

**MODULE NAME: INFORMATION SYSTEMS IIIB MODULE CODE: ISY34BT**

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**Project description and objectives.**

The Phoenix pay system is a payroll processing system for Canadian federal government employees, provided by IBM in June 2011 using PeopleSoft software, and run by Public Services and Procurement Canada. It was first introduced in 2009 as part of Prime Minister Stephen Harper's Transformation of Pay Administration Initiative, intended to replace Canada's 40-year old system with a new, cost-saving "automated, off-the-shelf commercial system." Its purpose was to centralize and modernize the payroll operations for federal public servants.

However, the implementation of Phoenix turned into a significant issue rather quickly. The system was meant to streamline payroll processes, including salary payments, benefits, and pensions for federal government employees. It replaced the previous payroll system, which was deemed outdated and inefficient. However, soon after its launch, numerous problems arose, leading to widespread issues with accurately and promptly paying employees.

**Stakeholders of the project**

Federal Government: The government has a stake in ensuring the system functions properly to fulfill its obligations to pay its employees accurately and on time.

Federal Employees: This includes all federal government employees who rely on the Phoenix Pay System to receive their salaries, benefits, and pensions. They have a direct interest in the system working smoothly to ensure they are paid accurately and promptly.

Labor Unions: Labor unions representing federal government employees are stakeholders in the Phoenix Pay System. They advocate on behalf of their members to ensure fair treatment and timely resolution of pay issues. Labor unions have been vocal critics of the system's failures and have pushed for solutions to address the problems faced by their members.

Taxpayers: Canadian taxpayers are stakeholders in the Phoenix Pay System indirectly because their tax dollars fund government operations, including the implementation and maintenance of payroll systems. The inefficiencies and costs associated with the Phoenix Pay System impact taxpayers, as they bear the financial burden of fixing the system and compensating employees for errors.

IT Contractors and Suppliers: Companies or organizations involved in the development, implementation, and maintenance of the Phoenix Pay System are stakeholders with a vested interest in its success. This includes IT contractors, software vendors, and consulting firms that provide services related to the system.

Auditors and Oversight Bodies: Auditors and oversight bodies, such as the Office of the Auditor General of Canada and parliamentary committees, play a role in monitoring the implementation and performance of the Phoenix Pay System. They provide independent assessments and recommendations to improve accountability and transparency.

**Tools and techniques used on the project.**

The Phoenix Pay System utilized various tools and techniques in its development, implementation, and management, which includes:

Enterprise Resource Planning (ERP) Software: The Phoenix Pay System likely relied on ERP software to manage payroll processes. ERP systems integrate various business functions, such as HR, finance, and accounting, into a single system, allowing for streamlined processes and centralized data management.

Custom Software Development: Custom software development would have been necessary to build the specific functionalities required for the Phoenix Pay System, tailored to the needs of the Canadian federal government's payroll processes.

Database Management Systems (DBMS): DBMS software would have been used to store and manage the vast amount of employee data, including personal information, employment history, salary details, benefits, and deductions, required for payroll processing.

Data Integration Tools: Given the need to integrate data from multiple sources, such as HR systems, timekeeping systems, and financial systems, data integration tools would have been used to ensure seamless data flow between different applications and databases.

Payroll Processing Algorithms: Complex algorithms and calculations would have been programmed into the system to automate payroll processing, including calculating salaries, taxes, benefits, and deductions based on various rules and regulations.

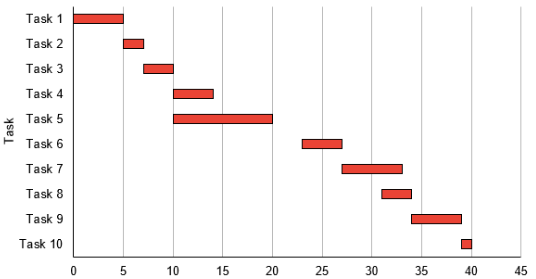
User Interface (UI) Design Tools: User-friendly interfaces would have been designed using UI design tools to allow federal government employees and administrators to interact with the system easily. These interfaces would facilitate tasks such as entering timesheets, updating personal information, and viewing pay statements.

Quality Assurance (QA) and Testing Tools: QA and testing tools would have been employed to ensure the accuracy, reliability, and performance of the Phoenix Pay System. This would include functional testing, integration testing, performance testing, and user acceptance testing to identify and rectify any issues before deployment.

Security Measures: Various security tools and techniques, such as encryption, access controls, and audit trails, would have been implemented to protect sensitive employee data and ensure compliance with privacy and security regulations.

Monitoring and Reporting Tools: Monitoring and reporting tools would have been used to track system performance, identify issues, and generate reports for management and regulatory purposes.

**Gantt Chart of Phoenix pay system**



**Duration(Months)**

**PERT chart for the project.**

A diagram of a diagram of circles and lines

Description automatically generated

**Critical Path:** A -- B—C—E—F—G—I—J = 40 Months

**The Phoenix Pay System fall under the "Core" category. Because looking at the Core Systems, Essential Functionality and Long-Term Impact.**

Core Systems: The system is a critical infrastructure for the Canadian federal government, responsible for managing payroll, benefits, and other related financial services for federal employees. Core systems are those fundamental to the operation of an organization, and the Phoenix Pay System is central to the functioning of the Canadian government's payroll operations.

Essential Functionality: Despite its well-documented issues and challenges, the system is an essential component of the Canadian government's operations. It handles the payment of over 300,000 federal employees, making it a core system by necessity.

Long-Term Impact: Core systems are those that have a significant and long-lasting impact on an organization. Despite ongoing efforts to rectify its issues or potentially replace it, the Phoenix Pay System's impact on the Canadian federal government's payroll operations is deeply entrenched, further solidifying its classification as a core system.

While it's crucial to acknowledge that the Phoenix Pay System has faced significant problems and criticisms, its designation as a core system reflects its essential role within the Canadian federal government's infrastructure.

**The Three-Sphere Model for systems management consists of three spheres: Business, Information, and Technology. Factors from each sphere affected the Phoenix Pay System project:**

**Business Sphere:**

- Inadequate project governance and oversight

- Poor communication and stakeholder engagement

- Insufficient business process re-engineering

- Failure to prioritize functionality and security over schedule and budget

**Organisational Sphere:**

- Inaccurate and incomplete data migration

- Insufficient data quality and integrity checks

- Lack of data security and privacy measures

- Inadequate reporting and analytics capabilities

**Technology Sphere:**

- Inadequate testing and quality assurance

- Insufficient technical expertise and training

- Failure to address technical debt and legacy system issues

- Inadequate infrastructure and hardware support

These factors interacted and impacted the project, leading to its failure. The Business Sphere factors led to poor project management and oversight, while the Information Sphere factors resulted in data errors and security vulnerabilities. The Technology Sphere factors caused technical issues and system failures. The Three-Sphere Model highlights the importance of addressing all three spheres to ensure successful systems management.

**Potential risks based on the Phoenix Pay System project include:**

1. Technical Risks:

- System integration issues

- Data migration errors

- Technical debt and legacy system problems

2. Operational Risks:

- Inaccurate or late payments to employees

- Inefficient payroll processing

- Increased workload and stress on HR and payroll staff

3. Financial Risks:

- Cost overruns and budget exceedances

- Financial losses due to incorrect payments or delays

- Potential legal and settlement costs

4. Reputation Risks:

- Damage to the government's reputation and public trust

- Negative media coverage and public scrutiny

- Loss of employee morale and trust

5. Compliance Risks:

- Non-compliance with regulatory requirements

- Security and privacy breaches

- Failure to meet legal and contractual obligations

6. Project Management Risks:

- Poor project governance and oversight

- Inadequate communication and stakeholder engagement

- Insufficient risk management and mitigation

7. Human Resources Risks:

- Inadequate training and support for HR and payroll staff

- Insufficient resources and capacity to manage payroll

- Potential strikes or labor disputes

These risks were not adequately identified, assessed, or mitigated, contributing to the project's failure. Effective risk management is crucial to ensure successful project outcomes.

**Organizational Structure:**

The Phoenix Pay System project was managed by the Canadian Government’s Department of Public Works and Government Services (PWGSC), with the following structure:

1. Project Executive (PE)

2. Project Manager (PM)

3. Business Lead (BL)

4. Technical Lead (TL)

5. Payroll Experts (PEs)

6. IT Team (ITT)

7. Quality Assurance Team (QAT)

Impact on Project Success/Failure:

1. Lack of clear accountability and decision-making authority

2. Inadequate communication and coordination between teams

3. Insufficient technical expertise and oversight

4. Prioritization of schedule and budget over functionality and security

5. Inadequate risk management and mitigation

6. Limited stakeholder engagement and feedback

7. Ineffective change management and training

**This organizational structure and management approach contributed to the project's failure by:**

1. Creating confusion and delays in decision-making

2. Allowing technical issues to go unaddressed

3. Fostering a culture of prioritizing schedule and budget over quality and security

4. Limiting stakeholder input and feedback

5. Inadequately managing and mitigating risks

6. Insufficiently training and supporting end-users

A more effective organizational structure and management approach, with clear accountability, communication, and prioritization of quality and security, could have contributed to the project's success.

**Project Failure:**

The Phoenix Pay System project failed to meet the success criteria in several areas

1. Timely implementation: The project was delayed by several months, resulting in a late implementation.

2. Budget adherence: The project exceeded its budget by tens of millions of dollars.

3. Functional requirements: The system failed to meet all functional requirements, resulting in errors and inaccuracies in payroll processing.

4. User adoption: The system was not fully adopted by all government departments and agencies, resulting in continued use of legacy systems.

5. Quality and reliability: The system was plagued by technical issues, errors, and security vulnerabilities, resulting in a lack of reliability and quality.

**Causes of Project Failure**

1. Poor project management and governance

2. Inadequate requirements gathering and definition

3. Insufficient testing and quality assurance

4. Inadequate technical expertise and resources

5. Unrealistic timelines and budget constraints

6. Inadequate stakeholder engagement and communication

7. Lack of flexibility and adaptability in the project plan

These factors contributed to the project's failure to meet its success criteria, resulting in a system that was not fully functional, reliable, or adopted by users.

**The project team intends to ensure the project delivers a quality product (the Phoenix Pay System) by:**

1. Conducting thorough requirements gathering and definition to ensure a clear understanding of user needs.

2. Developing a detailed project plan and timeline to guide the project execution.

3. Establishing a quality assurance process to ensure the system meets functional and technical requirements.

4. Conducting unit testing, integration testing, and user acceptance testing (UAT) to identify and fix defects.

5. Performing regular project monitoring and control to identify and mitigate risks.

6. Ensuring adequate training and support for end-users to facilitate successful adoption.

7. Conducting post-implementation review and lessons-learned activities to identify areas for improvement.

8. Continuously monitoring and evaluating the system's performance and making improvements as needed.

9. Encouraging open communication and feedback throughout the project and after implementation.

10. Having a dedicated quality assurance specialist as part of the project team to oversee quality control.

By following these steps, the project team aims to ensure that the Phoenix Pay System meets the required quality standards, is reliable, efficient, and meets the needs of the end-users, ultimately leading to improved customer satisfaction and business success.

However, as we know, the project failed to meet its objectives, and the above measures were not sufficient to prevent the failure. A post-project review identified the need for more robust project governance, better stakeholder engagement, and more comprehensive testing and quality assurance processes.

**Despite the project's overall failure, some aspects were going well**

1. Clear goals and objectives: The project had well-defined goals and objectives, which were communicated effectively to the team and stakeholders.

2. Strong stakeholder engagement: Stakeholders were actively involved and engaged throughout the project, providing valuable feedback and input.

3. Collaborative team environment: The project team worked collaboratively, sharing knowledge and expertise, and supporting each other to overcome challenges.

4. Effective communication: Communication among team members and stakeholders was open and regular, helping to identify and address issues promptly.

5. Technical expertise: The project team had skilled and experienced technical professionals who worked diligently to develop the system.

**These aspects were going well due t**

- Clear project vision and objectives

- Effective communication and stakeholder engagement

- Collaborative team culture

- Skilled and dedicated project team members

- Regular monitoring and control

However, despite these positives, the project ultimately failed due to other critical issues, such as inadequate project governance, insufficient testing, and unrealistic timelines.

**Several aspects were not going well on the project:**

1. Inadequate project governance: Poor oversight and decision-making led to a lack of direction and control.

2. Insufficient testing and quality assurance: Inadequate testing and quality assurance processes failed to identify and address critical issues.

3. Unrealistic timelines and budget constraints: Overly ambitious timelines and inadequate budget led to rushed work and resource shortages.

4. Inadequate stakeholder management: Failure to effectively manage stakeholder expectations and needs led to dissatisfaction and resistance.

5. Lack of flexibility and adaptability: Inability to adapt to changing requirements and circumstances hindered the project's progress.

6. Inadequate risk management: Failure to identify and mitigate risks led to unexpected issues and project delays.

7. Technical issues and errors: Numerous technical problems and errors plagued the system, causing delays and user frustration.

8. Inadequate training and support: Insufficient training and support for end-users led to difficulties in adopting the new system.

**These issues arose due to:**

- Poor project planning and governance

- Inadequate resource allocation

- Unrealistic expectations and timelines

- Insufficient stakeholder engagement and management

- Lack of flexibility and adaptability

- Inadequate risk management and quality assurance processes

These factors ultimately contributed to the project's failure to deliver a functional and reliable system, leading to its cancellation.

**To correct what is not going well on the project, we suggest:**

1. Improve project governance: Establish a clear project management structure, define roles and responsibilities, and ensure effective decision-making processes.

2. Enhance testing and quality assurance: Develop a comprehensive testing strategy, conduct thorough testing, and implement a robust quality assurance process to identify and address issues.

3. Reassess timelines and budget: Review and adjust timelines and budget constraints to ensure realistic goals and adequate resources.

4. Strengthen stakeholder management: Engage stakeholders effectively, manage expectations, and ensure their needs are met throughout the project.

5. Foster flexibility and adaptability: Encourage a culture of adaptability, monitor progress, and make adjustments as needed to address changing requirements and circumstances.

6. Implement robust risk management: Identify, assess, and mitigate risks proactively to minimize project impacts.

7. Address technical issues and errors: Prioritize resolving technical problems, and implement a robust error-handling process to minimize system downtime.

8. Provide adequate training and support: Offer comprehensive training and support for end-users to ensure a smooth transition to the new system.

9. Conduct regular project monitoring and control: Track progress, identify deviations, and take corrective action to ensure the project stays on track.

10. Foster open communication and collaboration: Encourage transparent communication, active listening, and collaborative problem-solving among team members and stakeholders.

By implementing these suggestions, the project can get back on track, address existing issues, and deliver a successful outcome.

**Personal Reflections**

**218215220 NM Mashapa**

The Phoenix pay system's struggles serve as a poignant reminder of the importance of thorough planning, testing, and implementation in large-scale system overhauls. The cascading effects of technical glitches, inadequate training, and insufficient support have starkly highlighted the human impact of bureaucratic inefficiencies

This experience underscores the need for a user-centric approach, where the end-users' needs and concerns are paramount. It also emphasizes the importance of accountability, transparency, and open communication in addressing systemic issues.

Moreover, the Phoenix pay system's difficulties demonstrate the intricate interplay between technology, policy, and human resources. It serves as a call to foster a culture of collaboration, adaptability, and continuous improvement, acknowledging that even the best-intentioned initiatives can have unintended consequences.

Ultimately, this reflection prompts us to prioritize empathy, understanding, and collective problem-solving, recognizing that the effectiveness of a system is measured not only by its technical proficiency but also by its ability to serve the people it is intended to support.

**219855842 N Kulani**

1. The importance of collaboration: The Phoenix Project highlights the need for cross-functional teams to work together effectively, breaking down silos and bridging the gap between development and operations.

2. The power of continuous improvement: The book emphasizes the value of iterative progress, experimentation, and learning from failures.

3. The impact of IT on business outcomes: The Phoenix Project demonstrates how IT can be a key driver of business success, rather than just a cost center.

4. The need for leadership and cultural transformation: The book shows how leadership and cultural changes are essential for successful DevOps adoption.

5. The Three Ways: The Phoenix Project introduces the Three Ways of DevOps: Flow, Feedback, and Continuous Learning, which provide a framework for understanding and implementing DevOps principles.

**219971222 S Qakamba**

Despite the project's failure, I learned valuable lessons about project management, communication, and adaptability. I now understand the importance of:

- Conducting thorough risk assessments and contingency planning

- Setting realistic goals and milestones

- Empowering team members to take ownership of their tasks

- Regularly checking-in and addressing issues promptly

If I were to lead a similar project in the future, I would prioritize a more measured approach, focusing on incremental progress and continuous evaluation. I would also prioritize team well-being and ensure that each member has a clear understanding of their role and responsibilities.

While the project's failure was disappointing, it provided an invaluable learning experience that will shape my approach to future projects and help me become a more effective leader and team player."

**219425074 M Matlou**

The Phoenix pay system debacle was a colossal failure in government administration, causing financial hardship and frustration for thousands of Canadian public servants. It's a stark reminder of the importance of thorough testing and implementation in complex systems, especially those involving payroll. The fallout highlighted the need for accountability, transparency, and better communication between government agencies and employees.

**218732887 MM Mashaba**

I realize that we underestimated the complexity of the project and overestimated our resources. We were too ambitious, and our timeline was overly aggressive. Additionally, communication breakdowns and stakeholder misalignment further hindered our progress.

This experience has made me a more cautious and thoughtful IT professional, with a deeper appreciation for the complexities of large-scale projects. I now prioritize collaboration, transparency, and incremental progress, recognizing that even failed projects can be valuable stepping stones for future success.

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