LAB 2: UNDERSTANDING DEVOPS THROUGH A CASE STUDY

Aims:

- Read Chapter's 1 and 2 in The DevOps Handbook – How to Create World-Class Agility, Reliability and Security in Technology Organisations by Gene Kim, Jez Humble, Patric Debois and John Willis. This is available in the library: https://rl.talis.com/3/notts/lists/EDCA0F02-AE7C-304A-7596-DDEB8806EF3A.html?lang=en-GB. You are welcome to research other online materials to gain knowledge on DevOps and its principles.

Instruction

Work in your 2nd year group project and submit these slides here [https://moodle.nottingham.ac.uk/mod/assign/view.php?id=8672211]. It is okay if one person from you team submits.

You can use pen and paper when you start the analysis, then take a picture and insert it into the PowerPoint template provided.

Case study – DevOps Transformation

You are about to implement DevOps in an organisation, either in your own organisation (where you are tasked with leading the effort) or as consultants (where you are called in to support an organisation). This means a transition from a traditional development and operation-oriented organisation into an organisation building on the principles of DevOps.

Use the following organisational diagram as a starting point. You can assume the organisation consists of approximately 100 people and that they are all located at the same physical location.

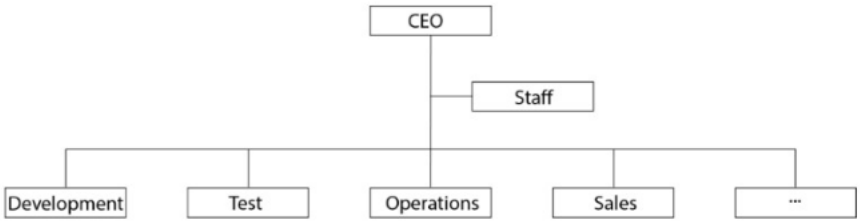

Figure: 1

The development department consists of three teams (10-15 people each) that uses a combination of waterfall and scrum processes (each team uses its own process) and the teams produce three web applications that share some data through a common database.

The teams are responsible for their own tooling, e.g. version control and automation of process, as they see fit. The teams are responsible for functional testing of their own applications.

The test department is responsible for (manual) integration and acceptance tests. The test team then hands over the applications to operations for deployment to the production environment.

The operations department is responsible for the deployment and operation of the applications. The applications run in Google's cloud infrastructure.

The sales department is responsible for sales, support and collecting user requirements for improvements and new functions for the three applications.

The primary means of communication in the organisation is through informal emails.

Now you are called in to help the organization transition to DevOps to improve the development and deliverance of the applications to ensure the business will survive.

Task 1 – Create a list of challenges, assumptions and implications

Analyse the above organization and **list the challenges** you see that it faces. You may need to make **assumptions** about the organisation if information is not present. Write down the challenges you identify and the assumptions you make in a systematic manner stating what **implications** that follow from them. You can use your own experiences and imaginations to make the analysis. There is no wrong or right answer provided you make **assumptions and implications** clear.

Task 2 – Create a plan

Create a plan for applying the principles of flow to the organisation taking both organisational and technical issues into consideration e.g. should you change the organisational structure, think about how you would restructure the above organization and culture, tools they can incorporate, pause development for a while (remember this may have implications), what will be the most valuable tasks, how would you implement some of the DevOps practices. **Note:** You might have to skim further chapter of the recommended textbook. Suggestions for items to include (not exhaustive): objectives, timeline, responsibilities, actions, tools, documents.
Remember: the plan must be operationalizable, i.e. you should be able to execute it and hand it over to someone else that can execute it.

The plans you have created are now on their way to be approved by the management of the company, but the CEO has read about a third principle of experimentation and learning (he was on an airplane and stumbled over an article in Harvard Business Review that promised two digit growth rates if you get it right) and wishes to know if the plans you have been making take this principle into account.

Specifically, the CEO is interested in knowledge creation in general and the knowledge creation that results from the different items in the plan (I.e. how do the items in the plan support knowledge creation) and how this knowledge is shared across the organization. He is also interested in knowing if the culture in the company is suited to adapting the experimentation and learning principles – and if not – what should be done about it.

You must go back to the drawing board to give your plan an overhaul to ensure that it also accounts for the third way.

Task 3 – Continuous Improvement

Evaluate the plans you have made so far considering the third way:

- Which of the items in the plan affect experimentation and learning (positively or negatively)?
- What are the consequences of the actions and what do you need to change to accommodate the third way?

Suggest new items to the plan:

- Apart from the actions already suggested in the previous step you may need to implement further actions to accommodate the third way. Suggest actions that specifically address the third way.

Suggest improvement for the complete plan

- Based on your analysis and additions above, iterate on your plan and suggest improvements and changes (content, sequencing, effort, involved people or parts of the organization, etc) needed to implement all the three ways.

For the sake of this exercise, you may assume the plans you have made can be implemented as you have intended/described, i.e., if you implement version control, you may assume that it is working as planned. If necessary, you can make other assumptions as well.

Deliverable: Submit PowerPoint in the submission area for the lab