business
- Quality product with continuous testing

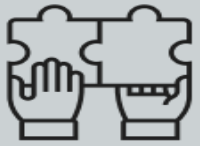
# New principles in SW development [DevOps]

DevOps

- It emphasizes people and culture, seeks to improve collaboration between operations and development teams.
- set of practices and tools designed to increase an organization's ability to deliver applications and services faster than traditional software development processes.



# [DevOps - Drivers]



Greater collaboration

Improved software quality and performance

Reduced development costs

Enhanced business agility

Simultaneous deployments

Shorter release cycles

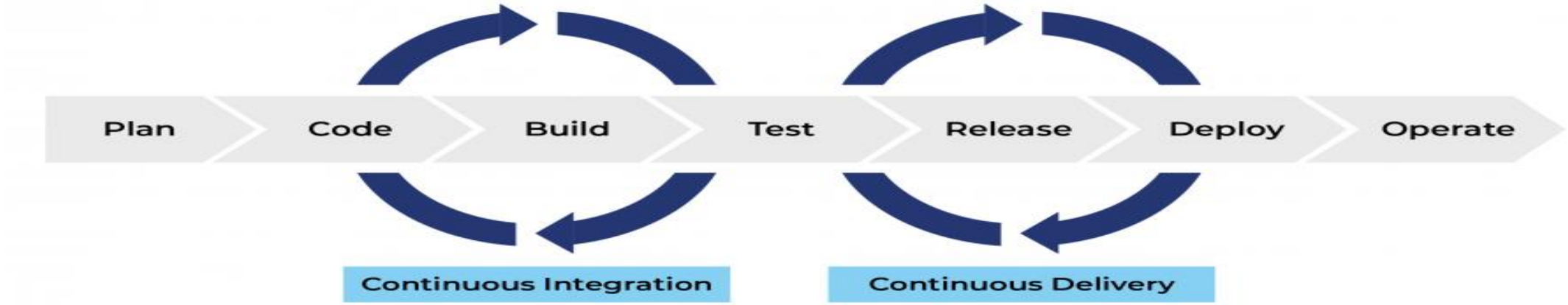
Improved customer experience

Reduced error rates

# CI/CD

Continuous Integration

- where developers regularly merge their code changes into a central repository, after which automated builds and tests are run.
- *Every revision that is committed triggers an automated build and test*
- find and address bugs quicker, improve software quality, and reduce the time it takes to validate and release new software updates.



# CI/CD

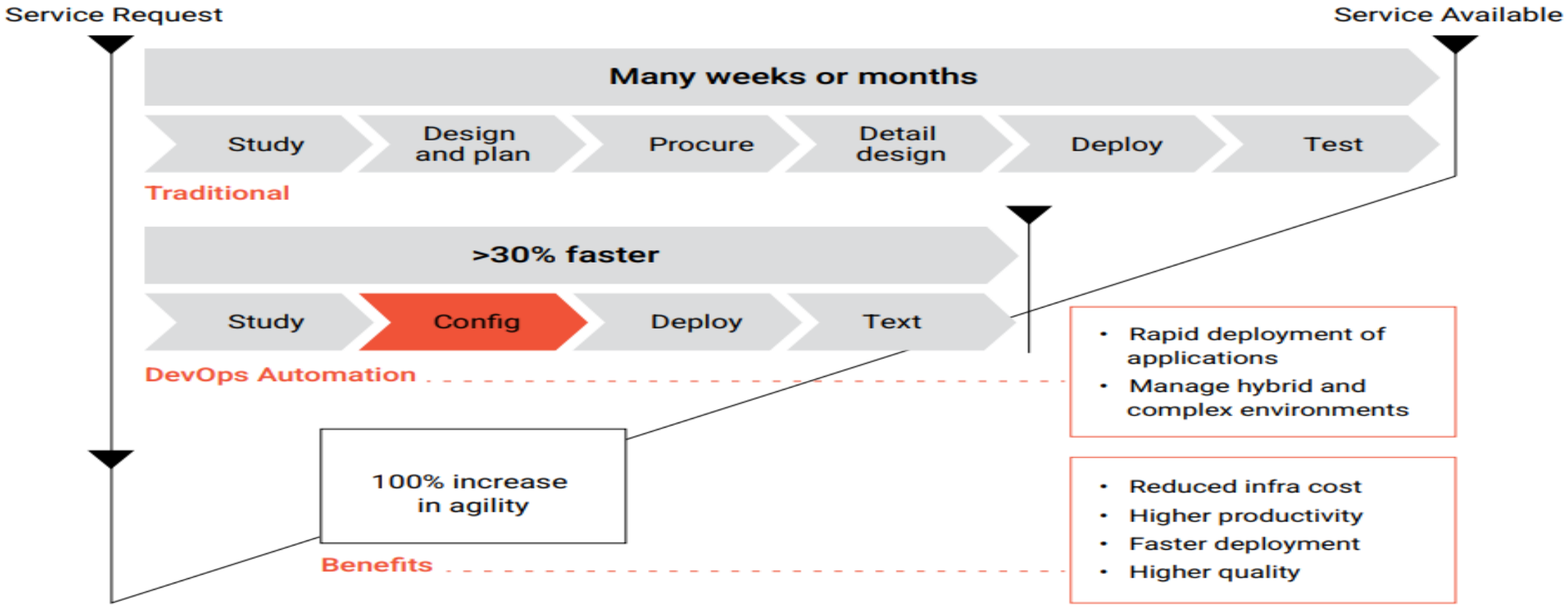
## Continuous Delivery

- With continuous delivery, every code change is built, tested, and then pushed to a non-production testing or staging environment.
- code changes are automatically built, tested, and prepared for a release to production.

## Principles

- Repeatable Reliable Process
- Automate Everything
- Version Control Everything
- Bring the Pain Forward
- Build-in Quality
- Everyone is Responsible

# Time To Market



# Reduce Development Costs

- Reduces process management costs by removing manual overhead
- less overhead to updating services and new features
- Less costs associated with product development and deployment
- leverage best practices of continuous integration and continuous delivery will achieve the required levels of scalability and reliability

# Ensure Shorter Release Cycle

- Reduces process management costs as the overheads generated due to manual interventions get eliminated
- Helps respond quickly to market demands
- Drives frequent and smaller deployments to production
- Pushes frequent product upgrades enabling you to sustain in a competitive market
- Empowers a collaborative workforce that can easily and quickly look into changing customer demands

# Align with Business

- Transforms IT to deliver innovation and agility
- Better collaboration, automation, and process improvement delivering results based on business needs
- Enables you to introduce products faster into the market
- Ensures quality is always a priority with every team
- Drives substantial improvement in overall business performance

# Quality Product with Continuous Testing

- Facilitates automated and continuous quality monitoring
- Enables automated provisioning of virtualized test environments
- Helps in integrated build, deployment, end-to-end test automation and reporting