# APPENDIX B: Interview Protocol for Case Study

EXAMINING THE FACTORS DRIVING DEVOPS ADOPTION

*Interview Protocol*

*Department of Electronics, Telecommunication and Internet*

*Gdansk University of Technology, Poland*

my name is Imeh Akpan, a graduate student at Gdanks University of Technology studying informatics with a focus on distributed applications and the internet. Regarding my master's thesis, I have identified 8 DevOps perspectives and 12 DevOps adoption drivers based on data gathered from the scholarly literature. This interview is designed for practitioners with DevOps and software product delivery experience from the industry or combined sectors of academic and industrial experience for the purpose of evaluating and validating these findings. Questions are asked, and the participants are expected to respond depending on their expertise. The duration of the interview is between 45 and 60 minutes. I want to record this interview so I can listen to it, synthesize and analyse it. All information will be kept private.

***Consent***

I've read, comprehend, and have had a chance to ask questions about the material provided. I freely consent to participate in this study.

Candidate’s signature…………………………………Date………………………..’…………….

Researcher’s signature………………………………. Date……………………………………….

**Interviiew Questions**

1. What is the approximate size of your organization?

(a) 1 – 500 employees

(b) 501 - 999 employees

(e) 1000+ employees

2. What is your current main working role?

(a) Software developer / Software engineer

(b) Software architect

(c) Project manager

(d) Quality assurance / Test engineer

(e) Operations staff / System administrator

(f) Other

3. Has DevOps been adopted or used in your company?

(a) Yes (+)

(b) No (-)

(b) We are evaluating it (+).

4. How are operations and development structured inside your company?

(a) Separate development and operations teams that work closely together (b) Separate development and operations teams that have a facilitator (either a person or a team) in the middle of them

(c) Operations are handled by a small team under the control of the development team (d) There is no apparent operations staff.

5. Based on what you understand the term "DevOps" to signify, how much do you agree or disagree with the statements below? (1 - 5)

(a) Increasing software process automation (b) shifting operations' responsibility to development (c) delivering software changes faster without interrupting system operations

(d) cross-functional cooperation within and between teams, especially software development and operations

6. At what level have you applied DevOps (maturity level)? (+)

(a) In specific projects

(b) At team level

(c) At product level

(d) At organization level

7. What specific DevOps practises do you currently follow or/ are seeking to implement as part of DevOps initiative? (+) (1 – 5)

(a) Automation and tool support for test, deployment, infrastructure

(b) Monitoring of software application by development, including customer usage behaviour

(c) Software architectural changes to microservice system architecture

(d) Collaboration and team reorganization between development and operations

8. Would you agree or disagree with the following as factors driving your devops adoption and implementation? (+) (1 – 5)

(a) Agility and speed in release process

(b) Policies and organisational structure

(c) Automation

(d) Deployment of cloud-based applications

(e) Top handle technological disruption and system downtime

(f) Deman for quality

(g) Continuous improvement

(h) Flexibility and digital transformation

(i) Efficient vlaue delivery and operational efficiency

(j) Soci-technical issues

(k) External pressures

9. How would you agree or disagree with the following as factors that can contribute/will contribute to successful DevOps implementation? (+) (1 – 5)

(a) Availability of supporting technology e.g., Docker, cloud computing in embedded systems

(b) Trialling DevOps initiative to selected one or a small group of pilot applications

(c) Support from customer, management and teams

(d) Clear understanding of what DevOps means to our organization including

identification of concrete improvement areas

(e) Usage of agile practices / ideology

10. Why has DevOps not been applied to your team? (-) (Select multiple)

(a) Cultural inhibitors

(b) Fragmented processes

(c) Lack of management support

(d) Lack of resources e.g., for acquiring new tools and expertise

(e) Weak tool support

(f) Lack of support for security and regulatory compliance

(g) Misalignment of tools between software development and operations activities

(h) Lack of proper monitoring tools

(i) Lack of knowledge / expertise about DevOps

(j) Other

11. How would you agree or disagree with the following benefits of applying DevOps in practice? (1 – 5)

(a) Improves release cycle time

(b) Improves system quality

(c) Improves traceability of system changes

(d) Improves organizational collaboration

(e) Improves employee engagement

(f) Improves decision making in product development

(g) Improves efficiency of operations tasks in development

12. How would you agree or disagree with the following challenges of Devops? (1 –5)

(a) Lack of common understanding for DevOps concept

(b) High demand for skills and expertise on DevOps

(c) Limitations imposed by legacy systems

(d) Limitations imposed by heterogeneous environments

(e) Limitations imposed by application domain

(f) Difficulties in automating system testing

(g) Difficulties in managing database schema upgrades in rapid and continuous releases.

13. How would you agree or disagree with the following challenges of Devops? (1 –5)

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(f) Difficulties in automating system testing

(g) Difficulties in managing database schema upgrades in rapid and continuous releases

14. Can you answer more technical questions?

(a) Yes

(b) No

13. What type of application/system development are you working on or involved with? (Select multiple)

(a) Cloud applications

(c) Embedded systems

(b) Web applications

(e) Desktop applications

(d) Mobile applications

(f) Other

15. How many people make up the typical development team for the system you are now developing?

(a) 1 – 5 persons

(b) 6 – 10 persons

(c) 11 – 20 persons

(d) 21 – 50 persons

(e) 51 – 100 persons

(f) 100+ persons

16. What is the release cycle time of software update to production of the system you are involved or currently working on?

(a) Not defined

(b) Daily

(c) Weekly

(d) Monthly

(e) Several months to one year

(f) More than a year

(g) Not in production

(h) Other

17. How well does your company employ continuous integration and improvement for projects?

(a) In all projects

(b) In most projects

(c) Only in few projects

(d) Not at all

18. What is the commit frequency or how often do the developers commit to mainline?

(a) More frequently than daily

(b) Daily

(c) Less frequently than daily (-)

19.If you were to think about the causes of less frequent commits to mainline, how would you respond to the following statements? Would you agree or disagree? (-)

(a) It is hard to split certain feature to smaller pieces

(b) There is no evident value when delivering changes

(c) Delivery process is time-consuming or it is too complicated to deliver changes

20. How would you agree or disagree with the following statements of CI/CD best practices

in your software development process?

(a) Daily commits to mainline

(b) New code is reviewed by other developer(s)

(c) Successful CI build presumes that all automated tests have passed

(d) A significant portion of all testing activities are automated

(e) Deployment to production is trivial and can be performed at any given moment

(f) Immediate communication of CI status to team members

(g) Fixing detected faults is top priority

21. How would you agree or disagree with the following statements about benefits of continuous integration? (1 – 5)

(a) Improves communication between developers

(b) Improves developer productivity

(c) Improves project predictability

(d) Improves developers’ ability to effectively deal with rebasing and merging

**Open ended questions**

1. Is the process from code commit to test or production environment automated?

2. What goals is your organization trying to achieve by adopting DevOps?

3. How do you measure the achievement of these goals related to your organization 's DevOps implementation?

4. Which of such continuous software engineering practices are being exercised

within your organization?

1. Is the process from code commit to test or production environment automated?
2. What approach or strategy are you currently using in your DevOps journey
3. What is the basic difference between model and framework in software development?
4. How would you instantiate their use case in your organization?
5. What limitations surrounds the use of models and frameworks?
6. Are the framework and models from the literature sufficient?
7. If no, could you please mention the one you have adopted or want to adopt?