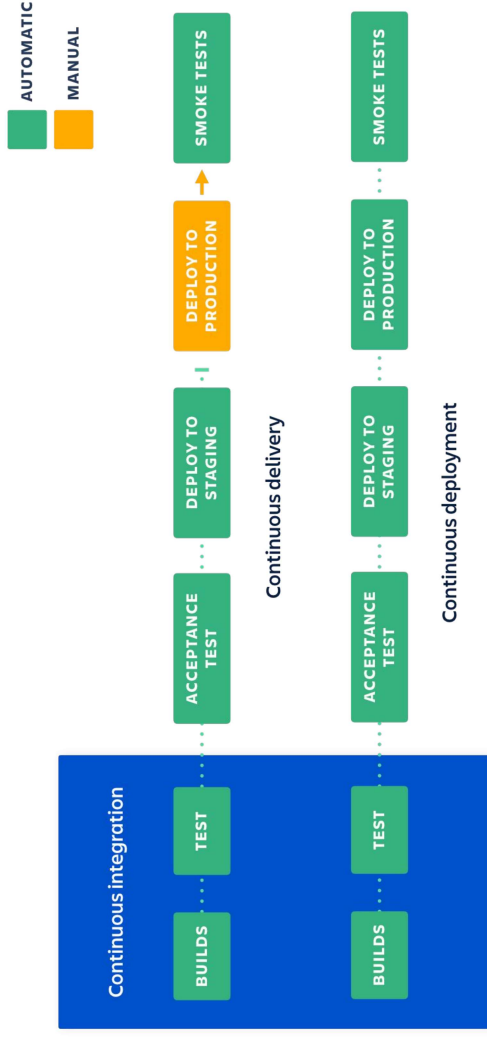# CI/CD Adoption Proposal

UdaPeople

Overview

A proposal to adopt modern development practice in which we deliver value frequently in an automated fashion, with this approach.

What is CI/CD?

CI/CD is a method to frequently deliver value to customers by introducing automation into the stages of app development.

The main concepts attributed to CI/CD are continuous integration, continuous delivery, and continuous deployment.

AUTOMATIC
MANUAL

Continuous integration

BUILDS ···· TEST ···· ACCEPTANCE TEST ···· DEPLOY TO STAGING ···· DEPLOY TO PRODUCTION → SMOKE TESTS

Continuous delivery

BUILDS ···· TEST ···· ACCEPTANCE TEST ···· DEPLOY TO STAGING ···· DEPLOY TO PRODUCTION ···· SMOKE TESTS

Continuous deployment

The current Problems

1 Our manual release process is prone to error and alway causes delay to production, developers spend an average of 6 hours every time we have to make a release.

2 Deployments are very complex and can only be performed by a few experts which requires there availability before value can be delivered to customers

3 Lack of revenue due to low product quality caused by frequent downtimes due to deployment errors in manual process

4 Longer time to integrate changes from different developers which in turn causes the business to miss deadline and customers trust.
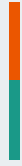
How CI/CD Solves this

CI/CD solves this automating most of the processes to delivering value. It creates more time develop value adding features.

Stage	Before CI/CD	After CI/CD
Coding	Human	Human
Code Review	Human, Subjective, Inconsistent	Human/CI - Static Analysis
Compile/Lint	Human	CI
Merge/Integrate	Human	CI
Run Unit Tests	Human, Hit or Miss, Easily Bought Off with Pressure	CI
Run Integration Tests	Human, Hit or Miss, Easily Bought Off with Pressure	CI
Verify Dependency Security	Human, Often Not Done	CI
Deploy to Test Env	Human, Problematic, Missed Steps	CD
Team Test	Human, Time Consuming	CD - Automated Acceptance Tests
Deploy to Client Test Env	Human, Problematic, Missed Steps	CD
Client Test	Human, Often Unnecessary If Pre-Development Activities are On Point	Human - Maybe Not Needed If We Can Build Confidence
Create Infrastructure	Human, Problematic, Missed Steps, Stressful	CD
Deploy to Production	Human, Problematic, Missed Steps, Stressful	CD
Smoke Test in Prod	Human, Inconsistent	Automated Smoke Tests (Subset of AAT's)
Rollbacks	Human, Problematic, Missed Steps, Stressful	CD
Promoting Production	Human, Problematic, Missed Steps, Stressful	CD

Benefits Of CI/CD

1 Increased revenue from delivering value-generating features quickly

2 Less infrastructure costs from unused resources; CD gives us the superpower to automate infrastructure cleanup saving the business from more expenses due to running redundant infrastructures.

3 Less time to market; with CI/CD, we are able to deploy to production without manual checks that take long time.

4 Prevent embarrassing or costly security holes; CI allows us to detect security vulnerability early for the team to immediately resolve

Thank you.