



Costs Associated with Replacing the Federal Pay System



OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
BUREAU DU DIRECTEUR PARLEMENTAIRE DU BUDGET

Ottawa, Canada
16 May 2019
www.pbo-dpb.gc.ca

The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

The PBO wishes to acknowledge and thank the two contributing provincial government ministries, the Canadian Payroll Association, and federal departments for graciously providing information and subject matter expertise.

The Office of the Parliamentary Budget Officer is not directly or indirectly involved in the federal government procurement process for a new payroll system.

Lead Analyst:

Tessa Devakos, Research Assistant

Contributors:

Carleigh Busby, Advisor-Analyst

Nigel Wodrich, Research Assistant

This report was prepared under the direction of:

Mark Mahabir, Director of Policy (Costing) and General Counsel

Nancy Beauchamp, Rémy Vanherweghem, and Jocelyne Scrim assisted with the preparation of the report for publication.

For further information, please contact pbo-dpb@parl.gc.ca

Yves Giroux

Parliamentary Budget Officer

Table of Contents

Executive Summary	1
1. Background	3
1.1. Regional Pay System	4
1.2. Phoenix Pay System	4
1.3. Historic Cost of Pay Administration	5
1.4. Complexity of Federal Pay	7
2. Scope	8
3. Data	10
4. Methodology	11
5. Results	12
5.1. One-time Costs	13
5.2. Ongoing Costs	15
6. Conclusion	20
Appendix A: Calculations	22
A.1 Subscription Costs Calculations	22
A.2 Labour Cost Calculations	25
Appendix B: PSPC 2009 Cost Estimates	32
Appendix C: SaaS Model	33
Appendix D: System Descriptions and Costs	35
Notes	39

Executive Summary

This report provides an independent estimate of the cost of replacing the Phoenix pay system, the current payroll processing system that administers pay for federal public servants. It assesses costs associated with procuring and implementing a new software, as well as projected operating costs over 10 years.

PBO estimates procurement, testing and training costs will amount to \$57.0 million from fiscal year 2018-19 to 2024-25, stemming directly from the need to procure and implement a new payroll system. This would be in addition to \$2.6 billion in costs anticipated to stabilize Phoenix and correct pay file data estimated by the Treasury Board Secretariat (TBS)¹. Because pay file data cannot be transferred to a new system until it is corrected, PBO assumes a new system cannot be launched until 2023 based on TBS estimates.

Once implemented, a new system capable of processing federal pay should deliver significant savings, when compared to historic spending on federal pay systems.

PBO estimates the government will pay between \$340 to \$352 per each account, or between \$101.9 million and \$105.7 million annually beginning in 2023-24, to operate the new pay system, including both software and labour costs.

As shown in Table 1 of the Summary, costs are expected to be lower under a new system than either current costs under Phoenix or historic costs under the old Regional Pay System.

Summary Table 1

Comparing annual system costs, on a per-account basis

System	Year	Total
Regional Pay	2009-10	\$681
Phoenix	2017-18	\$1,073
PBO Range of Cost Estimates	2023-24	\$340 - \$352

Sources: Parliamentary Budget Officer, Public Services and Procurement Canada

Notes: Uninflated costs.

Costs for the Regional Pay System are based on the 2009 Initiative to Fix the Pay System Business Case.

It is, therefore, possible for the government to realize savings on pay administration while paying employees accurately and on time. The success of a new system depends on two factors: the correction of all pay file data

before implementation, and the procurement of a system that has all the capabilities required to process federal pay.

PBO also finds that the complexity of federal pay will remain both a risk and a cost driver for a new system, as it was for Phoenix. This could be reflected in an increase to ongoing costs, specifically the subscription fee, and/or additional up-front costs.

1. Background

The disbursement of pay to employees in the federal public administration is overseen by Public Services and Procurement Canada pursuant to section 13 of the *Department of Public Works and Government Services Act*.²

For over 40 years, the public service payroll was administered through a decentralized system in which each department was responsible for paying their respective staff. It was known as the Regional Pay System (RPS). In practice, this required a mix of manual work conducted by compensation advisors and some automation through software.

The current software system, Phoenix, administers pay for the roughly 300,000 employees in the federal public administration.

Per-Account Cost

PBO defines a per-account cost to be equal to the total system cost divided by the total number of employees processed on the system. For some systems this is equal to the number of full-time employees, the headcount of the organization, or the number of T-4 slips (or equivalent) processed.

The modernization of the federal pay system, through the creation of Phoenix and the consolidation of compensation advisors into one pay centre, was intended to significantly decrease labour costs associated with the processing of pay, as well as to improve service.³

It achieved a higher level of automation than the RPS, through a combination of a more modern software and 200 custom-built programs. However, Phoenix did not have the functions required to process pay correctly. Reductions in labour costs were never achieved, and operational costs remained high, even when excluding stabilization costs.

This report draws on comparable existing pay systems to estimate total costs and per-account costs of a replacement system for Phoenix. The PBO assumes the following: this new system will have all the required functionalities; it will have human resource functions; it will continue to function with a centralized model of administration; and the new software will be an all-in subscription-based model.

PBO considers the replacement payroll system to be composed of the pay processing software and the employees who enter data, maintain and run the system.

The next sections provide a brief history of the federal government's pay systems.

1.1. Regional Pay System

Prior to Phoenix, the federal government administered the payment of federal employees through the Regional Pay System (RPS). The RPS was created over 40 years ago and thus lacked the levels of automation associated with modern pay systems.

Although the RPS had relatively low operating expenses, the amount of manual work required from compensation advisors made the system expensive overall. Compensation advisors with significant knowledge of both government pay rules and the RPS were required to correctly process pay. The system was also decentralized; each department had dedicated compensation advisors and Human Resources (HR) staff for their employees.

Studies conducted for the government by IBM and PricewaterhouseCoopers in 2007 and 2008 indicated that cost savings could be achieved through pay system consolidation and modernization.⁴

For example, the workload associated with processing the 3 million annual overtime approvals was estimated to require 293 full time equivalent (FTE) workers. The automation of this function was anticipated to reduce labour needs by 80 per cent.⁵

1.2. Phoenix Pay System

In 2009, the Transformation of Pay Administration Initiative aimed to procure a pay software system with increased levels of automation, which would decrease labour costs. Managed by Public Services and Procurement Canada (PSPC), previously Public Works and Government Services, the initiative led to the elimination of over 1,200 pay advisor positions in 46 departments and agencies, as well as creation of the Miramichi Pay Centre.⁶

The Phoenix pay system software, which was a result of the initiative, is currently used to administer the pay of 300,000 federal public servants. It is based on customized commercial pay software known as PeopleSoft, which is also used by other levels of government in Canada.⁷

Since its implementation, Phoenix has not functioned as intended. This has led to a high number of incorrect payments and an increased need for manual intervention. The Auditor General of Canada has spelled out the problems with the Phoenix system in a pair of reports. In May 2018, the Auditor General described the Phoenix project as an “incomprehensible failure” of project management and oversight.⁸

Compared to the RPS, Phoenix failed to realize any cost reductions. In addition, the federal government continues to incur high costs correcting pay errors and making manual changes.

Until these issues are resolved, or a new system is put in place, the federal government will continue to incur these interim costs.

1.3. Historic Cost of Pay Administration

Calculating the true historic costs of a system to administer employee pay is difficult because compensation advisors were departmental employees before the Transformation of Pay Administration Initiative. They were not tracked independently from other internal staff.

The cost per account to administer a pay system reported in PSPC's Departmental Results Reports prior to 2016-17 refers to the management of the central pay system only. That is, it excludes all pay employees working for departments other than PSPC.

This is a narrower definition of the total cost of a system to administer the payment of employees. PBO considers the total cost to be composed of the pay processing software and all specialized employees who enter data and process pay. For comparison, PBO independently estimated the cost under the RPS (see Appendix A for calculations).

As shown in Table 1-1, on a cost per-account basis, costs incurred by the federal government under the RPS and Phoenix systems are well above similar systems. A 2014 payroll benchmarking report by Bloomberg surveyed five government agencies of varying sizes.⁹ The per-account cost for Phoenix and the RPS has consistently been over \$500.

Table 1-1 Comparing annual system costs, per-account basis

	System	Year	Pay Administration	Pay Centre	Total
	Regional Pay	2009-10	N/A	N/A	\$681
	Phoenix	2017-18	\$285	\$788	\$1,073
	Bloomberg – Average for Governments	2014	N/A	N/A	US\$192
	Bloomberg – Max for Governments	2014	N/A	N/A	US\$395

Source: Parliamentary Budget Officer, Public Services and Procurement Canada 2009 Business Case, Bloomberg BNA.

Notes: Uninflated costs. Costs are current for year noted.
 We assume the complexity that drives up costs for the federal government will also be incurred by other governments, making this a relevant benchmark.
 Excludes stabilization specific costs for Phoenix.
 PSPC breaks down the cost of Phoenix into two categories.¹⁰
 Costs for the Regional Pay System are based on the 2009 Initiative to Fix the Pay System Business Case.

Cost of Stabilizing Phoenix

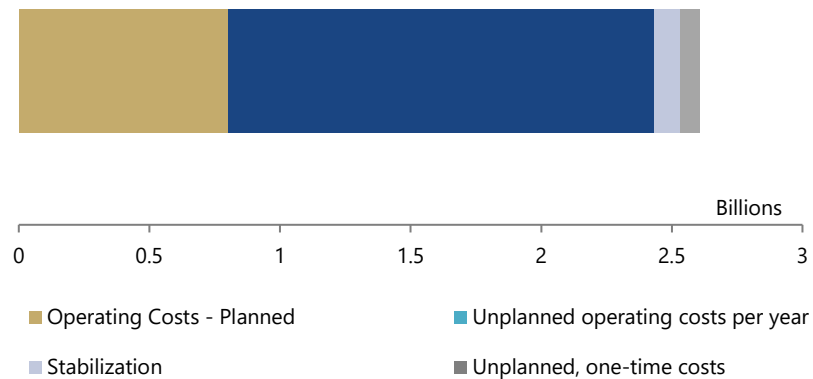
A 2018 report by the Treasury Board Secretariat estimated the future costs of stabilizing and operating Phoenix (Figure 1-1). TBS said stabilizing it will take about five years at a cost of \$9.8 million per year, along with one-time costs of \$50.8 million. This is in addition to \$160 million and \$326.6 million in planned and unplanned operating costs.

This investment is necessary to bring Phoenix up to sustainable performance levels, and to complete a full review of all pay files. In addition, there are planned and unplanned operating expenses that PSPC did not anticipate in its original pay administration budgeting.

Thus, the total cost of operating and stabilizing Phoenix for this five-year period is estimated at \$2.6 billion. Figure 1-1 shows a breakdown of this spending.

Figure 1-1

Costs of stabilizing phoenix



Source: Treasury Board of Canada Secretariat¹¹

Note: PBO summed the annual amounts in the TBS report. The figure portrays the five-year cumulative amount.

The Government has been adding functionalities to Phoenix specifically to correct pay files more efficiently. These are functions not normally required, and therefore not typically included, in commercial pay software.

Transferring pay file data to a new system is not advisable until all files with outstanding issues have been corrected, except for a small operational queue. Therefore, a new pay system cannot be launched until stabilization is complete.

1.4. Complexity of Federal Pay

Each federal employee's pay requires the consideration of multiple factors. These include: the proper hourly rate, hours worked, frequency of payment, benefits, type of leave, length of the work day and work week, and deductions from pay. In addition, there are numerous other factors that are found in federal labour legislation, directives, policies, collective agreements and various other documents.

Pay system software must be able to apply these factors, known as pay rules, to calculate the pay of each employee. For example, across all departments using Phoenix, there are more than 200 different allowances paid for various reasons via multiple methods (monthly, hourly, weekly, biweekly, annually, pensionable, non-pensionable, and so on).

According to PSPC, there were about 80,000 pay rules for the 2006-07 fiscal year.¹² Neither PSPC nor TBS was able to provide an estimate of the current number of pay rules. From PBO's analysis, the greater the number of rules, the greater the difficulty in configuring or customizing an off-the-shelf pay system.

In addition, the more complex the rule, the greater the challenge to automate it in a pay system. Certain rules could require manual entry and calculation by a compensation advisor, which would increase labour costs associated with the system.

This complexity adds both significant cost and risk to implementing a new pay system. If a new system is unable to properly process all pay rules, as is the case with Phoenix, the government will continue to incur high labour costs, as compensation advisors make frequent manual calculations.

During consultation, PBO found that other levels of government had taken the effort to consolidate and simplify their respective pay rules, reducing the complexity of administering pay.

This report does not take into account the possibility that the government procures a software system incapable of processing all its pay rules.

2. Scope

In 2018, the federal government created the NextGen HR and Pay team within The Treasury Board Secretariat. Its mandate was to explore a future human resource and pay solution for the Government of Canada.¹³ Their work is still ongoing; this report does not seek to anticipate their findings or influence the ongoing procurement process.

Because of the complex nature of government procurements, the intricacies of large software systems, and a lack of specific system requirements, PBO is not able to reasonably estimate the specific cost of payroll software to replace Phoenix. Instead, the costs in this report represent a range of estimates associated with software systems in other jurisdictions, and labour costs based on historical information.

PBO makes several key assumptions for its baseline:

- The procured software meets all current requirements for federal pay administration, including the functionality to process all current rules and meet all data security requirements;
- All software costs are contained in a single ongoing subscription cost as is typical of a 'software as a service' ("SaaS") model. (See Appendix B for further discussion of costing as SaaS procurement);
- We assume 300,000 pay accounts, each representing one FTE (full-time equivalent), to be under this payroll system, with no growth, which is in line with both TBS and PBO projections;
- Based on the TBS response to the Auditor General, the government will be able to transfer payroll data into a new system by 2023. We therefore assume a start date for the new payroll system of 2023; and,
- Pay administration remains consolidated at the Miramichi Pay Centre.

Using these assumptions, PBO is able to provide estimates for the following elements, either one-time or ongoing, which could arise when replacing Phoenix:

One Time	Ongoing
Procurement	Subscription fees
Testing	Labour costs
Training	Pay Centre Operations

While PBO attempted to find data on all elements of implementing a new pay system, some costs could not be estimated. As a result, a number of costs are not included in this report, but may be incurred:

- Procurement costs beyond what the government estimated in Budget 2018;
- The cost of transferring data from Phoenix to a new system, and potentially having both systems temporarily run concurrently;
- The cost of in-house compensation advisors, which departments may choose to retain; and,
- Any settlements or payouts made because of litigation or complaints.

An additional cost for which PBO is not able to fully account is a customization fee. A payroll firm may or may not charge the government a customization fee to configure existing software to process all the government's required business rules.

If they do charge a customization fee, it could either be charged as one lump sum paid while the software is being configured, or it could be part of the subscription fee. Because PBO is not able to estimate this cost, this represents an upside risk on the estimates contained in Section 5 below.

Furthermore, there are many choices the government can make with respect to the acquired pay system, separate from the key capabilities required to process pay correctly and maintain service standards. Many software systems that process pay also include capabilities related to human capital management.

Adding capabilities may increase the cost of the software, but may also provide benefits or savings. A report from Deloitte found that 70 per cent of payroll contracts included some HR capabilities or support, such as time and benefit management.¹⁴

For the purposes of this report, PBO assumed a new system would have both pay and HR capabilities, but did not anticipate what those HR capabilities might be.

3. Data

PBO requested information on payroll systems and their associated costs from industry experts, provincial governments, American agencies, and other federal departments with payroll systems. In the case of each query, PBO stipulated that it is not involved in, or able to influence, the ongoing procurement process.

PBO was able to collect pay system administration data from: two provinces – one mid-sized and one large; one US government payroll provider; PSPC; Department of National Defence; Royal Canadian Mounted Police; Canada Revenue Agency; and the Senate of Canada. In total, we used eight systems to estimate the software subscription cost.

We also reference two benchmarking reports on payroll systems. The first was procured by a mid-sized provincial government and written by Deloitte in 2017. The second is a general benchmarking of the US payroll system market written by Bloomberg BNA in 2015. Both reports rely on firm-level data primarily from the United States.

For information specific to the Canadian federal government's payroll administration, PBO relied on data provided by PSPC, as well as reports published by the Auditor General, Senate and TBS.

4. Methodology

Costs are estimated in two categories: 1. direct one-time costs, and 2. ongoing costs.

One-Time Costs

Direct one-time cost estimates encompass all spending that will occur between the beginning of a procurement process and the launch of a new pay system. These estimated costs are the direct result of needing to replace Phoenix. PBO believes the largest one-time costs will include procurement, testing and training.

There is also a high probability the payroll software vendor will charge a one-time customization fee, depending on the specifications of their existing software, as discussed in Section 3. PBO is unable to estimate this customization fee. See Appendix B for more on customization.

Ongoing Costs

Ongoing costs relate to the operations of the pay system and are driven by the type of payroll software used. PBO considers operating costs to include:

- The costs of operating and maintaining the pay system software (which in a Software as a Service, or SaaS, procurement are paid directly to the vendor);
- Labour costs for the employees who enter data and process pay, and;
- The cost of operations at the federal pay centre.

SaaS vendors, and payroll software vendors more broadly, generally charge fees on a per-account subscription basis. Therefore, PBO estimates ongoing costs on both a total and per-account basis, and compares existing systems on a per-account basis.

PBO assumes the number of accounts needed for the payroll subscription software will equal the number of FTEs serviced by the payroll. In calculating per-account costs for existing systems, PBO assumed one account is equivalent to one FTE, although this differs for other pay systems.

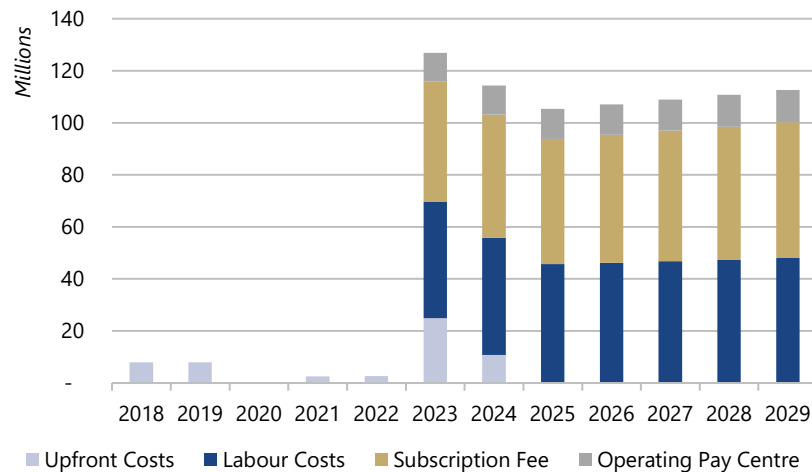
Software Customization

When developing software, vendors will make assumptions about the types of functions and business rules that buyers will want. The federal government has many inflexible business rules that will require any software to be customized.

5. Results

PBO anticipates the cumulative one-time cost of implementing a new federal pay administration system will amount to \$57.0 million. Once implemented, it will cost between \$101.9 million and \$105.7 million annually.

Figure 5-1 Total Costs of a New Pay System



Source: Parliamentary Budget Officer

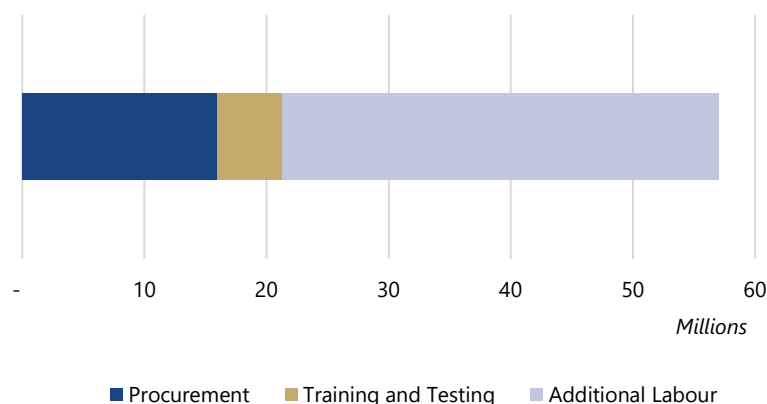
Notes: Assumes 540 Pay Centre employees and average subscription fee costs.
Does not include cost of stabilizing Phoenix.
Presented on a fiscal year basis.

These estimates are based on market comparables, rather than data that are specific to the Canadian government. They are intended to be used as a point of reference to the potential costs of pay administration under a new system. Actual costs may vary based on market conditions and technical specifications.

Another key finding from this report is that the new service model – that is, software delivered as a service from a vendor - should deliver savings when compared with an in-house software procurement. Also, the savings the government could anticipate due to its size would be somewhat offset by the additional costs stemming from its complexity.

5.1. One-time Costs

Figure 5-2 Total One-time Costs



Source: Parliamentary Budget Officer

Note: Assumes 540 Pay Centre employees.

PBO estimates \$57.0 million in one-time costs related to procuring, testing and training, as well as the additional labour costs due to temporarily lower productivity, necessary for a new pay administration system. These estimated costs would occur between the 2018 start of the NextGen project and launching a new pay system, which is assumed to be 2023.

Table 5-1 Total Upfront Costs

	Total Cost (M)	Time Incurred
Procurement	\$16	2018 to 2020
Testing and Training	\$5.3	Prior to Launch
Additional Labour	\$35.7	First Two Years of New System
Total	\$57.0	

Source: Parliamentary Budget Officer

Note: Assumes 540 Pay Centre employees.

Procurement costs

In Budget 2018, the government announced \$16 million over two years for work towards a new pay system, beginning in 2018–19. This funding has been used to initiate the NextGen procurement process.

For comparison, the 2009 Initiative to Fix the Pay System Business Case estimated \$36.5 million for the preliminary project approval phase, and \$155 million for the effective project approval phase (including \$10 million in software costs).¹⁵ The actual costs of the procurement process were not released.

Neither PSPC nor TBS was able to provide PBO with average costs of running a procurement, or the total costs of any completed procurement. PBO anticipates additional costs for the procurement of new pay system software, but is unable to provide an estimate.

Cost of Training and Testing

The Initiative to Fix the Pay System Business Case allowed six months for system testing, but did not include it as a specific category in cost estimates. PBO was able to acquire system testing costs from a different government HR procurement. Because of confidentiality requirements, these are not presented separately; instead, they are included with the cost of training.

Training on the new software will be required for pay system administrators, the largest group being compensation advisors, as well as for the federal employees who will be using the software for their own pay.

The PSPC Initiative to Fix the Pay System Business Case estimated the costs of training on a commercial off-the-shelf solution at \$2.2 million, with an additional \$1.8 million in training tools and \$180,000 in employee training. The PSPC document does not provide specifics as to the type of training being offered, or the intended recipients.

PBO contacted the Canadian School of Public Service (CSPS) regarding the costs of training. Since 2015-16, more than 149,000 public servants took training related to Phoenix. PBO assumed a similar number of public servants would take training on a new pay system.

The CSPS was unable to provide an estimate for the cost to develop a course. PBO is unable to estimate either the cost of developing a course for the general public service population, or the time employees will spend completing it.

For this report, PBO assumed that although the time allocated for pay centre training in the 2009 business case was insufficient, the cost of training tools was sufficient. Inflated to 2023 dollars, the estimated cost of training and testing equals \$5.3 million.

Spike in Labour Costs due to Training

PBO also assumed an initial temporary spike in labour costs resulting from slower transaction times, as compensation advisors learn a new system. The number of pay files initially assigned to each compensation advisor will have

to be lower than normal, and more compensation advisors will be needed on a temporary basis. PBO matched assumptions with those from the 2009 Initiative to Fix the Pay System Business Case, which allowed 18 months for a compensation advisor to be fully trained.

PBO assumed, based on figures from the business case, that an additional 54 per cent of pay centre staff would be required in the first year, and 24 per cent in the second, to offset lower productivity while staff learned a new system.

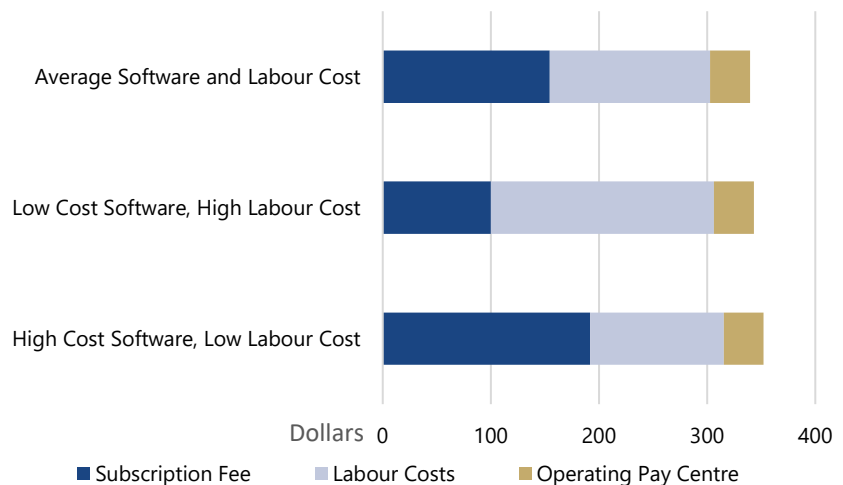
Depending on how many payroll staff were required at full efficiency, this would translate to an additional \$29.6 million to \$49.5 million in labour costs over two years. See Appendix A for full calculations.

5.2. Ongoing Costs

Ongoing costs estimated by PBO are significantly lower than costs under either Phoenix or the Regional Pay System.

Figure 5-2

Ongoing Total Annual Costs of Pay Administration – Per-account Basis



Source: Parliamentary Budget Officer

Note: Excludes inflated labour costs due to training, which are classified as one-time costs.
For fiscal year 2023-24.

There will be a trade-off between system automation and labour costs. A payroll system that has more automated functions will be more expensive to build and operate, but will require less labour. Therefore, a low complexity software will have low subscription fee costs, but high labour costs, while a

high complexity software will have a high subscription fee, but lower labour costs.

Table 5-2 Range of Ongoing Costs – by Category

<i>Inflated to 2023-24</i>	Per-Account Cost	Total Cost (M)
Software Subscription Fee	\$100 - \$192	\$30.0 - \$57.5
Labour Cost	\$124 - \$206	\$37.1 - \$61.9
Pay Centre Operations	\$37	\$11.0

Source: Parliamentary Budget Officer

Note: Excludes inflated labour costs due to training, which are classified as one-time costs.

The Bloomberg report found lower costs per worker in entities with high levels of technology and automation (from US\$25 to US\$140) than in departments with moderately sophisticated systems and software (from US\$54 to US\$171).¹⁶

However, based on data PBO has collected, we found that the overall cost of system administration is not significantly different for a low complexity software versus a high complexity software, because of the labour requirement trade-offs.

We do expect to find significant overall savings from a new pay system in comparison to both the RPS and Phoenix because of the decentralized nature of the RPS and the numerous issues increasing the cost of Phoenix.

Table 5-3 Range of Total Ongoing Costs

<i>Inflated to 2023-24</i>	Per-Account Cost	Total Cost (M)
High Cost Software, Low Labour	\$352	\$105.7
Low Cost Software, High Labour	\$343	\$102.9
Average Software and Labour	\$340	\$101.9

Source: Parliamentary Budget Officer

Software Subscription Fee

For this report, PBO gathered costs for the operation and maintenance of existing pay administration systems, as well as data from two benchmarking reports. The average system cost on a per-account basis is \$184 (in 2019 dollars), excluding Phoenix and the RPS.

In estimating system costs, PBO only considered examples where the costs of operating the pay system software were separate from labour costs. System

costs for which PBO received consent to publish are included in Table 5-4. See Appendix C for full system descriptions.

Table 5-4 System Costs - Sample of Existing Payroll Systems

System	Per-account Cost 2019	HR	System Type	Size	Complexity
Department of National Defence - Military Payroll	\$72	No	In-house	100,000	Medium
Medium Sized Province	\$108	Yes	Outsourced	30,000	Medium
Deloitte Benchmark Study - High Range	\$110	N/A	N/A	15,000+	Medium
US General Services Administration	\$192	Yes	Government Shared Service	150,000+	High
Senate	\$234	No	SaaS	700	Medium
Large-sized Province	\$234	Yes	In-house	72,000	Medium
CRA	\$311	No	In-house	40,000	High
Phoenix	\$297	No	In-house	300,000	High
Regional Pay System	\$117	No	In-house	300,000	Medium

Sources: Compiled by the Parliamentary Budget Officer, full sources in Appendix D.

Notes: Payroll system costs are inflated to 2019 dollars assuming 2 per cent inflation. One system asked that their costs not be disclosed publicly, but are included in the analysis.
Phoenix costs are directly from PSPC; they do not include costs related to stabilization of pay operations.
SaaS: Software as a service
NA: Not available
HR: Does the system include capabilities often included in human resource management systems like leave accumulation.

PBO used this sample to estimate a range for the subscription fee, which a vendor could charge the government for access to their payroll software. Note that systems that are outsourced to private firms (including SaaS) will already incorporate the profit margin required from the vendor, while government in-house systems operate on a cost-recovery basis (no profit).

Based on the expected impact of the federal government's size, complexity, and chosen SaaS procurement model, PBO adjusted the range of costs from this sample. See Appendix A for the full methodology to address scale and complexity across systems.

After adjusting for scale, complexity, anticipated savings from SaaS, and inflating to 2023-24 dollars, PBO estimated a subscription cost ranging from \$100 to \$192 per account. That would put the range of annual subscription costs at \$30.0 million to \$57.5 million, assuming 300,000 accounts.

Table 5-5 Range of Estimated Subscription Fees

<i>Inflated to 2023-24</i>	Per-Account Cost	Total Cost (M)
Low	\$100	\$30.0
Average	\$154	\$46.3
High	\$192	\$57.5

Source: Parliamentary Budget Officer

Labour Costs

In the Initiative to Fix the Pay System Business Case, the original goal of pay consolidation was to locate 540 employees at the pay centre rather than over 1,300 spread across all departments and agencies.¹⁷

A Bloomberg report calculated the average ratio of pay accounts to pay employees.¹⁸ Across all types of organizations with more than 2,500 total employees, 1.5 pay department employees on average are required for every 1,000 pay accounts. For the 300,000 accounts we assume will be serviced by the new system, that would translate into 450 pay centre employees.

Looking at governments specifically, the ratio of pay department employees would increase to 2.5, while the number of pay centre employees would rise to 750.

PBO estimated the cost of a pay centre with 450, 540 and 750 employees separately to provide a range of potential costs. The number of employees needed in the pay centre will depend on the software procured.

If compensation advisors are required to manually calculate and adjust pay, as they are under both Phoenix and the RPS, then more compensation advisors will be required, and labour costs will be higher. If the software can reliably apply all pay rules, then the work done by compensation advisors will shift to resolving more complex issues, reviewing files, and other non-automated tasks.

Using salary information for compensation advisors and compensation advisor managers, PBO estimates total personnel costs at between \$37.1 million and \$61.9 million in 2023-24, excluding training costs. These costs are expected to grow with public sector wage increases, as shown in Table 5-6.

Table 5-6 Range of Labour Costs Based on Employees Required

<i>Cost per-account</i>	2023	2024	2025	2026	2027
450 Employees	\$124	\$125	\$127	\$128	\$130
540 Employees	\$148	\$150	\$152	\$154	\$156
750 Employees	\$206	\$209	\$211	\$214	\$217

Source: Parliamentary Budget Officer

Notes: Excludes increase in labour costs due to training, which are classified as one-time costs.
Presented on a fiscal year basis (2023 = 2023-24).

Cost of Operating the Pay Centre

Although software operating costs are assumed to be included in the subscription fees, there are additional non-labour costs associated with operating a payroll office. These costs include cheque redemption and imaging, repairs and maintenance, and materials and supplies.

PSPC estimates \$12 million in operating and maintenance costs for the Miramichi Pay Centre in 2018-19. About \$2 million of these costs are related to resources for satellite offices and additional costs associated with a new office, which are not expected to occur in the future.

Therefore, PBO estimates \$10 million in operating and maintenance costs to operate the Miramichi Pay Centre under normal circumstances. By 2023-24, with an annual inflation rate of 2 per cent, this would translate to \$37 per account and a total of \$11 million.

6. Conclusion

This report provides one-time and ongoing cost estimates for a new federal pay system. PBO anticipates the implementation of a new federal pay administration system will amount to \$57.0 million in cumulative one-time costs. Once implemented, it would cost between \$101.9 million and \$105.7 million a year.

As noted in Section 2, these do not represent all potential costs that could occur as a result of replacing the Phoenix pay system. Notably, the government has not committed funding for the procurement of a new system beyond 2018-19. Aside from procurement, either one-time or ongoing costs may be higher, depending on whether and how the software supplier imposes customization fees.

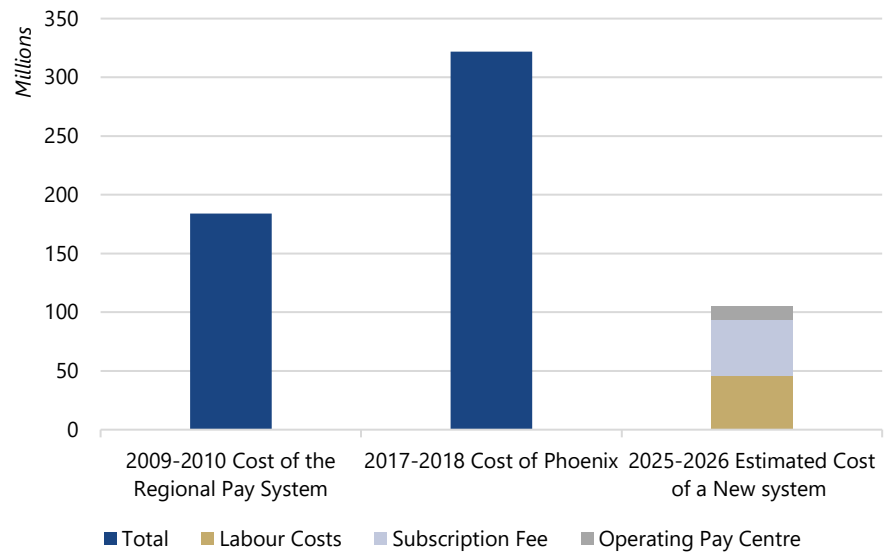
This report also assumes all aspects of the replacement are completed successfully, on time and on budget. The complexity of federal pay, the nature of large software procurements more generally, and the experience of Phoenix all suggest this project is high risk.

Even with significant upside risk, PBO's estimates reflect the potential for future savings when compared to both projections made in the Initiative to Fix the Pay System Business Case and historic spending on pay administration as shown in Figure 6-1. This is due to the potential for greater automation, and assumes the continued consolidation of pay advisors.

Our estimates therefore suggest it is possible to realize savings on pay administration, provided the right software is chosen and its implementation is well executed.

Figure 6-1

Comparing PBO Estimates to Cost of Phoenix and the RPS



Sources: Parliamentary Budget Officer, Public Services and Procurement Canada.

Note: Assumes 540 Pay Centre employees.
2009-10 cost of the Regional Pay System and 2017-18 costs of Phoenix are uninflated.

Appendix A: Calculations

A.1 Subscription Costs Calculations

PBO gathered a range of system costs and successively adjusted for the size, complexity and SaaS procurement model. After those adjustments were made, the resulting range was inflated to 2023 dollars using PBO forecasts. Table A1-1 reports these ranges on a per-account basis and details the applied calculations.

Lower range estimates refer to the 1st quartile of the range, while high range estimates refer to the 3rd quartile.

Table A1-1 Subscription Fee Full Scaling

<i>per-account cost</i>	Original System Costs	Adjusted for Scale	Adjusted for Scale and Complexity	Adjusted for Scale, Complexity and SaaS Savings
Low	\$110	\$62	\$98	\$93
Average	\$184	\$125	\$154	\$143
High	\$234	\$181	\$197	\$177

Source: Parliamentary Budget Officer

Note: In 2019 dollars.

Scale

To estimate the economies of scale the federal government would benefit from, PBO consulted a publicly available contract, which included a pricing model used by the United States Government Services Agency (GSA), and trends identified in benchmarking reports.

Estimated for this report, the federal government would require accounts for 300,000 users, making it one of the largest pay administration systems in the country. This scale is expected to decrease per-account costs in comparison with a system with significantly fewer accounts.

Public contract details from an IBM service agreement with the US GSA, outlined the cost per subscriber based on total subscribers.¹⁹ This is a good indication of the potential economies of scale from which the government, with 300,000 accounts, will be able to benefit. PBO was unable to find additional sources to estimate economies of scale.

Table A1-2 Cost Reductions from Size of Organization

Number of Employees	Cost Premium
15,000 - 29,999	2.83
30,000 - 59,999	1.81
60,000 - 89,999	1.32
90,000 - 119,999	1.13
120,000 - 149,999	1.06
150,000 +	1.00

Sources: Government Services Agency, IBM

Unscaled system costs can be found in table 5-1. After scaling, the original per-subscriber range of \$110 to \$234 declined to a range of \$62 to \$181.

Table A1-3 Scaling for Size

<i>On a per-account basis</i>	Original System Costs	Adjusted for Scale	% Change
Low	\$110	\$62	-43%
Average	\$184	\$125	-32%
High	\$234	\$181	-23%

Source: Parliamentary Budget Officer

Complexity

The complexity of any IT system is hard to quantify. In the case of the federal government, much of the complexity is driven by its business requirements. A discussion of complexity can be found in Section 1.4.

Even with all business requirements met, a system can have differing levels of automation. For example, the RPS, which had low levels of automation, required manual intervention and verification to process a pay change, for example, a raise. The higher the level of automation, the more complex the system would have to be, but the lower the need for manual intervention (and the lower the labour costs).

To compare different pay systems to the federal system, PBO grouped systems into the categories of high, medium or low complexity.

High complexity systems are on par with the complexity of the federal system. This means that they implement numerous collective agreements

and service many departments with differing needs. They also feature high levels of automation. Phoenix is an example of a high complexity system.

Medium complexity systems implement one or more collective agreements and service multiple departments with differing needs. They also feature some level of automation. The RPS is an example, as are the pay systems used by provincial governments.

Low complexity systems are not capable of meeting typical government business requirements. They are programmed to meet the business requirements for a typical private firm and likely offer little customization. PBO did not collect data on low complexity systems.

In comparing the costs of medium and high complexity systems, after scaling for size, PBO identified a premium of 1.6.

Table A1-4 Cost Premium from High Complexity

Complexity	Cost per-account
Average of Medium Systems	\$151
Average of High Systems	\$238
High Complexity Premium	1.6

Source: Parliamentary Budget Officer

Note: A high complexity premium of 1.6 means that the average high complexity system would be 1.6 times more expensive than the average medium complexity system.

PBO scaled all medium complexity systems by the high complexity premium. This significantly increased the low range of the per-account costs.

Table A1-5 Scaling for Complexity

<i>On a per-account basis</i>	Adjusted for Scale	Adjusted for Scale and Complexity	% Change
Low	\$62	\$98	57%
Average	\$125	\$154	24%
High	\$181	\$197	9%

Source: Parliamentary Budget Officer

Adjustment for Software as a Service Savings

TBS's cloud adoption strategy notes the cost benefits of SaaS, as well as other cloud delivery models.²⁰ PBO was unable to find information about the cost savings from deploying a SaaS payroll system. Instead, we used studies on the cost savings from moving to cloud-based software solutions (of which a SaaS pay solution is an example).

A 2014 study done by the United States Government Accountability Office (GAO) found that not all implementations of cloud computing services achieved cost savings. This was often due to the prioritization of service quality over cost reduction. Of the cloud services that did achieve cost reductions, the average saving was 22 per cent, ranging from 11 per cent to 50 per cent.²¹

A 2010 study by the Brookings Institute found that government entities that moved to a cloud solution realized savings of 25 per cent to 50 per cent over the cost of maintaining their current system.²²

As a prudent estimate, PBO scaled down the costs of in-house government systems by 10 per cent to factor in savings of moving to SaaS. The resulting range is moderately lower.

Table A1-6 Scaling for SaaS

<i>per-account cost</i>	Adjusted for Scale and Complexity	Adjusted for Scale, Complexity and SaaS	% Change
Low	\$98	\$93	-5%
Average	\$154	\$143	-8%
High	\$197	\$177	-10%

Source: Parliamentary Budget Officer

Adjusting for inflation

After adjusting for scale, complexity and SaaS savings, the range is scaled assuming a 2% cost increase each year. This brings the final range to \$100 to \$192, with an average of \$154 in 2023 dollars.

A.2 Labour Cost Calculations

PSPC provided PBO with the historic number of Pay Centre employees by classification. PBO made the following assumptions when estimating past and future labour costs:

- Total personnel spending is equal to salary plus 27% in benefits;
- Salary information was taken directly from respective collective agreements, with annual salary increases of 1.25 per cent;
- All salaries were set to the average of the salary ranges provided by the collective agreement for both staff²³ and executives;²⁴
- We assume the number and classification ratios of employees will remain the same from 2018-19 to 2022-23.

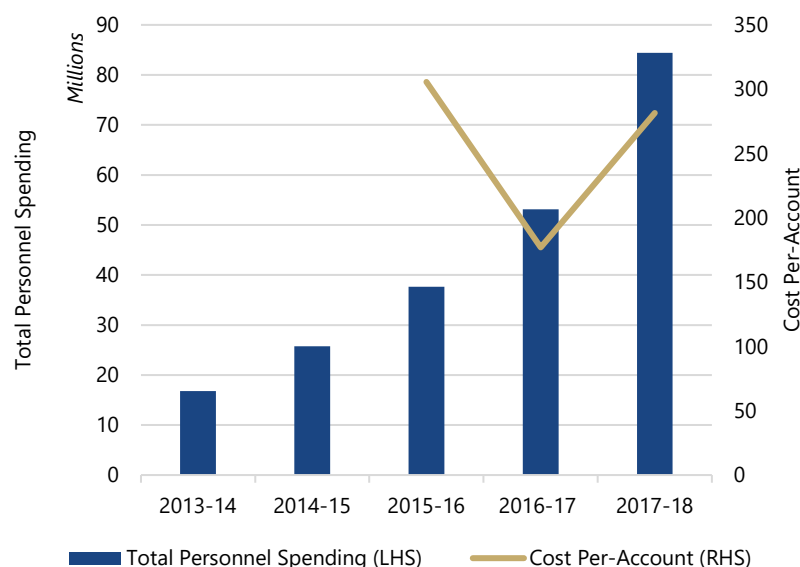
For simplification, we refer to AS-01s, CR-04s, and CR-05s as compensation advisor trainees, and AS-02s and AS-03s as compensation advisors. AS-04s are more experienced compensation advisors referenced as team leaders.

Lastly, AS-07s are managers. For estimating future personnel spending we assume a workforce comprised only of AS-01s, AS-02s, AS-04s, AS-07s, and an EX-02 executive.²⁵

Historic Personnel Spending

PSPC did not track labour costs on an ongoing basis while the Regional Pay System was in use. In the 2009 Initiative to Fix the Pay System Business Case, it is noted that there were 1,533 AS-02s and 250 AS-04s employed to process pay in 2008-09.²⁶ PBO was informed that 1389 compensation advisors received workforce adjustment letters between 2012 and 2015. Those 1389 compensation advisors are not accounted for in either the PBO's or PSPC's estimates of historic spending.

Historic costs under Phoenix, and during the transition period were provided by PSPC. These estimates do not include compensation advisors who worked in other departments at the same time, for which PSPC was unable to provide an estimate. Pay was processed by compensation advisors who worked in departments prior to 2013-14, with the workload slowly being transferred to pay centre employees between 2013 and 2016.

Figure A2-1 Total Personnel Spending - Pay Centre Employees

Sources: Parliamentary Budget Officer, Public Services and Procurement Canada

* includes employees at satellite pay offices

The number of accounts serviced by Phoenix was 123,162 in 2015-16. The PBO was unable to reconcile why PSPC reported having more FTEs serviced by Phoenix than there were working for the government in fiscal years 2016-2017 and 2017-2018. Therefore per-account costs were estimated assuming 300,000 accounts.

These estimates do not include compensation advisors who worked in other departments at the same time. PSPC was unable to provide an estimate for the total number of employees administering pay for any other year.

Instead, PBO was informed that 1,389 compensation advisors received workforce adjustment letters between 2012 and 2015. Those advisors are not accounted for in either PBO's or PSPC's estimates of historic spending.

Future Personnel Spending

In line with the Bloomberg benchmarking report, PBO calculates the range of compensation advisors needed under a new system using staffing ratios. For large employers, the Bloomberg report finds an average of 2.5 payroll department staff per 1,000 employees for government organizations, and a ratio of 1.5 for all organizations surveyed.

The Pay Consolidation Initiative intended to have 460 compensation advisors and a combined 90 managers and support staff for a ratio of 1.8. Table A2-1 shows these ratios alongside the number of pay employees needed, and the number of pay accounts each pay employee would be responsible for.

Note that pay employees would encompass all staff working at the Pay Centre, including support staff and managers.

As of April 2018, there were about 1,500 staff working in pay operations²⁷, or a ratio of 0.5. Other federal departments with independent pay systems were found to have pay staff ratios above benchmarks.

Table A2-1 Ratio of Pay Staff to Total Employees

	Ratio	Number of Pay Employees	Number of accounts per Pay Employee
Benchmarking - All	0.15	450	667
Pay Consolidation - Goal	0.18	540	556
Benchmarking - Government	0.25	750	400
Phoenix as of April 2018	0.5	1,500	200

Sources: Parliamentary Budget Officer, Bloomberg BNA

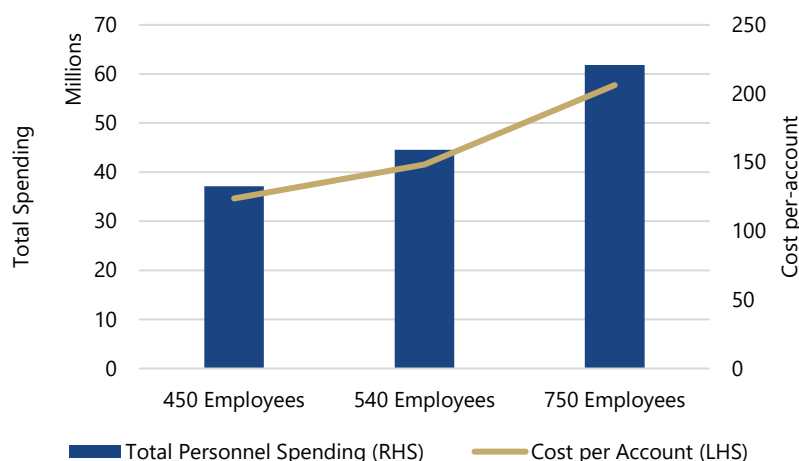
PBO assumed a range of 450 to 750 pay employees, consistent with the goals of pay consolidation and general government benchmarks. The lower the ratio required to process all pay transactions, the lower the labour costs. Future personnel spending was calculated in the same manner as historic personnel spending.

Based on historic employee counts, PBO assumed the following distribution of Pay Centre employees, plus one EX-02 executive:

Classification	Percent of Workforce
AS-01s	48%
AS-02s	32%
AS-04s	16%
AS-07s	3%

Assuming the government can meet the industry-wide benchmark of a 0.15 ratio or 450 employees, total personnel costs would reach about \$37.1 million in 2023-24.

If the ratios were either 0.18 or 0.25, then total personnel costs would be \$44.5 million or \$61.9 million, respectively. Figure A2-2 depicts this range on a total and cost per-account basis.

Figure A2-2 Comparing Total Costs Based on Employees

Source: Parliamentary Budget Officer PBO

Note: For fiscal year 2023-34

Estimating Training Costs

More compensation advisors will be required at the launch of the new system to allow time for training. PSPC was unable to provide costs for training a compensation advisor.

PBO used projections for training time from the 2009 Initiative to Fix the Pay System Business Case to estimate the increased number of employees PSPC will have to retain while initial training occurs.²⁸ Table A2-2 shows the training period and the source of funding.

Because pay consolidation was a PSPC project, all costs associated with training were the responsibility of the project, while regular labour costs continued to be the responsibility of the departments, as had always been the case with RPS.

Table A2-2 2009 Business Case: Sourcing of Funds for Compensation Advisors

Period (in months)	Source of funds	
	Consolidation of Pay Services	Departments
0 to 6	80%	20%
7 to 12	64%	36%
13 to 18	48%	52%
19+	0%	100%

Source: Public Services and Procurement Canada 2009 Initiative to Fix the Pay System Business Case.

Because compensation advisors are already trained in Phoenix, PBO assumes they have skills equal to the initial six months of training, reducing the number of extra employees required.

Calculated on a yearly basis, this translates to retaining an additional 56 per cent of staff for the first year, and 24 per cent for the second.

Table A2-3 Cost of Additional Employees During Training

Year	Permanent Employees Needed	Extra Employees Needed During Training	Costs Specific to Training (Millions)
2023	450	252	\$20.7
	540	302	\$25.0
	750	420	\$34.5
2024	450	108	\$8.9
	540	130	\$10.7
	750	180	\$15.0

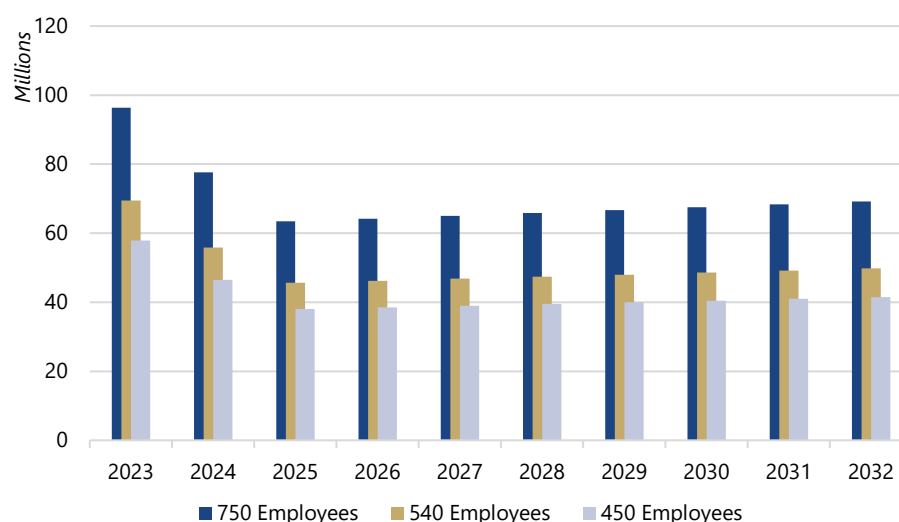
Source: Parliamentary Budget Officer

The total cost of training will depend on the number of employees required at full capacity. This will increase costs for the first two years in which the new software is in place by between \$29.6 million and \$49.5 million.

Total Personnel Spending

Inclusive of training costs, total personnel spending for the first year under the new system will range from \$57.9 million to \$96.3 million. After training is complete in 2025, the range declines to between \$38.0 million and \$63.4 million. Figure A2-3 depicts this on a per-account basis.

Figure A2-3 Per-Account Personnel Spending – By number of employees required



Source: Parliamentary Budget Officer
Fiscal Years.

Sensitivity Analysis: Composition of Workforce

PBO used historic employee counts and consultation with PSPC to arrive at the projected workplace composition. Notably, this assumes a workforce that is composed of AS-01s for almost half of the population, the lowest paid position.

This assumption was based on the composition of the Pay Centre from 2012-13 during its creation, and Phoenix stabilization through 2017-2018. Because the Pay Centre has never operated under “normal” circumstances, it is hard to predict how many trainees at the AS-01 level will be required.

For the purposes of providing sensitivity analysis, PBO estimated costs if the trainees were to make up a much smaller percentage of the workforce. Under a scenario in which AS-01s made up 10 per cent of the workforce and AS-02s made up 71 per cent (with AS-04s and AS-07s unchanged), costs increase to between \$38.2 million and \$63.8 million, excluding training costs. This represents a roughly 3 per cent increase in costs compared to PBO’s main estimates.

Appendix B: PSPC 2009 Cost Estimates

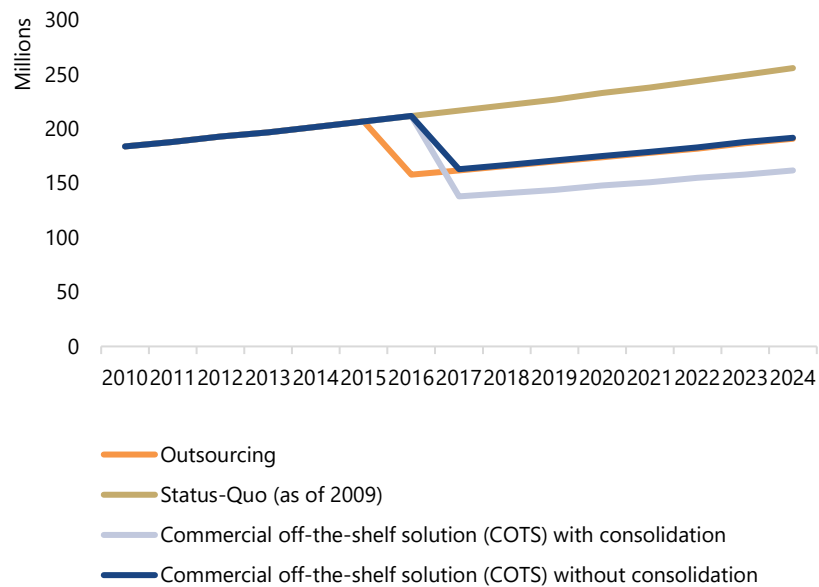
In 2009, as part of the Pay Modernization and Pay Consolidate Initiatives, an "Initiative to Fix the Pay System" business case was prepared by PSPC. It focused on ongoing spending, which was defined as the sum of advisory services, training, operations, special projects, the Director General's office, recruitment, other administrative costs, and the cost of compensation advisors. Total system costs for fiscal year 2009-10 were estimated at \$184 million.

Options that were considered included maintaining the current system as "status quo", outsourcing, or purchasing a commercial pay software with or without consolidating the compensation advisors.

The cheapest option – to purchase a commercial pay software and consolidate – was chosen. This was eventually turned into Phoenix, with an expected cost of \$162 million by 2023.

Figure B-1

Cost Estimates from the Initiative to Fix the Pay System



Source: PSPC 2009 Initiative to Fix the Pay System Business Case
Fiscal years.

Appendix C: SaaS Model

The Government of Canada's invitation to qualify for the HR and Pay Next Generation Solution procurement specifies: "The bidder must demonstrate that the proposed solution is offered through a Software as a Service (SaaS) model".²⁹ Based on this requirement, PBO assumed that any software procured for a new pay system would be required to run on a SaaS model.

Using a SaaS licence is different than outsourcing the pay solution. Outsourcing implies that an outside firm is contracted to provide a service that would otherwise be done in-house. SaaS represents a model for purchasing software.

Table C-1 Comparing Software Models

Traditional Software Model	SaaS Model
Software is delivered to customers for installation on the customers' computers.	Software is accessed online (via Web) and installed in data centres.
Customers are typically responsible for installation, maintenance, access time, hardware performance, and applying any updates	The vendors or providers are responsible for installation, maintenance, access time, performance, and updates.
The customers require in-house expertise in all technical aspects.	The customers do not require in-house expertise in the technical aspects.
Slow to deploy.	Faster and less expensive implementations.
The customers need a licence, which includes the pricing model in order to use the software.	The customers need a service contract, not licence, to use the software.
Mostly is sold with fixed one-time fee or perpetual license	The software is typically sold in subscription and/or usage based on several metrics.
Typically counted as assets (capital expenses) and has bigger financial risk for the customers.	SaaS cannot be counted as assets on a balance sheet because it is considered more as operational expense, which has a smaller risk.

Source: Abdat, 2010³⁰

For the public sector, SaaS can be financially beneficial because it allows complex software to be accessed without the risks and costs associated with development. New risks include firms providing SaaS applications without

the existing infrastructure and experience required to maintain public sector requirements for data storage and security.

In addition, the SaaS provider could go bankrupt (or otherwise become unable to provide the service), which could impede use of the system.³¹

Appendix D: System Descriptions and Costs

General Services Administration - NewPay

In September 2018, the United States General Services Administration (GSA) announced the award of a 10-year, \$2.5-billion blanket purchase agreement for a payroll, work schedule and leave management SaaS system.

The system, named NewPay, is intended to replace the in-house legacy systems currently run by four government agencies. “NewPay demonstrates how the government will better coordinate and document common business needs across agencies”.³²

Two teams consisting of several large technology and consulting firms were both awarded blanket purchase agreements for their respective enterprise resource management SaaS solutions. Details of the contract are confidential and PBO is not able to estimate a yearly cost or a cost per account.

Department of National Defence – Military Pay Services

The Department of National Defence currently uses two systems to manage pay and benefit administration for the Regular and Reserve Force members of the Canadian Armed Forces. Civilian staff have their pay administered through Phoenix.

The Central Computation Pay System (CCPS) is used to administer pay and benefits for approximately 65,000 members of the Regular Force, as well as members of the Reserve Force on operational service. The CCPS has been in use since the 1970s, with a major redesign occurring in 1999.

Pay is administered for approximately 42,000 Reserve members and 4,000 Canadian Cadet Organization employees through the Revised Pay System for the Reserves (RPSR). The RPSR has been in use since 1997, with ongoing upgrades.

Due to data limitations, both systems are lumped together in measures of the cost of military pay services. Between fiscal years 2003-04 and 2016-17 the per-member (per-account basis) of administering military pay ranged from \$68 to \$86 per year.

Royal Canadian Mounted Police – Member Pay System

The RCMP administers pay to its members and cadet graduates through its internally developed Members Pay System.

Since 2000-01, there has been a service level agreement between the RCMP and PSPC for payroll administration and support services, provided by the PSPC Compensation Sector. Services provided include system maintenance and testing, payroll, tax slips, remittance services, and the coordination of system programming services.

Because of data limitations, cost estimates are only available for 2012-13 onward. Between 2012-13 and 2016-17, per employee costs (based on 26 pay transactions per year) ranged from \$153 to \$292.

Public service employees and RCMP reservists are paid through Phoenix.

Canada Revenue Agency - Corporate Administrative System

The Canada Revenue Agency (CRA) operates the Corporate Administrative System (CAS) for use within the agency. CAS runs on SAP software and has a wide variety of functionality including finance, project system, controlling, materials management, payroll reporting, personnel management, time management, employee/manager self-service, and e-recruitment.

Although the CAS has payroll reporting functionality, it is only used for financial reporting and projections. CRA employees have their pay processed through Phoenix. However, the CAS remains an example of a government-run software system with HR applications. Because of the large number of functions in addition to HR, costs are higher than in other systems.

In 2017-18, the per-employee cost of CAS was \$316. The software licence cost was \$1.2 million, or \$26 per employee. Over the previous 10 years, those costs ranged from \$553 (in a year with significant development costs) to \$292. During the same period, operating costs made up on average 83 per cent of total costs, with development counting for the remainder.

Mid-sized Provincial Government

Since 2004, a provincial government with 30,000 employees has contracted out payroll and HR services. A Canadian HR service provider operates the provincial government's employee data administration, payroll processing, and benefits administration.

The service provider also runs a contact centre for employee support. HR services have been outsourced to the same provider, including health benefit administration, group life insurance, and deferred salary leave. Because of

outsourcing, the provincial government has comparatively low in-house labour costs.

As of 2016, the yearly payroll services cost per employee is \$104, and the benefit service cost per employee is \$17. An independent benchmarking survey provided to PBO by the provincial government found the cost to be competitive given the market for HR services and the complexities of public service pay.

Large-sized Provincial Government

The Large-sized Public Service currently uses the Oracle PeopleSoft Platform to administer HR, payroll, benefits and time and attendance for about 72,000 payees in the past fiscal year 2018-19.

PeopleSoft had been in use for HR since 2000, with a separate system used to administer payroll. In 2010, pay and benefits administration was integrated into PeopleSoft. The four-year project received \$38.7 million in funding.

For fiscal year 2018-19, costs associated with operating, maintaining, enhancing and updating the system, as well as licensing and associated infrastructure, is \$16.86 million or \$234 per payee.

Senate of Canada

The Senate's approximately 800 employees were originally paid through Phoenix. A private system was used for senators and retired senators. The Senate has two collective agreements plus different terms and conditions of employment for three other employee groups.

In 2017, the Senate issued a tender notice for a new payroll system that would run independently from the rest of the public service and serve employees excluding senators.³³ In April 2018, a five-year \$927,250 contract was awarded.³⁴ The contract did not include any one-time implementation fee, but rather uses a per-transaction costing model.

Based on the contract amount awarded, PBO estimates a per-employee cost of \$234 in 2019 when accounting for inflation.

Department of the Interior – Federal Personnel and Payroll System

Since the late 1980s, the Interior Business Center (IBC) of the United States Department of the Interior (DoI) has operated the Federal Personnel and Payroll System (FPPS).

The FPPS administers personnel and payroll functions for client agencies with the DoI/IBC acting as a federal shared services provider. Individual agencies

delegate their payroll services to the DoI/IBC or another government partner, based on their rules and requirements.

The FPPS is currently under agreement to provide pay and processing services for 49 government agencies and their associated 300,000 employees.³⁵ The DoI/IBC provided pricing/cost information for US fiscal years 2018 to 2020 to PBO, but requested it not be disclosed publicly.

General Services Administration – Payroll Shared Services

The United States General Services Administration agency (GSA) has been a provider of payroll services for other departments and agencies for over 35 years. It provides a full range of payroll services for more than 21,000 employees, which includes GSA and more than 30 independent agencies or presidential commissions.³⁶

PBO referenced an authorized federal supply schedule price list between IBM and the GSA, which is publicly available. For its HR and pay solution, IBM offers tiered per-employee pricing based on the total number of employees serviced. For a customer with more than 150,000 employees, the cost per employee was US\$188.41 for US fiscal year 2018.³⁷

Notes

1. Treasury Board Secretariat. [The Treasury Board of Canada Secretariat's Response to the Office of the Auditor General of Canada's Report on Phoenix Pay Problems: An Estimate of Costs to Stabilize Phoenix and Operate the Pay System](#). 2018 (accessed March 25, 2019).
2. S.C. 1996, c. 16.
3. Public Works and Government Services Canada. Initiative to Fix the Pay System Business Case. May 2009.
4. Public Works and Government Services Canada. Initiative to Fix the Pay System Business Case. May 2009.
5. Public Works and Government Services Canada. Initiative to Fix the Pay System Business Case. May 2009.
6. Office of the Auditor General. [Report 1—Building and Implementing the Phoenix Pay System](#). Spring 2018 (accessed March 25, 2019).
7. PeopleSoft, marketed by Oracle, provides a suite of human capital management, financial management, orders and inventory management, among other applications. url: <https://www.oracle.com/ca-en/applications/peoplesoft/products.html>
8. Office of the Auditor General. [Report 1—Building and Implementing the Phoenix Pay System](#). Spring 2018 (accessed March 25, 2019).
9. Bloomberg BNA. Payroll Department Benchmarks and Analysis 2015-2016. 2015.
10. Pay Administration costs include refers to costs associated with indirect support for pay operations such as providing financial reconciliation, communications, the liaison unit, the client service office, system support, program management and service systems. The front office (i.e. direct cost for pay operations) was added in 2016-17, since the implementation of Phoenix, to show the direct cost to deliver pay centre services. Source: IR 389.
11. Treasury Board Secretariat. [The Treasury Board of Canada Secretariat's Response to the Office of the Auditor General of Canada's Report on Phoenix Pay Problems: An Estimate of Costs to Stabilize Phoenix and Operate the Pay System](#). 2018 (accessed March 25, 2019).
12. TBS is currently undertaking a project to collect and identify the pay rules that are in the current pay system.
13. Benay, Alex. [Next Generation HR and Pay, and how we're going to do things differently](#). Treasury Board Secretariat, Open Government. August 2018 (accessed March 25, 2019).
14. Deloitte. HR Outsourcing Report. October 21, 2016.

15. In the preliminary project approval phase the Business Case and project charter recommendations are approved. Public Services and Procurement Canada. [Preliminary Project Approval Introduction](#). November 2018 (accessed April 26, 2019). In the effective project approval phase approval documents are presented and the project is authorized to move to the implementation phase. Public Services and Procurement Canada. [Effective Project Approval Introduction](#). November 2018 (accessed April 26, 2019).
16. Bloomberg BNA. Payroll Department Benchmarks and Analysis 2015-2016. 2015.
17. Public Works and Government Services Canada. Initiative to Fix the Pay System Business Case. May 2009.
18. Bloomberg BNA. Payroll Department Benchmarks and Analysis 2015-2016. 2015.
19. International Business Machines. [GSA Human Resources & EEO Services Schedule](#). December 2017 (accessed April 2, 2019).
20. Treasury Board Secretariat. [Government of Canada Cloud Adoption Strategy: 2018 update](#). 2018 (accessed March 25, 2019).
21. United States Government Accountability Office. [Cloud Computing: Additional Opportunities and Savings Need to Be Pursued](#). September 2014 (accessed March 25, 2019).
22. West, Darrell. Saving Money Through Cloud Computing. Brookings Institute. April 2010 (accessed March 25, 2019).
23. Treasury Board Secretariat. Program and Administrative Services: [Agreement between the Treasury Board and Public Service Alliance of Canada](#). (accessed April 26, 2019).
24. Treasury Board Secretariat. [Rates of pay for unrepresented and senior excluded employees](#). (accessed April 26, 2019).
25. The salary ranges of CR-04s and CR-05s (\$47,729 to \$51,518 and \$52,162 to \$56,471, respectively as of 2017) are similar to that of AS-01s (\$51,538 to \$57,643 as of 2017). The PBO therefore assumes AS-01s can be substituted for CR-04s and CR-05s with limited impact on costs for the purposes of these estimates.
26. Public Works and Government Services Canada. Initiative to Fix the Pay System Business Case. May 2009.
27. Public Service and Procurement Canada. [Measures to stabilize the pay system](#). 2018 (accessed March 25, 2019).
28. Public Works and Government Services Canada. Initiative to Fix the Pay System Business Case. May 2009.
29. Public Works and Government Services Canada. [Tender Notice: "HRP-RHP" - ITQ - Next generation HR and Pay of the Government of Canada](#). October 2018 (accessed April 8, 2019).
30. Abdat, N & Spruit, Marco & Bos, M. Software as a service and the pricing strategy for vendors. Digital Product Management, Technology and Practice: Interdisciplinary Perspectives. 154-192. 2010.

31. Janssen, Marijn and Joha, Anton, "Challenges for Adopting Cloud-Based Software as a Service (Saas) in the Public Sector". ECIS 2011 Proceedings. 80. 2011.
32. Government Services Administration. [GSA Awards NewPay BPA for Software-as-a-Service for Payroll and Work Schedule and Leave Management](#). September 2018 (accessed April 2, 2019).
33. Public Works and Government Services Canada. [Tender Notice: Payroll Services for the Senate of Canada \(SEN-012 17-18\)](#). November 2017 (accessed April 2, 2019).
34. Senate of Canada. [Current Contracts Reports](#). 2017 (accessed April 2, 2019).
35. Department of the Interior. [Interior Business Centre: Human Resources](#). (accessed April 3, 2019).
36. General Services Administration. [Payroll Shared Services](#). February 2019 (accessed April 2, 2019).
37. International Business Machines. [GSA Human Resources & EEO Services Schedule](#). December 2017 (accessed April 2, 2019).