ATLANTIC TECHNOLOGICAL UNIVERSITY

ASSIGNMENT COVER SHEET

To Be Completed by The Student

Lecturer’s Name: Ms. Ruth Lennon

Assessment Title: Broken Legacy Code

Submission Date: 31/08/2023

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Course / Stage PgDip in DevOps

Subject/Module: IaC for DevOps Pipelines (2022/23)

Word Limit: Actual Word Count: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I confirm that the work submitted has been produced solely through my own efforts.

Student’s signature: Goran Kraljic Date: 31/08/2023

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# 1. DevOps implementation framework

Situation described in assignment presenting us with situation where resources are very limited. Company suffers from high attrition. High attrition always brings significantly reduced capability for change. This reduced capability is because of lost knowledge. Other negative knock on effects are felt across the company in form of increased workload, increased backlog, constant increase of technical debt, high dispositional resistance, failed change initiatives and projects.

Employees are aware that company is failing and that job security is just a distant memory. This kind of situation weighs heavy on everyone and personal initiative is almost non-existent.

Most of employees and management are in constant fire-fighting mode where shortcuts are taken in order to tackle one fire but these same shortcuts create another fire. All mentioned elements are root cause for ever increasing technical debt which in turn leads to longer and longer time to market and customer dissatisfaction or worst case scenario customer attrition.

Company correctly identified that structural changes won’t make any improvement in their situation that only thing that can help them is cultural change which must start from inside of the company. Cultural change cannot be pushed, cultural change must be offered and it must involve all the stakeholders.

Modernization of internal processes requires participation of all stakeholders from ground up and processes needs to be assessed from the point of view that every individual process is element of much larger system. This is extremely important because it is part of human nature that middle level management looks only their own area of responsibility and solution in one area often creates problem in another area of responsibility.

Since this is first attempt of the company to bring in DevOps introduction of The Three Ways framework is a necessity. The Three Ways is bottom-up approach which will utilize all remaining resources in company. It will help all stakeholders to learn about company and it will build “tribal knowledge” based on actual cases. The Three Ways will immediately tackle most common pitfalls which are damaging to whole organization: unplanned work, status of work in progress, technical debt, resource availability, communication feedback loop, constraints identification, work release, standardization of recurring work.

Emphasis will be on use of existing resources. My team consists of Ren and Jalen.

Ren is senior engineer with a lot of experience within the company. He was in a company from very begging but unfortunately he worked on only one product and this product is discontinued. From him we won’t gain much from innovation or modern approaches but we will get wealth of information about internal processes and current state. My first goal is to secure a buy in from him in order to utilise him as person who will point me to individuals which I will need to tackle existing problems. Another extremely important role for him will be to promote DevOps on individual level where he would alleviate fear of change in other experienced employees and normally convey findings back to me.

Jalen is a new graduate and it has natural desire to prove himself. This project is for him precisely what he needs. Due to this he will be willing to accept changes and new technologies and methodologies. This makes him crucial part of the team for all types of work that will require innovation and learning. He will be ideal support to teams that will work on code modernization and he will serve as person who will enhance feedback loop between operations and developers.

## 1.1 Steps in new DevOps implementation framework

Since company is in difficult situation and time and resources are very limited focus in this new approach is on cost saving and time to market. It involves research, experimental part and testing but limited only to internal processes. Most important feature is that this framework is completely scalable and as in-company processes mature it will prepare the groundwork to implement more comprehensive framework like CALMS which would tackle all aspects of organization.

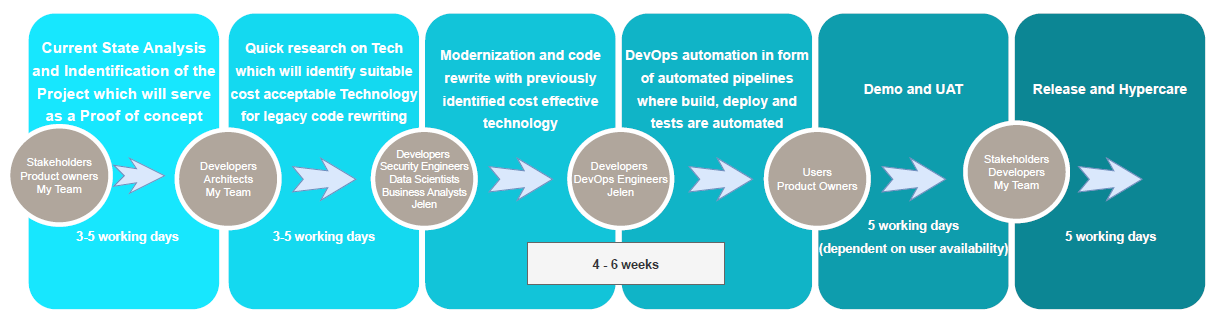


Fig. 1: Steps in new DevOps implementation framework

### 1.1.1 Current State Analysis and Identification of the suitable project

In this step information’s about current state of business will be gathered so my team can identify problems and opportunities. We will identify all stakeholders, define scope of the analysis, gather data, analyse gathered data and do a basic documentation of findings.

During defining the scope, we will identify specific area of our attention.

Data gathering will have two steps. In first one we will skim through available official data and identify the patterns and in second step we will use interviews to get more visibility and clarity on gathered data from key stakeholders.

Focus of this step is to identify suitable project which will demonstrate that DevOps can bring significant cost saving and improve time to market for company products. Ideally without of bringing additional manpower into equation.

### 1.1.2 Quick research on Technology for legacy code rewriting

In this step with help of stakeholders we will define the requirements, identify available technologies, evaluate this technologies, talk to developers which actually are working with considered technology and do a basic test. Test is required in order to confirm that selected technology is in line with our previously defined requirements.

In evaluation my team and stakeholders will focus on maturity of technology, general popularity of evaluated technology, extent of community support and above all security.

During evaluation strong consideration will be on existing skills of my team member Jelen, the budget available and the timeline available. Chosen Technology stack cannot require extremely complex training.

### 1.1.3 Modernization and code rewrite

# Code modernization framework

# Conclusion