# Fundamentals and Benefits of CI/CD

UdaPeople

# What is CI/CD?

There are 3 concepts in CI/CD:

1. Continuous Delivery
   - Continuous Delivery is a mindset which teams produce and release value to customers both in short period of time and in an automated fashion.
2. Continuous Integration
   - Continuous Integration is the practice of merging all developers' working copies to the main branch as often as possible. Continuous Integration handles everything that has to do with code.
3. Continuous Deployment
   - Continuous Deployment is an approach in which the value is delivered frequently through automated deployments. Continuous Deployment handles everything related to deploying the artifact.

Continuous Integration + Continuous Deployment = Continuous Delivery

# Benefits of CI/CD

*Increase Revenue*

The adoption of CI/CD will increase UdaPeople's revenue with the following benefits:

1. UdaPeople will be able to release new value-generating features more quickly and frequently.
2. Customer orientated features identified by the product management team will have less time to the market.

These benefits not only can allow UdaPeople to win over customers heart, but also make sure competitors have a hard time trying to catch up.

# Benefits of CI/CD

*Protect Revenue*

One of the identified revenue lost for UdaPeople is customer churn due to product crash.

By implementing CI/CD, we could achieve revenue protection by achieving the followings:

1. By utilizing automated testing during deployment, we can reduce downtime from a deploy-related crash or major bug.
2. In case of any job failure during deployment, we can quickly undo and return production to working state.

# Benefits of CI/CD

*Reduce Costs*

With CI/CD, UdaPeople could achieve cost reduction by more efficiently utilizes of resources.

Automated process within CI/CD enables efficient utilization of resources:

1. Developers can spent more time on developing new features instead of spending time on issues arised from new developer code.
2. UdaPeople will spend less infrastructure costs from unused resources.

# Benefits of CI/CD

*Avoid Costs*

With CI/CD, UdaPeople could avoid additional costs by achieving the followings:

1. Automated tasks are more predictable and thus there will be less human error and achieve faster deployments.
2. Automated testing process in CI/CD pipeline leads to lesser bugs in production and lesser time in testing.

# Conclusions

- The main challenges of implementing CI/CD is it requires a large amount of investment in UdaPeople's software delivery infrastructure.
- However, the benefits highlighted on previous slides provide benefits to the company in the long run.