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Section 1

Getting Started – DevOps Concepts, Tools, and Technologies

In this Section, we are going to take a look at...

- Understanding the DevOps movement
- The DevOps lifecycle
- Tools and technologies
- An overview of a sample Java EE application

DevOps for Web Developers

Mitesh Soni

Video 1.2

Understanding the DevOps Movement

In this Video, we are going to take a look at...

- Understanding the basic concepts of DevOps
- Changing to push dates to satisfy customers

Implementing New Features

- The development team writes code to implement a new feature or fix a bug
- The new code is tested by the development team
- The code is provided to the operations team for deploying it to the production environment
- The operations team is responsible for managing and maintaining the code

Possible Issues

- It takes weeks or months to transition of the current application
- Effective, efficient co-ordination becomes a necessity for smooth operations
- The development team is focused on the latest development release
- The operations team cares about the stability of the production environment
- The development and operations teams are not aware of each other's work

Possible Issues

- Both team works in different types of environments
- The operation team works on production resources
- Both team will work under the same set of assumptions
- Manual work involved in setting up the runtime environment
- The development team provide some executable files to the operation team

Possible Issues

- Artifacts are verified on the development environment
- Each team take a different approach for setting up the runtime environment
- The deployment process needs to be documented for future usage
- Maintaining the documentation is a time-consuming task
- Both team can use different automation techniques

Possible Issues

- Both teams are unaware of the challenges faced by each other
- The development team get another request for a feature implementation or bug fix
- Poor collaboration causes many issues in the application's deployment to different environments

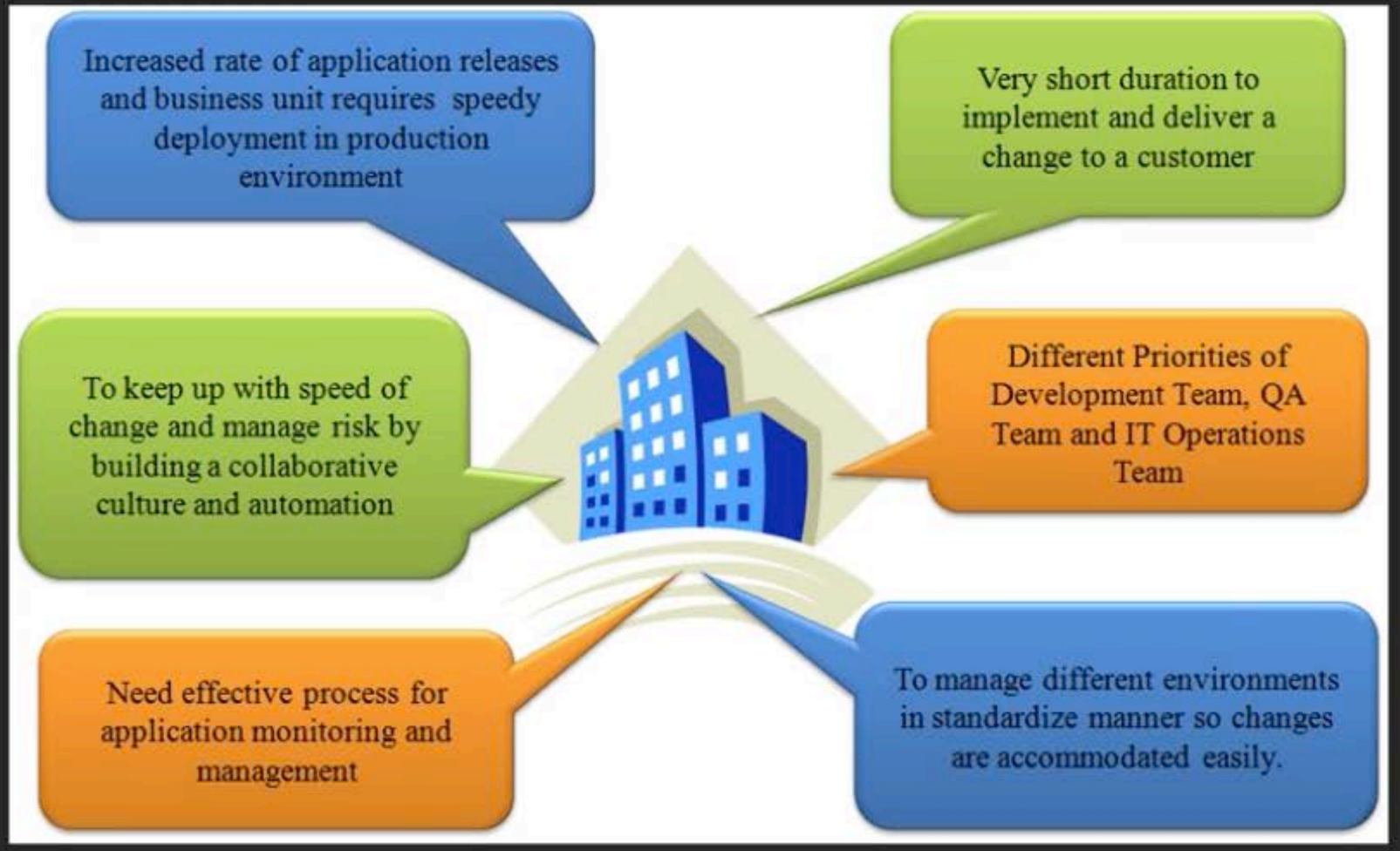
Challenges for Development Team

- The competitive market creates on-time delivery pressure
- Production-ready code management and new feature implementation is taken care of the development team
- The development team has to make assumptions before the application deployment

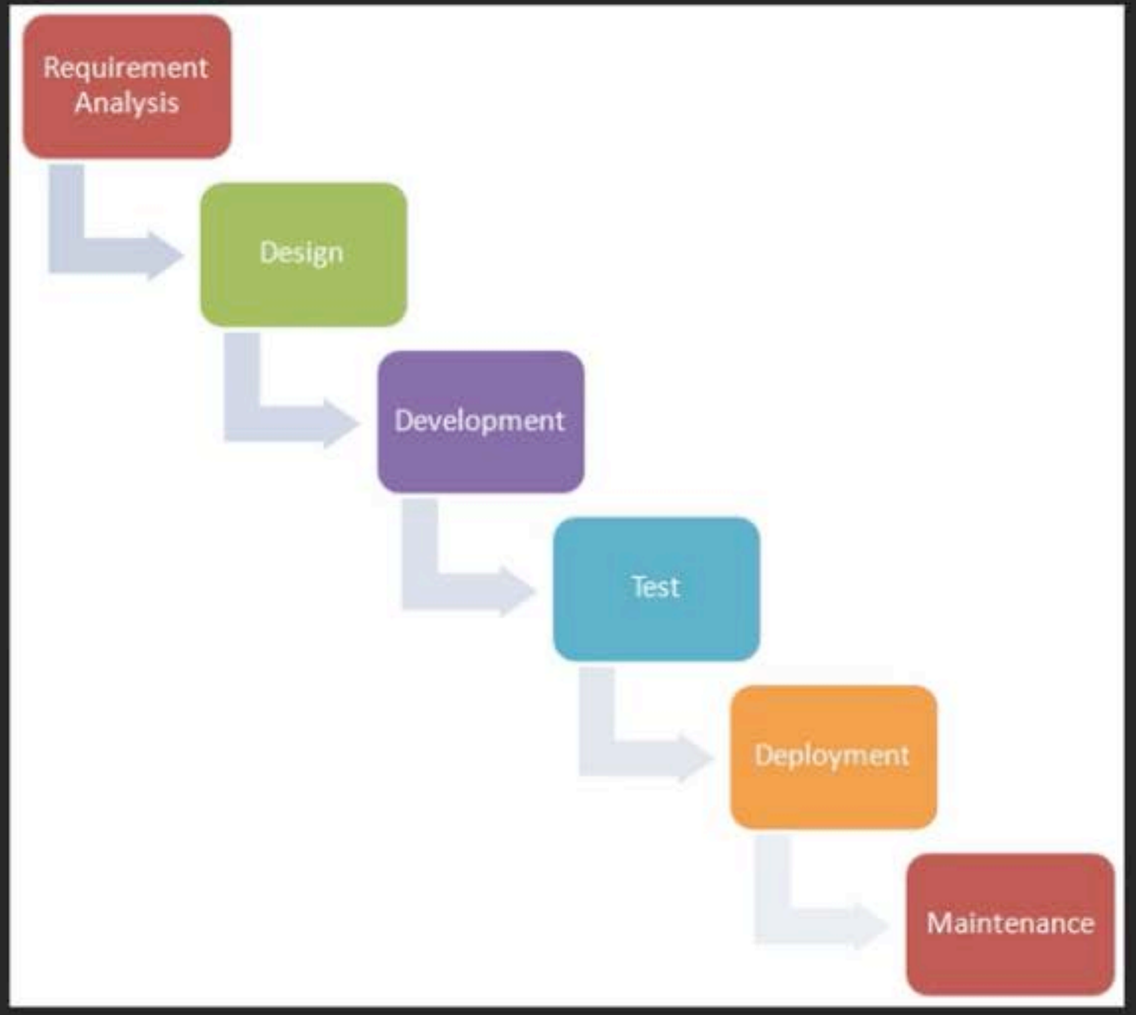
Challenges for Operation Team

- Resource contention
- Redesigning or tweaking
- Diagnosing and rectifying

DevOps with Changing Times



Waterfall Model



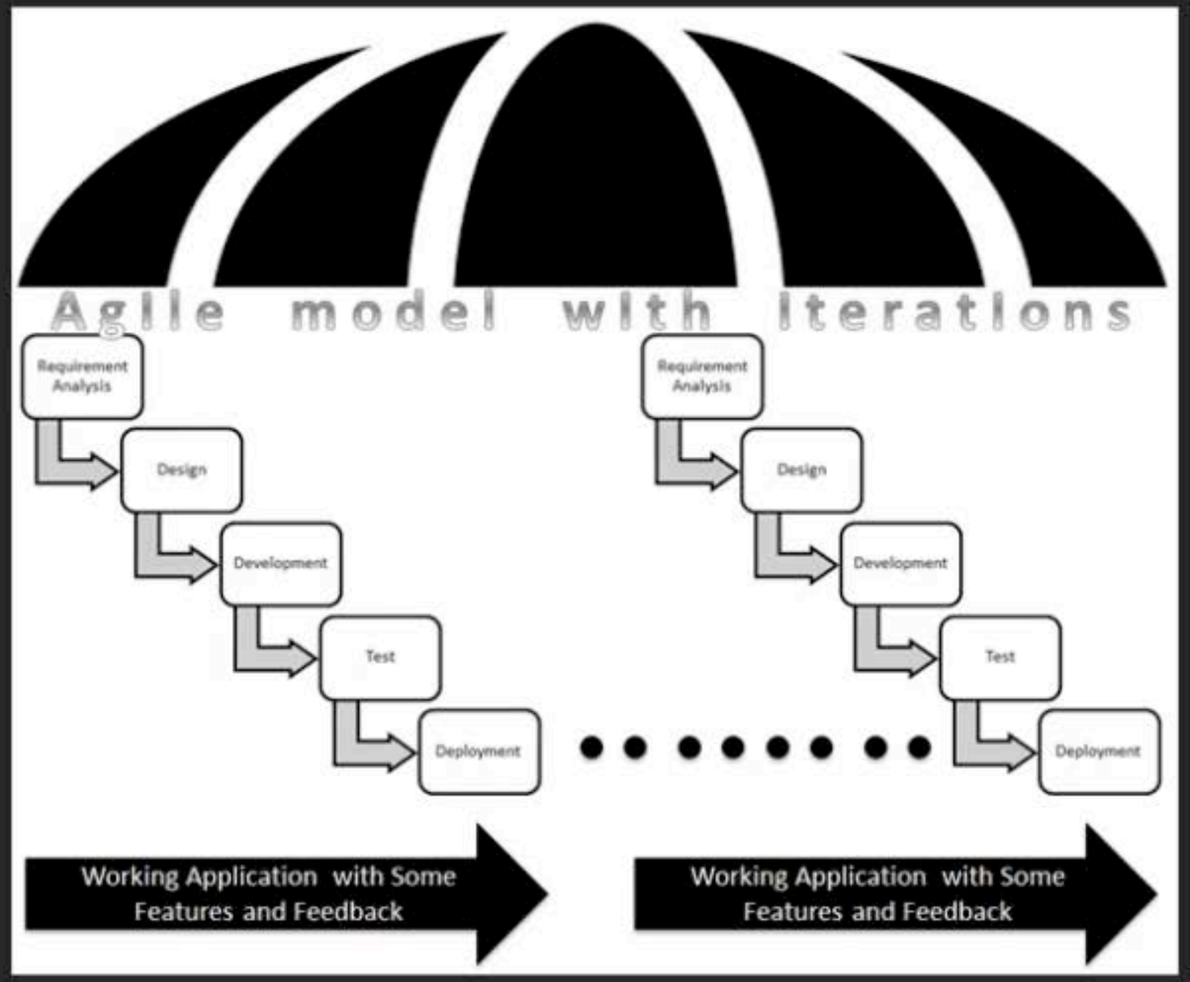
Advantage of Waterfall Model

- Easy to understand
- Easy to manage
- Sequential process
- Better control

Disadvantage

- No revision
- No outcome or application package until all phases are completed
- Not possible to integrate feedback until all phases are completed
- Not suitable for changing requirements
- Not suitable for long-term and complex projects

Agile Model


Agile model with iterations
Requirement Analysis
Design
Development
Test
Deployment
Requirement Analysis
Design
Development
Test
Deployment
Working Application with Some Features and Feedback
Working Application with Some Features and Feedback

How Agile Works in Organizations

- To meet changing demands of customers
- To make it more efficient, communication, and collaboration
- Traditional manual deployment processes work as speed barriers
- Understand that agile is customer focused and feedback is vital
- The agile approach of application development, improvement in technology, and disruptive innovations

Collaboration

- Emphasizes communication, collaboration, and integration between software developers and IT operations
- Promotes collaboration, and collaboration is facilitated by automation
- It is a combination of agile practices and processes leveraging the benefits of cloud solutions

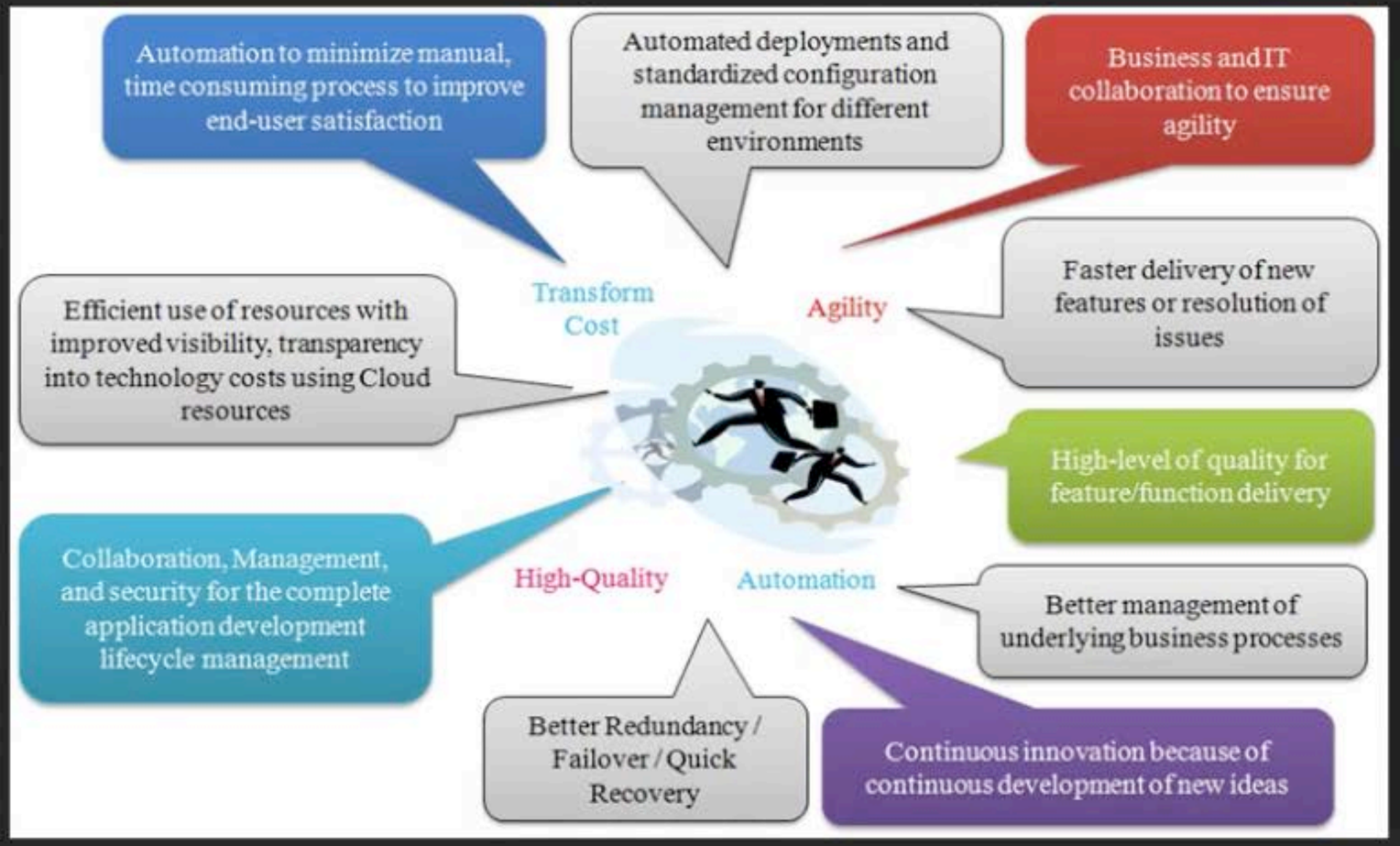
Cloud Computing

- The cloud helps us overcome this hurdle by providing flexible on-demand resources and environments
- The cloud provides a repository of software tools
- The entire development, test, and production environments can be monitored
- Easy to recreate the production environment exactly in an automated fashion
- Provide a distributed agile environment in the cloud, leading to continuous accelerated delivery

Why DevOps?

- DevOps is effective because of new methodologies, automation tools, agile resources of cloud service providers
- It is important to establish the pain points and obstacles experienced by different teams or business units
- Identify the common issues faced by different sections of an organization
- It is difficult to adopt any new path
- It is very important to align people with the new process first

Benefits of DevOps



Next Video

The DevOps Lifecycle