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## Assignment: Phoenix Pay System Case Study

The Phoenix Pay System was a payroll processing system implemented by the Canadian government in February 2016 to replace the outdated system for its employees. The goal was to streamline and modernize the payroll process, save money and reduce the workload of government employees responsible for payroll.

For this case study assignment, you will examine the failure of the Phoenix Pay System and the role software played in the incident.

### Instructions

Class time may be scheduled for this assignment, which should take no longer than 90 minutes.

1. Working in groups, as indicated by your instructor, read the articles below on the Phoenix Pay System to understand the scope of the incident.
  - [Phoenix Pay System](https://en.wikipedia.org/wiki/Phoenix_pay_system) ([https://en.wikipedia.org/wiki/Phoenix\\_pay\\_system](https://en.wikipedia.org/wiki/Phoenix_pay_system))
  - [IBM contract cost for failure-plagued Phoenix payroll system jumped to total \\$185M](https://www.cbc.ca/news/canada/ottawa/phoenix-ibm-contract-union-pay-government-1.4295827) (<https://www.cbc.ca/news/canada/ottawa/phoenix-ibm-contract-union-pay-government-1.4295827>)
  - [Phoenix turns two: Pay problems continue as government scrambles to find a fix](https://ottawacitizen.com/news/local-news/phoenix-turns-two-pay-problems-continue-as-government-scrambles-to-find-a-fix) (<https://ottawacitizen.com/news/local-news/phoenix-turns-two-pay-problems-continue-as-government-scrambles-to-find-a-fix>)
  - [Federal government encountered “unanticipated complexity” in rolling out payroll system](https://www.itworldcanada.com/blog/phoenix-payroll-report-by-michael-wernick-the-clerk-of-the-privy-council/385370) (<https://www.itworldcanada.com/blog/phoenix-payroll-report-by-michael-wernick-the-clerk-of-the-privy-council/385370>)
  - [Phoenix 'nightmare' still haunting public servants, more than 6 years on - 2022](#)
  - [Phoenix pay backlog hovers at 200,000 transactions - 2023](#)

2. Analyze how software contributed to the failure of the Phoenix Pay System by answering the following questions:

- a. In three to four sentences, summarize the issue presented in the articles. (2 marks)

The software was put out too early and was filled with bugs and glitches as well as training on the software being inadequate lead to many missed payments and errors while making payments. There were too many amendments that were made to the phoenix pay system along the course of rolling out the different stages of the software

which was not the original plan which cost over 185 million dollars from the original 5.7 million for the contract. One of the most important issues raised in the articles were the performance issues of the system because they underestimated the data volumes and the number of end-users for the system.

- b. **List three major groups responsible for parts of the implementation of the payroll system. How were they responsible? (3 marks)**

**Note:** These groups can be technical or non-technical.

**The software development team** – They were not given enough time to fully develop the system.

**The stakeholders** – They pushed for the systems to be released early without thorough testing or proper bug fixing.

**The management staff** – They did not provide adequate training for the employees on the system leading to human errors.

- c. **List two major groups that were impacted by the failures of the payroll system and how they were impacted. (2 marks)**

**The employees** – Most directly and heavily impacted by the payroll system, they were subject to technical difficulties within the system leading to overpayment, underpayment and overall budgeting errors.

**The government** – they spent way more money on this project than they had anticipated with the failure of the project and the money they own for overdue payments and the cost of the upkeep of a failed project.

- d. **There were many contributing factors that led to the failures in the payroll system. What five factors contributed to the failures and how did they contribute?**

**Note:** These factors can be technical or non-technical. (5 marks)

1. **Insufficient care in development processes** led to critical issues going undetected, leaving disastrous consequences for the system upon launch.

2. **Overwhelming complexity of the system** given how payrolls were to be calculated was a daunting task to be implemented, which ended up being detrimental to the launch and was the theoretical root cause of the payment and calculation errors done by the payroll system.

3. **Inadequate training for government employees** meant that the users of the system were unable to correctly navigate the system leading to an increase in user errors.

4. There were **not enough servers for the database** to handle the amount of data to be processed for the payroll system leading to a lot of performance issues making the system sluggish. The payroll system should have been updated overtime to allocate for more resources in the database.

5. **Inability to properly effectively access the payroll system** by the remote payroll advisers because Miramichi, NB is located beyond the edge of the known world. This meaning they would need to extend the internet fiber optic cable for Miramichi.

- e. **The PSPC needed to analyze all 200 programs that had been added to PeopleSoft to identify where potential errors were when it came to pay. When these programs were added, what test levels (Unit 3) should have been used? (2 marks)**

Levels of Testing:

**System Testing** would have been valuable to analyze all 200 programs, testing both functional and non-functional components to ensure validity for customer use.

**Component Testing** would have been vital in ensuring the stability of the system as with such complex and large system components would have made the locating of the bugs much easier and would have been caught way earlier.

- f. **What two changes could have been made during the implementation that might have eliminated or reduced the number of employees affected by the system payroll problems? (2 marks)**

There should have been much more rigours testing of the system to ensure that there were no severe bugs that could have impacted major parts of the systems purpose.

Training for employees should have been more thorough and widespread to ensure that there would be less severe mistakes being made by the employees

- g. **In your opinion, what one critical mistake was made during implementation that, if it had not been made, would have prevented the resulting issues with the system? (1 mark)**

I believe that the training is the biggest contributor.

- h. **In three to four sentences and based on your answer to the previous question, why do you feel this was the most critical mistake made? (2 marks)**

I believe that if there were more eyes and more training on the system the glaring issues with the system would have been detected earlier and less mistakes that caused bugs would have been made, this would have had a chain reaction of issues being fixed earlier on in the system reducing the impact of these bugs.

- i. **If you were a government employee that wasn't paid or was paid less than expected for an extended period, what effect would this have on your life? (2 marks)**

This would significantly impact my lifestyle because of the expenses that have to be paid off monthly. I would assume that my cost of living per month would be budgeted according to the pay I am supposed to receive, but if my salary is less than what is expected, a lot of debt would be incurred for this reason.

3. Submit one set of answers per group to Brightspace.