KPMG

cutting through complexity

Ministry of Energy

Assessment of Organizational and Structural Opportunities at Hydro One

Confidential – Commercially Sensitive Material

February 28, 2013

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How to use this document

The Ministry of Energy engaged KPMG to assess existing benchmarking studies and to identify organizational and structural opportunities for cost savings at Hydro One.

Our role was to outline opportunities that came to our attention during our work and to offer our comments and recommendations for the Ministry's consideration. These comments, by their nature, may be critical as they relate solely to opportunities for change or enhancement and will not address all of Hydro One's current activities and undertakings.

Estimated savings in this report are based on specific assumptions and actions undertaken by Hydro One. Actual savings achieved for the period covered and the time to achieved these savings will vary from the information presented and the variations may be material.

Our procedures consisted solely of inquiry, observation, comparison and analysis of Hydro One-provided information. We relied on the completeness and accuracy of the information provided. Such work does not constitute an audit. Accordingly, we have expressed no opinion on financial results, internal controls or other information.

Our analysis and advice is intended solely for the Ministry's Senior Management's internal use and may not be edited, distributed, published or relied on by any other person.

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Acronyms

Acronym	Definition
AA	Asset Analytics (SAP Module)
AIP	Asset Investment Planning (SAP Module)
ADM	Application Development and Maintenance
Bill 198	An act put into place by the Ontario Government to improve public confidence in the integrity of financial reporting of public companies.
CIS	Customer Information System
COE	Center of Excellence
Dx	Distribution
EAM	Enterprise Asset Management
EPC	Engineering, Procurement, Construction
EP&D	Engineering Projects & Delivery (a group within Hydro One)
ERP	Enterprise Resource Planning (software application)
FTE	Full-Time Equivalent
GAAP	Generally Accepted Accounting Principles
GB	Gigabyte
GIS	Geographic Information System
IFRS	International Financial Reporting Standards
OAR	Ontario Authority Register
O&M, OM&A	Operations & Maintenance; Operations, Maintenance & Administration
PO	Purchase Order
RFP	Request for Proposal
SAN	Storage Area Network
TB	Terabyte
Tx	Transmission
VDI	Virtual Desktop Infrastructure

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Table of Contents

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Executive Summary

The Ministry of Energy engaged KPMG to assess existing benchmarking studies and to identify organizational and structural opportunities for efficiencies at Hydro One and OPG.

The Provincial Government announced plans in the 2012 Ontario Budget to move forward with a comprehensive review of the electricity sector and its various agencies. One element of the review is an independent, critical review and assessment of existing benchmarking at Hydro One and OPG in an effort to improve efficiency and find additional value for rate-payers and the Province.

In August 2012, the Ministry of Energy engaged KPMG to perform this review. The study has four main objectives:

1. Review and analyze existing benchmarking studies on compensation, productivity and efficiency
2. Identify organizational and structural opportunities for efficiency improvements within Hydro One and OPG
3. Prepare high level plans for improving efficiency
4. Identify potential impacts on rate-payers

This report addresses objectives 2 and 3 of the project for Hydro One (Deliverables #3 and #4 from the Ministry's RFP). In this report, we identify organizational and structural opportunities for efficiency improvements within Hydro One and corresponding high level implementation plans.

Our study was focused on the review of Hydro One Networks which constitute over 95% of Hydro One Inc's cost base. In this study, we were asked to consider all opportunities including ones that Hydro One may not have been previously allowed to pursue, such as offshoring.

Approach and Methodology

The Ministry requested that structural and organizational improvement opportunities be identified based on the analysis of benchmarking reports provided by Hydro One. That is, where Hydro One's performance was materially different than an industry benchmark, we investigated the causes of the difference and determined whether an opportunity to improve productivity or efficiency existed.

Due to limitations of the benchmarking reports from both OPG and Hydro One, a revision of our initial approach was required in order to be able to identify material opportunities. Our revised approach was reviewed and approved by the Ministry prior to the commencement of this portion of the study.

Revised Approach

Our revised approach involved developing opportunity hypotheses using either benchmarking report analysis or, where benchmark analysis was not available, utility industry leading practices and our team's experience. We tested these hypotheses to determine if incremental opportunities existed and in the cases where incremental opportunities were found, we estimated the potential savings. Our savings estimates are based on preliminary analysis and require further detailed analysis of each opportunity if pursued.

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Executive Summary

Hydro One Overview

In 2011, Hydro One had revenues of $5.47b, OM&A expenses of $1.09b and a capital budget of $1.45b. Hydro One had approximately 5430 staff in the same period.

Hydro One's Business Improvement/Transformation Programs

In 2008, Hydro One began the Cornerstone project which is a company-wide, multi-year project to replace several of Hydro One's key enterprise information systems as they reach their end-of-life. The Cornerstone project is also a major business process transformation initiative that provides a platform for further effectiveness and efficiency gains at Hydro One. Hydro One is now in the fourth and final phase of this project. In addition to the Cornerstone project, Hydro One has initiated several smaller projects that are expected to drive productivity and efficiency savings.

Hydro One has indicated that it has begun to realize savings from early phases of the Cornerstone project. Based on our observations, the Cornerstone project has provided Hydro One with access to a large set of comprehensive tools that enables management to implement leading industry practices and increase productivity and efficiency. Hydro One will need to focus on: integrating the new tools into business processes, fully leveraging the tools across the company, and tracking and monitoring the effective usage of the tools. These are critical steps in order to harvest all the anticipated project savings.

The opportunities that we have identified are incremental to the benefits from Cornerstone project and the additional productivity and efficiency projects underway at Hydro One.

Sources: 2011 Annual report, Hydro One internal reports, EB-2012-0031, Exhibit D1, Tab 4, Schedule 3

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Executive Summary

Findings – Operations

The following table lists the hypotheses that we tested for Operations and whether an opportunity was identified.

Operations Hypotheses	Opportunity?
1) Hydro One can reduce capital costs managed by Engineering and Project Delivery through increased use of EPC suppliers	Incremental Opportunity
2) Hydro One can reduce operating costs by improving Station Maintenance worker productivity	Incremental Opportunity
3) Hydro One can reduce Forestry costs by outsourcing vegetation management activities	Incremental Opportunity
4) Hydro One can reduce maintenance costs and extend the life of existing assets through rigorous asset management	No incremental opportunity
5) Hydro One can improve frontline crew productivity by using detailed metrics to track productivity performance	No incremental opportunity
6) Hydro One can reduce operating cost by improving Lines Maintenance worker productivity	No incremental opportunity
7) Hydro One can reduce costs in Engineering and Project Delivery by improving worker productivity	No incremental opportunity
8) Hydro One can reduce forestry costs by using segmented maintenance cycles for different types of vegetation	No incremental opportunity

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Executive Summary

Findings – Supply Chain

The following table lists the hypotheses that we tested for Supply Chain and whether an opportunity was identified.

Supply Chain Hypotheses	Opportunity?
1) **Hydro One can reduce operational costs by developing a shared service organization for procurement**	**No incremental opportunity**
2) **Hydro One can reduce operating costs by strategically sourcing products and services from suppliers**	**No incremental opportunity**
3) **Hydro One can lower operating costs by reducing inventory levels of non-critical items**	**No incremental opportunity**

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Executive Summary

Findings – Information Technology

The following table lists the hypotheses that we tested for Information Technology and whether an opportunity was identified.

Information Technology Hypotheses	Opportunity?
1) Hydro One can reduce application services costs by offshoring development and maintenance of non-business critical applications	Incremental Opportunity
2) Hydro One can continue to reduce end user computing costs by extending the deployment of Virtual Desktop Infrastructure	Incremental Opportunity
3) Hydro One can reduce storage costs by replacing the current volume-based cost model to an end-point cost model as part of the outsourcing contract renewal	Incremental Opportunity
4) Hydro One can reduce computing services costs by outsourcing or offshoring the monitoring service for the power systems data centre	No incremental opportunity
5) Hydro One can reduce computing services costs and increase efficiency by rationalizing duplicate or aging applications	No incremental opportunity
6) Hydro One can reduce computing services costs by increasing the ratio of virtualized servers to physical servers	No incremental opportunity
7) Hydro One can reduce computing services costs by consolidating data centre facilities	No incremental opportunity
8) Hydro One can reduce desktop support costs by expanding self service functionality	No incremental opportunity
9) Hydro One can reduce costs associated with IT business support function by centralizing shadow IT functions that are currently within the lines of business into the central IT function	No incremental opportunity

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Executive Summary

Findings - Finance

The following table lists the hypotheses that we tested for Finance and whether an opportunity was identified.

Finance Hypotheses	Opportunity?
1) Hydro One can reduce Finance & Controllership costs by centralizing transactional processes such as accounts payable, accounts receivable, general ledger and financial reporting activities	No incremental opportunity
2) Hydro One can reduce operating costs by offshoring Finance & Controllership and Assurance related activities	No incremental opportunity
3) Hydro One can lower Finance & Controllership costs and improve efficiency through greater automation of transactional processes	No incremental opportunity
4) Hydro One can improve Finance & Controllership productivity by reducing the number of reports that are produced and by instituting self-service portals for ad-hoc reporting	No incremental opportunity
5) Hydro One can increase productivity by establishing Finance business partner roles to provide strategic decision level support and program and policy implementation support to business units	No incremental opportunity
6) Hydro One can reduce assurance costs by instituting strict guidelines around materiality, rationalizing the approval process for items such as POs, invoices, cash disbursements and expenses	No incremental opportunity
7) Hydro One can reduce assurance costs by combining all related activities under a single assurance function and by using a risk-based approach	No incremental opportunity

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Executive Summary

Findings – Human Resources

The following table lists the hypotheses that we tested for Human Resources and whether an opportunity was identified.

Human Resources Hypotheses	Opportunity?
1) Hydro One can increase HR efficiency by creating Centers of Excellence for areas of specialized expertise	No incremental opportunity
2) Hydro One can reduce operating costs by outsourcing or offshoring administrative and routine HR activities	No incremental opportunity
3) Hydro One can reduce operating costs by increasing process automation and implementing the use of self service tools by managers and employees	No incremental opportunity
4) Hydro One can increase HR productivity by establishing HR business partner roles within business units	No incremental opportunity

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Executive Summary

Opportunity Summary

We identified efficiency and productivity improvement opportunities in two major functions : Operations and IT. These opportunities involve process improvement, alternative IT hardware management approaches, outsourcing and offshoring. Process improvement and alternative IT hardware management approaches are opportunities that involve changing current processes without large changes to the current operating model. Outsourcing and offshoring are options that require more change and have greater labour force impacts. The table below provides estimated annual savings and costs for each opportunity.

Functional Area	Incremental Opportunity	Estimated Annual Savings[1] *Base Case* ($m)	Estimated Annual Savings[1] *Stretch Case* ($m)	Estimated One-time Costs ($m)	Considerations
Operations	1) Hydro One can reduce capital costs managed by Engineering and Project Delivery through increased use of Engineering, Procurement, and Construction suppliers	23[2]	77	Transition : 0.2-0.4	▪ Collective agreement issues related to using external contractors ▪ Ability to ensure work programs are well defined
Operations	2) Hydro One can reduce costs in Grid Operations by improving the productivity in Station Maintenance	5	13	Transition : 0.3-0.5	▪ Adoption rate of new tools and processes by field staff ▪ Driving change in culture and approach
Operations	3) Hydro One can reduce costs in Forestry through outsourcing vegetation management activities to more cost efficient suppliers	0/15[3]	15[4]	Severance: Up to 56.6 Transition : 0.3-0.5	▪ Collective agreement issues related to using external contractors ▪ Ensuring consistent level of service
IT	4) Hydro One can reduce application services costs by offshoring development and maintenance of non-business critical applications	0[5]	3.5	Transition : 0.8-1.2	▪ Collective agreement issues related to using external contractors ▪ Governance structure to manage and monitor service level agreement
IT	5) Hydro One can continue to reduce its end user computing costs by extending the deployment of its Virtual Desktop Infrastructure	0.55	1.6	Transition : 0.5-0.8	▪ Application compatibility and responsiveness ▪ Dependable infrastructure connectivity
IT	6) Hydro One can reduce its storage costs by replacing its current volume based cost to an end point cost model as part of its outsourcing contract renewal	0.5	0.85	none	▪ Pricing structure for new model
	Total	$29m/$44m	$111m	Severance: Up to $56.6m, Transition Costs: $2.1m-$3.4m	

Notes:

1) Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material.
2) A portion of the savings are dependent on collective agreement changes for engineering related work. Savings may be impacted if changes to the collective agreement cannot be achieved.
3) Significant changes to the collective agreement may be required, therefore the base case is also provided with no savings if changes to the agreement cannot be achieved.
4) Further detailed analysis of the Vegetation Management work methods and processes is required to estimate the Stretch Case savings and identify specific efficiency/productivity improvements. Base Case savings used here to estimate total savings.
5) Stretch case calculated for offshoring only as this option requires significant change to current offshoring mandate.

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Project Background and Objectives

Project Background and Objectives

Background

The provincial government announced plans in the 2012 Ontario Budget to move forward with a comprehensive review of the electricity sector and its various agencies. One element of the review is an independent, critical review and assessment of existing benchmarking at Hydro One and OPG in an effort to improve efficiency and find additional value for rate-payers and the Province.

The Ministry of Energy engaged KPMG to assess existing benchmarking studies and to identify organizational and structural opportunities within Hydro One and OPG.

Objectives

This study has four main objectives:

1. Review and analyze existing benchmarking studies on compensation, productivity and efficiency
2. Identify organizational and structural opportunities for efficiency improvements within Hydro One and OPG
3. Prepare high level plans for improving efficiency
4. Identify potential impacts on rate-payers

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Scope of this Report

In this report, we identify organizational and structural opportunities for efficiency improvements within Hydro One and have prepared high level plans for improving efficiency. *(Deliverables #3 and #4 from the Ministry's RFP)*

Our previous report reviewed and analyzed existing benchmarking reports from Hydro One. Where analysis was developed, we used this knowledge to identify potential areas for improvement within Hydro One and to guide our analysis of organizational and structural opportunities. In this study, we were asked to consider all opportunities including ones that Hydro One may not have been previously allowed to pursue, such as offshoring.

Our study focuses on Hydro One Networks which constitute over 95% of Hydro One Inc's cost base.

Functional Areas Reviewed

Opportunity hypotheses were developed for the following Hydro One Networks business functions:

- Operations which includes Transmission and Distribution related activities
- Supply Chain
- IT
- Finance
- HR

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Methodology and Approach

Opportunity Identification Approach

Overview

In the RFP for this study, the Ministry requested that structural and organizational improvement opportunities be identified based on the analysis of benchmarking reports provided by Hydro One. That is, where Hydro One's performance was materially different than an industry benchmark, we investigated the causes of the difference and determined whether an opportunity to improve productivity or efficiency existed.

Due to limitations of the benchmarking reports, a revision of our initial approach was required in order to be able to identify material opportunities across the major areas of the business. Our revised approach was reviewed with and approved by the Ministry prior to the commencement of this portion of the study.

The revised approach augments the initial approach with hypothesis based analysis to identify specific improvement opportunities based on comparing power industry and cross-industry leading practices to Hydro One's current operating strategy within a function.

Relevance of Past Benchmarking Reports

As discussed in our Benchmarking Analysis report, although many reports were provided by Hydro One there were limitations to the reports that prohibited us from developing a view of operational performance across all areas of Hydro One. These limitations included:

- **Span of Business Functions:** Reports did not exist for all business functions. For example, there were no benchmarking reports for the procurement function and therefore no basis of comparison.
- **Coverage within Business Functions:** In business functions where reports existed, some reports did not review all sub-functions and therefore performance comparison could only be conducted for a limited set of areas.
- **Level of Detail:** Some reports provided summary benchmarks at a function level while other reports provided detailed benchmarks at the function, sub-function and activity level. Without comparisons at the sub-function and activity level, high level benchmarks are only directional and require significant analysis to determine where specific structural or organizational opportunities exist.
- **Age of Report**: In our benchmark report review, we reviewed reports that were created within the last five years. Any major change in the company in the last few years would diminish any insights developed from our review of more older benchmark reports.

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Opportunity Identification Approach (cont'd)

Revised Approach

Our revised approach involved testing operating model hypotheses using the benchmarking report analysis where available and leading practices as well as our team's experience in the utility industry for areas where detailed benchmark analysis was not available. Our approach focused on identifying large structural and organizational opportunities and did not attempt to develop an extensive list of activity-level improvements. Our savings estimates are based on preliminary analysis of the opportunities and require more detailed analysis if the opportunity is pursued.

Limitations to our Hydro One Analysis

In the case of Hydro One, one relevant efficiency/productivity benchmarking report was available*. This report contained benchmark performance in the area of vegetation management. Consequently we were limited in our ability to select hypotheses based on specific areas of benchmark underperformance. In the absence of benchmarks to guide our hypothesis development, we developed hypotheses based on the following:

- A review of the current business improvement/transformation projects underway at Hydro One
- Utility industry and cross-industry leading practices
- Our experience working with Utility companies

* The companies in this report were anonymized and KPMG did not receive Hydro One's company identifier until after our benchmark report study was completed. Therefore a review of this report does not appear in the benchmark report study.

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Opportunity Identification Approach (cont'd)

Methodology

Hypothesis Development

- We developed a set of hypotheses for each function. Where benchmark report analysis was available, we focussed on areas where metrics indicated that performance was lower than the industry median. We developed hypotheses as to how performance could be improved or operating costs could be reduced in these specific areas.
- Where benchmark report analysis was not developed, our functional advisors developed a set of hypotheses based on power industry and cross-industry leading practices and industry experience

Hypothesis Testing

- We then collected evidence from Hydro One to prove/disprove our hypotheses. Hypothesis testing occurred in two waves where we collected extensive organizational, financial and operational data and conducted multiple interviews within each functional area of Hydro One.
- If additional hypotheses were identified in our interviews, we added them to our on-going list and collected evidence to prove/disprove them

Opportunity Identification/Evaluation

- Where sufficient evidence existed to prove a hypothesis, we then conducted further analysis to determine the size of the opportunity by estimating the potential savings.
- After developing opportunity profiles, we validated our assumptions and inputs used in our calculations with Hydro One

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Hydro One's Business Improvement/Transformation Programs

Hydro One's Business Improvement/Transformation Programs

Hydro One has several business improvement programs in place, the largest being the Cornerstone Project.

The Cornerstone Project is part of the overall information technology strategy to replace several of Hydro One's key enterprise information systems as they reach their 'end of life'. The Cornerstone Project is also a major business process transformation initiative that provides a platform for further effectiveness and efficiency gains at Hydro One. The Cornerstone Project is being carried out in four phases as summarized below*:

Phase 1 (Completed June 2008): Replaced end of life Passport application and functionality associated with work management, supply chain, procurement, accounts payable and asset registry with a modern Enterprise Asset Management ("EAM") solution using SAP.

Phase 2 (Majority Completed August 2009, minor items completed in 2010): Replaced end of life PeopleSoft application for Finance / Human Resources / Payroll processing with functionality provided by SAP. Also addressed the analytical and reporting business needs for work management, finance, investment management, HR and Pay using SAP's Business Intelligence platform.

Phase 3 (In-Service 2011-2014): Enhance integrated planning, Enterprise Asset Management / Enterprise Resource Planning / Business Intelligence systems, tools and processes by expanding Hydro One's SAP solution. This includes adding and enhancing SAP functionality for asset analytics, business planning, planning/scheduling/dispatch and supply chain optimization as well as integrating specialized software applications for asset investment planning, geo-spatial analytics and engineering & design.

Phase 4 (2011-2013): Replace end of life Customer Information System ("CIS") including customer/account services, billing, settlements, and open market systems. The CIS project is currently replacing the legacy CIS systems with a unified platform based primarily on SAP's billing application.

Hydro One also has a number of smaller operational improvement projects underway. These projects focus on productivity and efficiency improvement through further implementation of technology and process improvement.

Based on our observations, the Cornerstone project has provided Hydro One with access to a large set of comprehensive tools that positions them to implement leading industry practices and increase productivity and efficiency in several areas within the company. Hydro One has indicated that it has begun to realize the expected savings from early phases of the Cornerstone project. We expect that Hydro One will need to continue to focus not only on integrating the new tools into business processes across the company but more importantly to fully apply and leverage the tools for improving productivity by tracking and monitoring the effective usage of the tools.

The opportunities that we have identified are incremental to the benefits from Cornerstone project and the additional productivity and efficiency projects underway at Hydro One.

* Source: EB-2012-0031, Exhibit D1, Tab 4, Schedule 3

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Opportunity Analysis
Operations

Operations: Overview

Scope

- Our analysis of structural and organizational opportunities for the Operations function within Hydro One includes activities related to Transmission and Distribution

Hypothesis Development

- There was one relevant external benchmarking report of Hydro One's Operations function. This report reviewed Hydro One's performance in Vegetation Management. Consequently, we developed our remaining hypotheses based on:
  - Our team's experience and knowledge of transmission and distribution leading practices
  - Analysis of organizational structure and company financial reports
  - Review of Hydro One's current business improvement projects
- Eight hypotheses were developed for Hydro One's operations function

Hydro One productivity and efficiency programs

- Phase 1,3 and 4 of the Cornerstone project focused on functions within Operations. These phases aimed to improve the following business processes: work management, asset analytics, business planning, planning/scheduling/dispatch, asset investment planning, geo-spatial analytics, engineering & design, customer/account services, billing and settlements.
- Cornerstone Phase 1 and 3 have been completed while Phase 4 is currently underway

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Operations: Data Inputs

In this phase of the project, KPMG collected financial and organizational data as well as conducted interviews with Hydro One senior staff. The tables below provide a description of the type of data used and the names of individuals KPMG interviewed.

Documents	
Subhead	**Description**
Hydro One 2010-2014 Business Plan	■ Presentation describing Hydro One's strategic objectives, planning assumptions, and risks
Hydro One Detailed Department Budgets	■ Department level costs from 2009 to 2011
Organizational Data	■ List of roles and associated departments/groups within the organization for full-time, part-time and temporary workers within Hydro One
Department Reporting and Dashboards	■ Internal management reporting for the Network Operations organization within Hydro One

Interviews
Name
Peter Gregg, EVP Operations
Nairn McQueen, SVP Engineering and Construction
Wayne Smith, SVP Grid Operations
Myles D'Arcey, SVP Customer Operations
Len McMillan, VP Lines & Forestry
Rick Stevens, VP Asset Management
Mike Penstone, VP Tx Project Development

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Operations: Hypotheses

KPMG Hypotheses	Rationale
1) **Hydro One can reduce Capital costs managed by Engineering and Project Delivery, through increased use of EPC suppliers**	■ Utility industry leading practice involves using engineering, procurement and construction contracts with external suppliers to reduce overall capital costs while still maintaining quality, reliability and safety standards
2) **Hydro One can reduce operating costs by improving Station Maintenance worker productivity**	■ Hydro One provided data that shows an increase in FTEs from 768 (2006) to 1020 (2011) ■ If the work program has not increased by the same magnitude, there may an opportunity to realize efficiency or productivity improvements
3) **Hydro One can reduce Forestry costs by outsourcing vegetation management activities**	■ A 2012 benchmarking report showed that Hydro One has the highest vegetation costs of any of the participating companies and that their use of contractors is significantly lower than the industry average ■ A common practice among utilities is to outsource vegetation management to either local or North American external suppliers.
4) **Hydro One can reduce maintenance costs and extend the life of existing assets through rigorous asset management**	■ A utility leading practice is to apply a rigorous asset management approach to extend the life of existing assets and reduce total equipment costs

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Operations: Hypotheses

KPMG Hypotheses	Rationale
5) **Hydro One can improve frontline crew productivity by using detailed metrics to track productivity performance**	■ A utility industry leading practice is to use detailed productivity reporting to track and monitor frontline worker efficiency ■ Detailed productivity metrics enable management to identify areas of underperformance and focus improvement efforts on specific groups
6) **Hydro One can reduce operating cost by improving Lines Maintenance worker productivity**	■ Hydro One provided data that shows an increase in FTEs from 1958 (2006) to 2319 (2011) ■ If the work program has not increased by the same magnitude, there may an opportunity to realize efficiency or productivity improvements
7) **Hydro One can reduce costs in Engineering and Project Delivery by improving worker productivity**	■ Hydro One provided data that shows an increase in FTEs from 970 (2006) to 1754 (2011) ■ If the work program has not increased by the same magnitude, there may an opportunity to realize efficiency or productivity improvements
8) **Hydro One can reduce forestry costs by using segmented maintenance cycles for different types of vegetation**	■ Hydro One has been benchmarked as the highest cost vegetation management program relative to peers, which implies cycle times might not be optimized ■ Leading practice is to develop vegetation management programs of varying cycles depending on the nature of vegetation and the nature of the treatment as well as greater treatment segmentation

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Operations H1: Hydro One can reduce Capital costs managed by Engineering and Project Delivery through increased use of EPC suppliers

Findings

- In 2011, Hydro One external Engineering, Procurement & Construction (EPC) spend was approximately $83m of a total $838m in Engineering and Project Delivery capital spend (EP&D). As a percent of EP&D capital spend, EPC grew to 10% in 2011 from approximately 3% in 2007.
- Leading practice utilities use EPC suppliers primarily to improve the speed of completion, share project risk and leverage more efficient commercial practices to reduce costs. The EPC model allows for any activity across engineering, procurement or construction to be completed by a third party for portions of, or an entire capital project.
- Savings from EPC suppliers are typically driven by more efficient business processes, procurement processes and project execution
- In a sample study, Hydro One evaluated the savings potential of using EPC contracts by comparing the costs of constructing two similar stations, one competed using internal staff and the other with an EPC supplier. Hydro One observed approximately 20% in savings using an EPC supplier.
- Management believes that more work can be completed through EPC contracts, however restrictions in the collective agreement place limitations on the overall ability to use EPC suppliers
- A review of a comparator provincial utility using EPC contracts showed that EPC use reached upwards of 60% of total capital spend and savings typically take 12-18 months to commence. Further savings were realized when the second round of contracts were negotiated.

Opportunity Assessment

- Hydro One uses EPC contracts today however at a modest level
- Based on our analysis, there is an incremental opportunity to reduce engineering and project delivery costs through increased use of EPC contracts

There is an incremental opportunity for this hypothesis

Source: Management Interviews, department budgets, internal reports, KPMG Analysis

*EPC or “Engineer, Procure, Construct” is the use of full engineering project delivery services

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Operations

Opportunity #1: Increase the use of EPC suppliers in Engineering Projects & Delivery

Opp #1

Hydro One can reduce costs in EP&D by using more EPC contracts than are used currently. This will result in project delivery savings through more efficient commercial processes associated with project execution.

Summary Evidence

- As a percent of EP&D capital spend, EPC grew to 10% in 2011 from approximately 3% in 2007
- Leading practice utilities use EPC contracts for larger projects to improve the speed of completion, share project risk and reduce the need to hire additional resources
- EPC savings are driven from more efficient business processes, procurement processes and project execution relative to internal practices
- Management indicated that a test case with an EPC supplier showed 20% in savings over a similar project performed in-house
- A review of a comparator provincial utility using EPC contracts showed that EPC use reached upwards of 60% of total capital spend

Next Steps

- Perform detailed analysis of capital spend to identify candidate EPC projects
- Develop detailed business case
- Undertake Strategic Sourcing exercise to select EPC suppliers
- Redesign processes to integrate work prepared by EPC suppliers
- Develop training program for internal EPC supplier management

ESTIMATED SAVINGS POTENTIAL*

Savings Methodology

- Savings estimates are based on the Hydro One EPC test case
- EP&D addressable spend of $779m (see table on next slide)
- Base case: Use EPC suppliers for 40% of EP&D spend and achieve 10% cost savings (50% of the savings rate achieved in Hydro One test case) = $23m
- Stretch case: Use EPC suppliers for 60% of EP&D spend and achieve 20% cost savings (100% of savings rate achieved in Hydro One test case) = $77m
- No Regular FTEs will require severance due to the level of non-regular employees and the expected rate of attrition; reductions can be achieved through non-filled retirements
- Commissioning costs ($46.1m) and Hydro One contract optimization savings ($13.1m) have been subtracted from the EP&D addressable spend
- 100% of estimated savings assumed to impact the capital budget

Implementation Complexity

- Portion of savings are dependent on collective agreement changes for engineering related work
- Ensuring work programs are well defined to reduce contract overruns

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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Operations

Opportunity #1: Supporting Analysis

Savings Calculation			
	Base	**Stretch**	**Notes**
2011 EP&D Capital Spend	$838m	$838m	Provided by Hydro One – includes commissioning
Less: Commissioning Costs	($46.1m)	($46.1m)	Provided by Hydro One
Less: Hydro One Expected Contract Optimization Savings	($13.1)	($13.1)	Hydro One expects $39.4m in savings from 2012 to 2014 from basic project contracting. $13.1 is the annual average based on the expected savings.
2011 EP&D Capital Eligible for Savings	$779m	$779m	Calculation of information above
Target EPC Spend	40%	60%	Base/Stretch
Total Target EPC Spend	$312m	$467m	Including EPC spend
2011 EPC Spend	($83m)	($83m)	Provided by Hydro One
Incremental EPC Spend	$229m	$384m	Subtract EPC spend
Expected savings using EPC	10%	20%	Base/Stretch
Expected Annual Savings	**$23m**	**$77m**	

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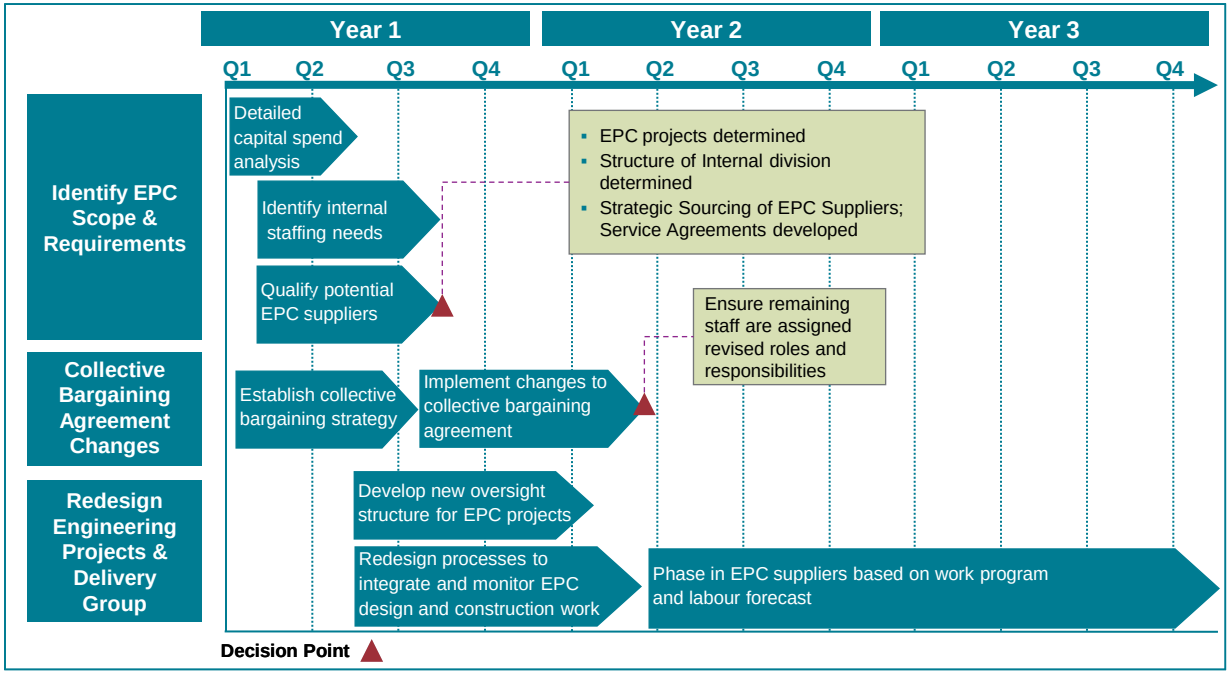
Operations

Opportunity #1: Implementation Plan

Implementation Plan



Opportunity Detail*

Estimated Base	• Annual capital savings of $23m
Estimated Stretch	• Annual capital savings of $77m
Estimated Costs	• One time cost of $0.2m-$0.4m for training internal staff in EPC supplier management

Description

Hydro One already uses EPC contracts for approximately 10% of its EP&D spend. This plan provides a high level timeline to increase this level to 40%-60%. To achieve this reduction, Hydro One will need to perform a detailed review of its EP&D capital spend to identify target projects for EPC suppliers to execute balancing project risks with internal and external capabilities and processes. Hydro One will require a collective bargaining strategy to address union challenges and an evaluation strategy to assess potential suppliers.

Hydro One has the benefit of past experience working with EPC suppliers. This will assist in negotiating beneficial agreements that meet the anticipated savings and to ensure that the quality of work is upheld. Using EPC contracts will also help Hydro One apply leading practices from market competitive EPC suppliers to internally managed projects.

Assumptions and dependencies

- Based on 2011 levels and mix of EP&D capital spending
- Hydro One will use EPC for both new development and sustainment projects
- Quality, reliability and safety are delivered to Hydro One standards
- Savings estimates based on use of experienced EPC suppliers
- EPC supplier has more efficient commercial business processes in place
- Hydro One is able to negotiate changes to collective bargaining agreement
- Hydro One will maintain control of key engineering activities
- Hydro One has relevant engineering, procurement and construction standards documented
- Existing staff can effectively manage suppliers based on past use of EPC vendors
- Hydro One continues standardization of work programs
- Rate payer reaction to outsourcing does not negatively affect Hydro One

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Operations H2: Hydro One can reduce operating costs by improving Station Maintenance worker productivity

Findings

- In 2011, there were 1168 FTEs in maintenance when adjusted for capital and commissioned work. The growth of 282 FTEs since 2006 has been driven by the Smart Meter Network Management function and increased regulatory requirements and oversight.
- Recent management reports indicate that 50% of orders are completed over the target planned labour hours range
- Reports also shows that only 1 out of 94 work centres has achieved the target ideal orders/total orders range
- Management interviews suggest that work planning could be improved as accountability is distributed across many roles and the process to prepare work for front-line workers could be more efficient. Interviews also suggest that this is contributing to an increased level of rework.
- Management has identified work planning and related productivity as next areas of focus for the organization and indicates that labour productivity has improved by 1-3% in recent years
- Station Maintenance has not fully adopted the use of new software tools to assist in work management and coordination. Other groups within Hydro One appear to have realized significant productivity increases from using these tools.

Opportunity Assessment

- Management reports show that Station Maintenance has not fully leveraged the capability of new software tools to assist in work management and coordination
- Based on our analysis, there is an incremental opportunity to reduce operating costs by improving station maintenance productivity

There is an incremental opportunity for this hypothesis

Source: Management Interviews, department budgets, internal reports, KPMG Analysis

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Operations

Opportunity #2: Improve Station Maintenance Worker Productivity

Opp #2

Hydro One can reduce costs in Station Maintenance Services by using better planning and coordination of work. This will allow Hydro One to complete more work with fewer resources than planned.

Summary Evidence

- In 2011, there were 1168 FTEs in station maintenance
- Management indicates that labour productivity improvements of 1-3% have been achieved over the past few years
- Management interviews suggest work planning requires improvement as currently accountability is distributed and the process to prepare work for front-line workers is not efficient
- Management indicated that Station Maintenance has not fully adopted use of new software tools to assist in work management and coordination
- Other groups within Hydro One, such as Provincial Lines maintenance, have realized improved productivity from using these tools

Next Steps

- Conduct detailed analysis to refine targets for process changes and improved monitoring savings
- Gather best practices from internal groups that have used SAP tools to improve reporting and work planning
- Identify SAP productivity reports and other tracking reports that can be used to monitor improvements
- Create improvement targets for group

ESTIMATED SAVINGS POTENTIAL*

Savings Methodology

- Discussion with management identified a range for potential savings through improving station maintenance work productivity
- The base case agreed upon estimate is $5m which represents an incremental 3% productivity improvement on the 2011 work program
- The stretch case agreed upon estimate is $13m which represents an incremental 8% productivity improvement on the 2011 work program
- Management discussion suggests that FTE savings can likely be driven by attrition, a reduction in non-regular workers and reduced overtime hours. Therefore no severance has been included
- Savings are 87% OM&A and 13% Capital, which are divided across Tx and Dx at different rates (57 to 43% and 47 to 53% respectively)

Implementation Complexity

- Encouraging quick adoption of new tools and processes by field staff
- Driving change in culture and approach to how work is managed and completed

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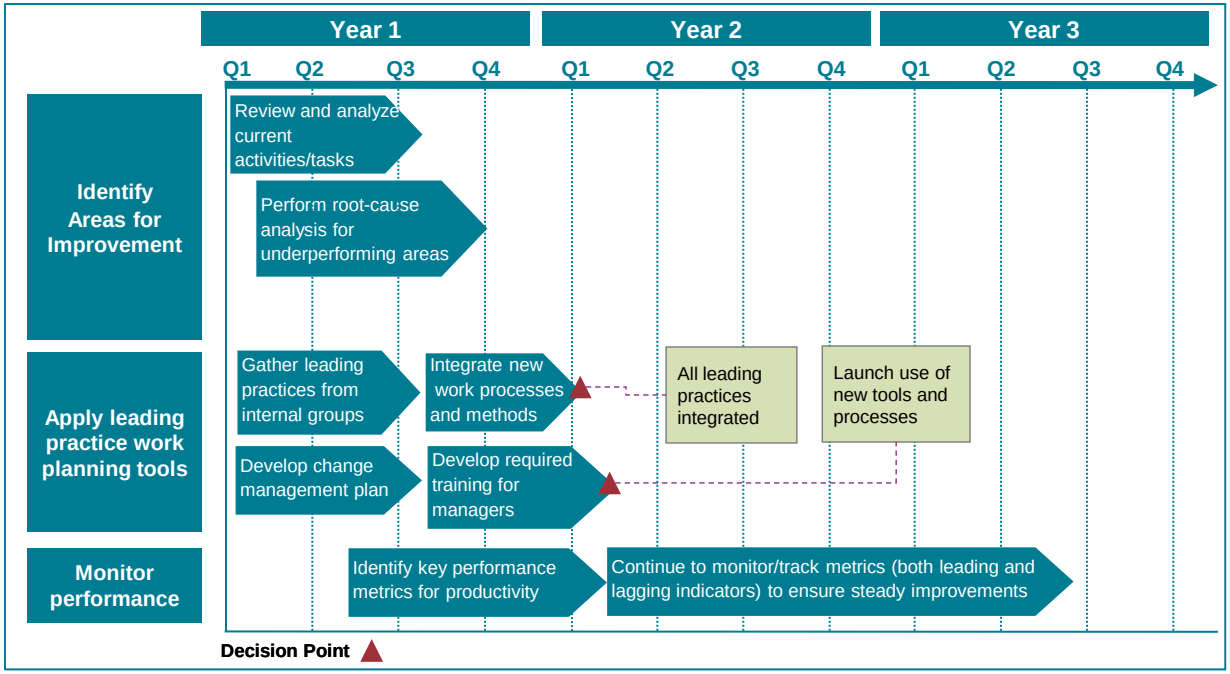
Operations

Opportunity #2: Implementation Plan

Implementation Plan



Opportunity Detail*

Estimated Base	• Annual savings of $5m
Estimated Stretch	• Annual savings of $13m
Estimated Costs	• One-time costs of $0.3m-$0.5m for change management, training, process documentation and project management • One-time severance is not included as management anticipates that savings can be achieved through a reduction in non-regular workers, reduced overtime hours and attrition

Description

The initial effort in improving station maintenance productivity will include identifying the root-causes of underperformance and identifying how leading practices can help improve work productivity. SAP work planning tools will be core to this initiative and be used to reduce the number of handoffs required to push work to the front line/downstream.

Hydro One will need to establish a change management plan in order to ensure a successful transition to the new processes. This will involve developing training material, regular communications and training delivery.

Assumptions and dependencies

- Based on 2011 budget and activity levels
- Leading practices are able to be leveraged across business units
- Hydro One workers will adapt to the change in the proposed time period
- Hydro One is able to effectively monitor productivity and identify leading and lagging indicators
- No incremental investment in technology is required and existing software and platforms can be used
- Any job/role changes can occur without requiring changes to the collective agreement

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Operations H3: Hydro One can reduce Forestry costs by outsourcing vegetation management activities

Findings

- In 2011 there were 1036 Forestry operator FTEs, which has grown at an average annual rate of 3.5% since 2006. Management indicated that due to workforce demographics, some hiring occurred to address the anticipated wave of retirements.
- 2011 vegetation management costs for Hydro One were approximately $145m, this translates into a Transmission cost of approximately $304/hectare and Distribution cost of $1178/km
- Analysis of the 2012 CN Utility Benchmarking report highlights that Hydro One has higher vegetation management costs than other report participants*:
  - Hydro One's cost per tree treated is $86/tree in comparison to the average of $53/tree and the next lowest cost peer company of $73/tree
  - The cost per labour hour for distribution routine maintenance was highest of all utilities at $86/hr
  - Compared to the closest peer in the report in terms of pole miles, Hydro One's cost per pole mile is 57% higher ($2,026 to $1,290) when adjusted for overhead vs. underground miles. This analysis implies a cost difference of approximately $44m based on the total overhead pole miles for Hydro One.
  - Hydro One's cost per customer is $102, which is nearly 2.5 times greater the next lowest cost peer company of $44 and significantly higher than the median cost per customer of $16.22
  - Although Hydro One serves an expansive territory, 69% of lines are accessible by roads or passable terrain, which is equal to the average of the utilities benchmarked in the report*. This implies that the cost disadvantage is not likely a result of more difficult terrain or line locations.
- Of the participating companies, only Hydro One used internal resources in all roles such as Forepersons, Qualified Arborists and Crew Leaders. On average, utilities reported outsourcing between 74 - 85% of these positions. Savings from outsourcing vegetation work is typically generated by lower overall staff costs and more efficient commercial business processes.
- Comparator analysis of a Provincial utility with 2m customers that outsources vegetation management shows Transmission costs of $267/hectare and distribution costs are $520/km, a difference of 14% and 56% respectively. This utility serves a slightly smaller transmission area (75k ha vs. 82k ha) and 40% smaller distribution area (58k km vs. 102k km) with more demanding vegetation characteristics.

Opportunity Assessment

- Hydro One has significantly higher vegetation management costs than peer utilities. The most significant difference between peer companies is the use of outsource suppliers.
- Based on our analysis, there is an incremental opportunity to reduce forestry costs by outsourcing vegetation management

There is an incremental opportunity for this hypothesis

Source: Management Interviews, department budgets, 2012 CN Utility Benchmarking report, KPMG Analysis

*CN Utility Benchmarking 2011-2012, Figure 5, Figure 15, Figure 77, Figure 10, Figure 167

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Operations

Opportunity #3: Outsource Vegetation Management Activities

Opp #3

Hydro One can reduce costs in Forestry by outsourcing Vegetation Management work to third party suppliers.

Summary Evidence

- In 2011 there were 1036 Forestry operator FTEs with an average annual growth rate of 3.5% since 2006
- The 2012 CN Utility Benchmarking report shows that Hydro One has the highest vegetation costs of any of the participating companies. Of the participating companies, Hydro One was the only utility that used solely internal resources in all roles such as Forepersons, Qualified Arborists, Crew Leaders.
- Hydro One's cost per pole mile of $2,026 is 57% is higher than its closest comparable peer in this report of $1,290 when adjusted for overhead vs. underground lines
- Comparator analysis of a Canadian provincial utility with 2m customers that outsources vegetation management shows transmission forestry costs of $267/hectare and distribution forestry costs are $520/km. This represents a difference of 14% and 56% respectively with Hydro One.

Next Steps

- Detailed analysis to estimate stretch savings. This should include a review of: vegetation program (terrain, standards, treatments), workflow and program management, potential suppliers, provincial standards, efficiency gains and labour rates.
- Develop sourcing strategy to determine areas and work type for contract units and develop detailed cost estimates

ESTIMATED SAVINGS POTENTIAL*

BASE	Savings Range	STRETCH
$0m/$15m	⟷	TBD

Savings Methodology

- Base case: Hydro One is able to reduce Transmission and Distribution vegetation management costs by 10% through outsourcing and implement changes to the collective agreement. Target Tx rate of $274/hectare and Dx rate of $1060/km = $15m. If no collective agreement changes can be achieved, then base case is $0m.
- *Stretch case: Further detailed analysis of work methods/processes is required to estimate the Stretch case savings and identify specific changes to improve efficiency/ productivity*
- One time severance costs could reach up to $56.6m. This assumes 5% of Regular FTEs will remain for oversight, emergency and monitoring purposes, 25% will leave through attrition and a severance of two years of salary.
- One time severance costs may be avoided by using a strategic supplier that can absorb existing workforce – similar to Inergi arrangement
- 100% of estimated savings assumed to impact OM&A costs

Implementation Complexity

- Collective agreement issues related to using external contractors
- Ensuring consistent level of service that meets standards set by Hydro One

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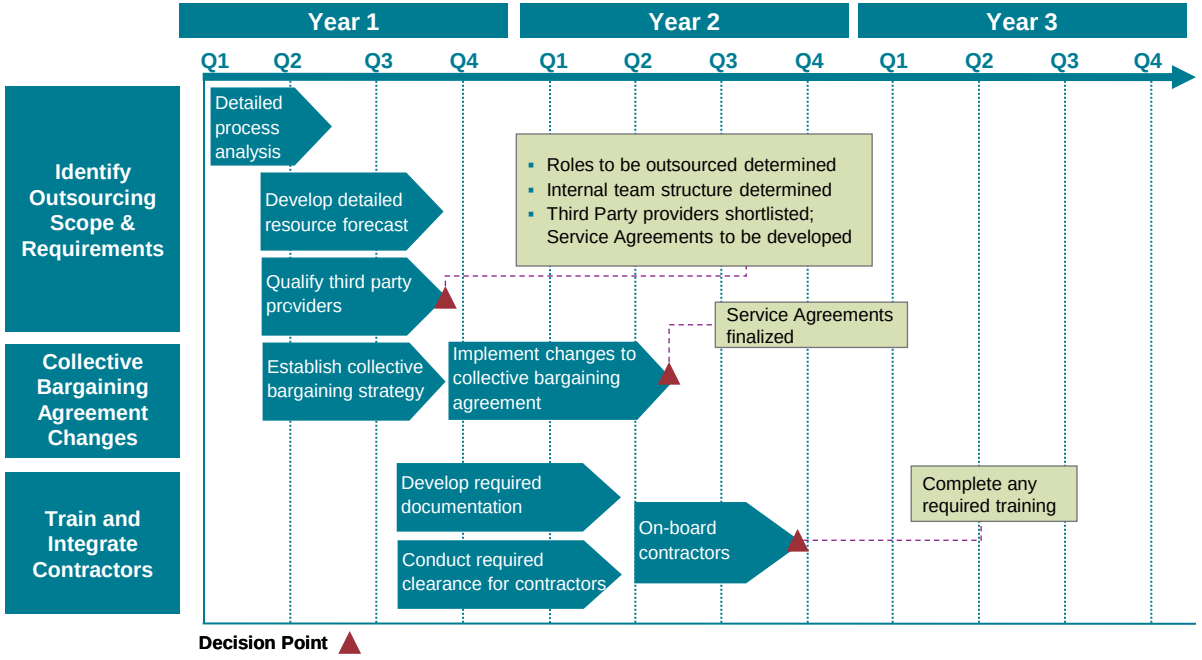
Operations

Opportunity #3: Implementation Plan

Implementation Plan



Opportunity Detail*

Estimated Base	• Annual savings of $0 - $15m
Estimated Stretch	• Requires further analysis
Estimated Costs	• One-time severance cost of $56.6m (assumes 25% natural attrition and 5% of regular staff kept on hand) • Severance assumed to be up to two-years of salary at $86,000 per FTE

Description

This implementation plan involves considerations for developing a detailed organizational plan, evaluating strategic suppliers, conducting collective bargaining negotiations, and transitioning to an outsourcing supplier. An initial scoping exercise must be conducted to confirm the areas in which savings can be expected: labour, efficiency gains and program management.

The initial effort will include developing a sourcing strategy and negotiating beneficial agreements that meet the anticipated savings and to ensure that the quality of work is upheld. Hydro One will require an extensive collective bargaining strategy to address challenges from unions.

Assumptions and dependencies

- Hydro One is able to identify a cost effective outsourcing supplier
- Hydro One is able to negotiate changes to collective bargaining agreement
- Outsourcing supplier has more efficient commercial business processes in place
- Safety and quality managed to Hydro One standards
- Service levels are equal or above what internal Hydro One staff deliver today
- Selected work includes: all vegetation management work activities including trimming, spraying and clearing
- Hydro One maintains an emergency team for vegetation management
- Rate payer reaction to outsourcing does not negatively affect Hydro One

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Operations H4: Hydro One can reduce maintenance costs and extend the life of existing assets through rigorous asset management

Findings

- A utility industry leading practice is to employ a rigorous asset management approach to optimize the useful life of existing assets and new capital investments. This can result in a reduction of operational expenses through reduced maintenance, as well as a deferral of capital investment.
- As part of the Cornerstone project, Hydro One is implementing Asset Analytics (AA) and Asset Investment Planning (AIP) modules, which are asset management systems with the capabilities to help better manage capital investment decisions. These modules show the impact of deferring capital purchases and identify the associated risk such as potential outage or failure risk.
- Enhanced asset management is expected to deliver $15m of savings from 2013 to 2019 and rationalizing the work program is expected to deliver another $6m in savings
- There is evidence that the new asset management applications have helped to improve capital investment portfolio management. According to management, proposed capital spend has been reduced by almost $500m from $3.0b to $2.5b while still remaining within acceptable risk levels through use of the tools.

Opportunity Assessment

- Hydro One has recently implemented robust asset management tools and has adopted a rigorous asset management approach
- Based on our analysis, there is no incremental opportunity to reduce maintenance costs through asset management

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Cornerstone project reports

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Operations H5: Hydro One can improve frontline crew productivity by using detailed metrics to track productivity performance

Findings

- The Cornerstone project involves using SAP reporting and tracking capability to report on productivity internally and across business groups. Management interviews indicated that one of the goals of the implementation of the Cornerstone project was to provide better visibility into frontline productivity through improved reporting.
- Reports are now generated that provide management information on productivity metrics that focus on: unit costs, billable hours, crew-to-crew and region-to-region comparisons
- Productivity reports include budgeted labour hours and costs for each field manager and work centre, comparing these to actual results. This ensures that deviations from the budget can be traced and acted upon.
- Management indicated that they are seeing 1-3% productivity improvement each year. Frontline technology improvements and new systems have been adopted at a pace slower than expected, which has limited the benefits of these systems which are aimed at increasing tool time and reducing travel time for maintenance crews.
- Management interviews indicated that the department leads are using these reports to generate discussion on leading practices and initiatives that can help realize productivity gains

Opportunity Assessment

- Hydro One uses SAP to produce detailed reports to track frontline crew productivity
- Based on our analysis, there is no incremental opportunity to improve frontline crew productivity by using detailed metrics tracking

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, department budgets, internal reports, KPMG Analysis

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Operations H6: Hydro One can reduce operating cost by improving Lines Maintenance worker productivity

Findings

- In 2011, there were 2,319 FTEs in the Provincial lines organization, an average annual growth rate of 3.5% since 2006. Management indicated that due to demographics of the workforce, some hiring of staff is required to address the significant wave of anticipated retirements.
- KPMG analysis shows that over the same time period, work program spend has increased by an average annual growth rate of 11.7% and Lines Maintenance efficiency has increased by 7.7%, in terms of program dollars per FTE
- Management indicated that the increase in efficiency in lines has been the most significant across the organization and attributes this to a concerted focus on the better planning and coordination of work and the efficiency of crews spending more of their day on tools. These improvements were supported by increased work planning capability with SAP.
- Analysis of work plan management reports shows a high level of detail and that group is tracking to their budgeted work units with only a slight variance in their actual performance. The total work units for 2012 was 3% ahead of the budgeted accomplishments for that year.
- Leading practices to improve maintenance worker productivity include using software tools to optimize workforce planning and the improved supervisory decision-making from the use of these tools

Opportunity Assessment

- Use of new tools to drive improved planning and coordination of work has driven increased efficiency within Lines Maintenance
- Based on our analysis, there is no incremental opportunity to reduce operating costs by increasing Lines Maintenance worker productivity

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, department budgets, internal reports, KPMG Analysis

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Operations H7: Hydro One can reduce costs in Engineering and Project Delivery by improving worker productivity

Findings

- In 2011, Hydro One had 1718 FTEs (717 regular and 1001 non-regular) in engineering and project delivery having grown at an average annual rate of 12.7% since 2006
- Management indicates that the increase in headcount has been driven by
    i. increases in the work program over the last few years from large portions of the asset fleet reaching end of life, new builds and managing the increasing complexities as systems are adapted to accommodate distributed generation
    ii. new business activities driving the increase in headcount including the Green Energy Act program such as FIT and MicroFIT programs
    iii. upwards of 100 new graduates have been hired to address the significant wave of retirements expected in technical and engineering groups
- Over the same time period, total projects spend increased by an average of 18% annually ($838m in 2011). The spend per project also increased by an average of 12.8% annually ($261k per project in 2011).
- Analysis shows that this has resulted in an average annual increase in worker productivity of 4.3% in terms of work program spend per FTE. This is a good approximation for the increase in value of work delivered per worker.

Opportunity Assessment

- Overall productivity analysis show that worker productivity has been generally improving
- Based on our analysis, there is no significant incremental opportunity to reduce Engineering and Project Delivery costs by increasing worker productivity

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, department budgets, internal reports, KPMG Analysis

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Operations H8: Hydro One can reduce forestry costs by using segmented maintenance cycles for different types of vegetation

Findings

- Management indicated that the Hydro One forestry program uses a time-based cycle of 4-6 years for transmission vegetation and 6-8 years for distribution vegetation depending on the region. Actual cycles, according to management, are closer to 10 years due to budget constraints.
- Separate vegetation management standards exist for Transmission and Distribution. Hydro One has conducted a detailed preparation of Transmission forestry standards and understand the different segmentations that impact cycle time. Distribution standards are still in draft and are expected to receive final approval in the near future.
- Work is currently conducted and scoped for each segment of the transmission or distribution right of way based on: characteristics of vegetation, conditions, property owners permission and geography (north, south, east, central)
- A utility industry leading practice is to develop vegetation management programs of varying cycles depending on the nature of vegetation and the nature of the treatment as well as greater treatment segmentation, which balances larger standard clearance distances with less frequent treatment cycles and public opposition to wider cut backs
- The CN Utility benchmarking study identifies Hydro One with the lowest minimum clearance for trimming standard which implies a more frequent pruning cycle

Opportunity Assessment

- Hydro One has incorporated segmented vegetation cycles into its maintenance program
- Based on our analysis, there is no incremental opportunity to reduce forestry costs using segmented maintenance cycles

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, 2012 CN Utility Benchmarking report, KPMG Analysis

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Opportunity Analysis

Supply Chain

Supply Chain: Overview

Scope

- Our analysis of structural and organizational opportunities for Supply Chain includes the procurement and inventory functions for all business units
- Our hypotheses focused on business operations and did not review specific capital projects

Hypothesis Development

- There were no relevant external benchmarking reports of Hydro One's Supply Chain function. Consequently, we developed our hypotheses based on:
  - Our team's experience and knowledge of Supply Chain leading practices in the utilities industry and other asset-intensive industries
  - Analysis of organizational structure and company financial reports
  - Review of Hydro One's current business improvement projects
- Three hypotheses were developed for Hydro One's Supply chain function

Hydro One productivity and efficiency programs

- Phase 1 and 3 of the Cornerstone project focused on functions within Supply Chain. These phases aimed to improve and optimize business processes across supply chain and procurement.
- Cornerstone Phase 1 and 3 have been completed

Source: Hydro One Business Transformation Plan, Supply Chain 2013-2015 Business Plan

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Supply Chain: Data Inputs

In this phase of the project, KPMG collected financial and organizational data as well as conducted interviews with Hydro One senior staff. The tables below provide a description of the type of data used and the names of individuals KPMG interviewed.

Documents	
Subhead	**Description**
Hydro One 2010-2014 Business Plan	■ Presentation describing Hydro One's strategic objectives, planning assumptions, and risks
Hydro One Detailed Department Budgets	■ Department level costs from 2009 to 2011
Organizational Data	■ List of roles and associated departments/groups within the organization for full-time, part-time and temporary workers within Hydro One
Supply Chain Department Reporting and Dashboards	■ Internal management reporting providing descriptions and tracking of supply chain targets and actuals

Interviews
Name
George Carlton, VP Supply Chain Services

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Supply Chain: KPMG Hypotheses

KPMG Hypotheses	Rationale
1) **Hydro One can reduce operational costs by developing a shared service organization for procurement**	■ A cross-industry leading practice is to combine procurement activities across business units into one group. This drives lower operational costs by reducing duplicate activities, standardizing processes, and increasing staff utilization. ■ It is common among utility companies to have decentralized procurement departments that are managed and operated within individual business units or individual sites

2) **Hydro One can reduce operating costs by strategically sourcing products and services from suppliers**	■ A cross-industry leading practice is to take a strategic and proactive approach to sourcing materials and services from suppliers. Typically this proactive approach includes:
	  ■ Undertaking portfolio analysis to establish the best strategy for managing product categories
	  ■ Monitoring the market for innovations that will bring additional benefits
	  ■ Managing the suppliers in their categories (both those with contracts and without) to maintain and improve value
	  ■ Working with their internal groups to understand current and future requirements and develop plans to meet them
	  ■ Bringing innovations to their internal groups and encouraging them to consider new and alternative ideas
	  ■ Taking advantage of supplier discounts for early payments

3) **Hydro One can lower operating costs by reducing inventory levels of non-critical items**	■ A power industry leading practice is to reduce or eliminate non-critical inventory, excluding inventory that is no longer manufactured or that is difficult to obtain ■ Reducing or eliminating inventory can reduce labour and facilities costs ■ Historically, utility companies store non-critical inventory in the same fashion as critical inventory

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Supply Chain H1: Hydro One can reduce operational costs by developing a shared service organization for procurement

Findings

- Management interviews indicate that procurement activities are centralized and have been outsourced to Inergi
- A small procurement team resides within Hydro One; this group is responsible for managing the Inergi contract and strategically sourcing IT and consultant services
- IT and consultant services are managed in-house as Inergi is eligible to submit bids for these services
- In 2009, Hydro One hired an external outsourcing consulting company, Equaterra, to review and analyze pricing, service scope, service levels and general terms of the contract with Inergi. Equaterra determined that the outsourced services, including procurement, taken as whole were market competitive.
- Centralizing procurement activity is a cross-industry leading practice that drives lower operational costs by reducing duplicate activities, standardizing processes, and increasing staff utilization

Opportunity Assessment

- Hydro One has centralized and outsourced the majority of its procurement activities
- Based on our analysis, there is no incremental opportunity to centralize procurement activities

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews

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Supply Chain H2: Hydro One can reduce operating costs by strategically sourcing products and services from suppliers

Findings

- Hydro One outsourced strategic sourcing activities to Inergi. Inergi provides strategic sourcing services to cover virtually all of Hydro One's third-party spend. The only exceptions are IT and Consultant Services which are sourced and managed by the central procurement sourcing department, also managed by the Inergi contract.
- Total spend for Hydro One is estimated to be $1.1b, of which $550m is spent on projects and $500m is spent on operations
- Hydro One forecasted 2012 procurement savings of $17.3m, using 2011 costs as a baseline. Procurement tracking reports indicate that year-to-date savings are $23.2m as of October and are projected to be $25.3m by year-end.
- Hydro One actively pursues early payment discounts with vendors that offer this option. Hydro One has established a mini-team that tracks invoices that are eligible for early payment discounts to ensure that early payments discounts are realized. Early discount savings are tracked and reported in the overall Supply Chain value reports that are presented to the Executive Committee and the Board.
- The year-end savings projection represents 2.4% of the total external spend. This target is in-line with Engineering and Construction industry averages of 2 - 3% savings and therefore seem reasonable.
- Hydro One's strategic sourcing plans and reports indicate that they are planning, tracking and monitoring savings for all major categories
- Management indicated that Inergi has clear annual savings targets and monitors achievement against these targets on a monthly and year-to-date basis

Opportunity Assessment

- Hydro One strategically sources products and services, and has achieved targets comparable to industry averages
- Based on our analysis, there is no significant incremental opportunity to further strategically source products and services

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Supply Chain Services -2012 – Value Program Report

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Supply Chain H3: Hydro One can lower operating costs by reducing inventory levels of non-critical items

Findings

- Hydro One's inventory management function is separated into two organizations: (i) Strategic Inventory and (ii) Operational Inventory
- Strategic Inventory: Hydro One has an asset base in excess of $15b and some assets often have lifetimes of more than 40 – 50 years. Strategic inventory includes equipment and components required for these assets where spare parts are no longer available or lead times are excessive or items where there are only one or two suppliers in the world.
- Operational Inventory: This organization supports 80 service centres across Ontario from one central distribution centre in Barrie. Service centres do not hold operational stock but they do have 'consignment stock', which the centres hold for emergencies and urgent repairs.
- The value of operational stock held in the central distribution centre is approximately $39m and there is consignment stock of $26m across the service centres
- Stock turns are approximately 2.5 per year. Management also indicated that if 'stale and slow moving' stock are removed, the stock turns rise to approximately 5 per year. 'Stale and slow moving' stock include items that are typically held for emergency response, for example after storms.
- Compared to total assets and spend, the value of operational inventory is not high, which indicates appropriate inventory management. Management indicated that they are investigating reducing consignment stock levels as some centres located in close proximity are holding similar stock.
- The organization already operates on a centralized 'hub and spoke' model that was introduced in 2005, and which achieved a reduction in storage space and stock holding at the time of introduction

Opportunity Assessment

- Hydro One does not appear to have significant levels of inventory and has an efficient hub and spoke structure in place
- Based on our analysis, there is no significant incremental opportunity to reduce inventory levels

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Inventory Forecast, Collaborative Planning Reports

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Opportunity Analysis

Information Technology (IT)

Information Technology: Overview

Scope

- Our analysis of structural and organizational opportunities for IT includes the corporate IT function and all staff performing IT activities within each business unit
- Our hypotheses focused on business operations and did not review specific capital projects

Hypothesis Development

- There were no relevant external benchmarking reports of Hydro One's IT function. Consequently, we developed our hypotheses based on:
  - Our team's experience and knowledge of IT leading practices in the utilities industry and other asset-intensive industries
  - Analysis of organizational structure and company financial reports
  - Review of Hydro One's current business improvement projects
- Nine hypotheses were developed for Hydro One's IT function

Hydro One productivity and efficiency programs

- The Cornerstone project is an IT project that involves replacing key enterprise application systems as they reach 'end-of-life'
- The Cornerstone project is part of the overall IT strategy to drive productivity and efficiency improvements within IT
- Cornerstone Phase 1,2 and 3 have been completed while Phase 4 is currently underway

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Information Technology: Data Inputs

In this phase of the project, KPMG collected financial and organizational data as well as conducted interviews with Hydro One senior staff. The tables below provide a description of the type of data used and the names of individuals KPMG interviewed.

Documents	
Subhead	**Description**
Hydro One 2010-2014 Business Plan	■ Presentation describing Hydro One's strategic objectives, planning assumptions, and risks
Hydro One Detailed Department Budgets	■ Department level costs from 2009 to 2011
Organizational Data	■ List of roles and associated departments/groups within the organization
IT Department Reports and Dashboard	■ Internal management reports that track IT projects, targets and savings

Interviews
Name
Mike Winters, Chief Information Officer
Brad Bowness, IT Director

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Information Technology: KPMG Hypotheses

KPMG Hypotheses	Rationale
1) **Hydro One can reduce application services costs by offshoring development and maintenance of non-business critical applications**	■ Offshoring of application development and maintenance function is a common practice to reduce costs ■ Cost savings may be achieved by outsourcing or offshoring which take advantage of economies of scale and scope, as well as labour arbitrage
2) **Hydro One can continue to reduce end user computing costs by extending the deployment of Virtual Desktop Infrastructure (VDI)**	■ Using a Virtual Desktop Infrastructure drives lower end user computing costs by replacing the higher cost desktop and laptops with lower cost virtual client devices ■ Thin client devices used in VDI also have a longer refresh cycle than traditional laptops and desktops, which results in additional cost savings
3) **Hydro One can reduce storage costs by replacing the current volume-based cost model to an end-point cost model as part of the outsourcing contract renewal**	■ In a volume-based pricing model based on per gigabyte storage costs, as storage volume grows so does the storage cost ■ Storage costs can be controlled by adopting an end point model where storage costs are determined on a per device basis ■ End-point pricing is an emerging common practice in storage pricing
4) **Hydro One can reduce computing services costs by outsourcing or offshoring the monitoring service for the power systems data centre**	■ Off shoring of data centre monitoring, specifically the overnight shift, is a common practice to reduce costs ■ Cost savings may be achieved by outsourcing or offshoring which take advantage of economies of scale and scope, as well as labour arbitrage

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Information Technology: KPMG Hypotheses

KPMG Hypotheses	Rationale
5) **Hydro One can reduce computing services costs and increase efficiency by rationalizing duplicate or aging applications**	■ Redundant applications that perform similar functions can be removed thereby reducing licensing, maintenance, and support costs ■ A homogenous application portfolio can contribute to fewer interfaces that need to be managed, reduced risk for change related errors, and reduced downtime risk
6) **Hydro One can reduce computing services costs by increasing the ratio of virtualized servers to physical servers**	■ By increasing the ratio of virtualized to physical servers, the number of physical servers that need to be procured and managed can be reduced ■ A reduced server footprint will increase the useful life of the data-centre and therefore defer the cost of potential upgrades and expansion ■ Reduced server footprint can also have a corresponding impact on power, heating and air conditioning consumption
7) **Hydro One can reduce computing services costs by consolidating data centre facilities**	■ Maintaining multiple data centres can drive higher operating costs and data centre upgrade capital costs ■ Consolidating data centres can reduce operating and capital costs and, at the same time, maintain availability and service levels
8) **Hydro One can reduce desktop support costs by expanding self service functionality**	■ Helpdesk costs are variable and dependant on call volumes. Expansion of the self service site functionality can result in a reduction of helpdesk calls. Reduced volumes of helpdesk calls will reduce the demand for helpdesk agents
9) **Hydro One can reduce costs associated with IT business support function by centralizing shadow IT functions that are currently within the lines of business into the central IT function**	■ The existence of a shadow organization performing IT tasks within business units which have been already outsourced can nullify efficiency gains and cost reductions achieved through outsourcing ■ Eliminating duplicate functions can increase the benefits realized from outsourcing

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Information Technology H1: Hydro One can reduce application services costs by offshoring development and maintenance of non-business critical applications

Findings

- Current application development and maintenance costs for non-critical business applications are $8.5m. The development portion (non-business critical) of the function is approximately $1.5m and the maintenance portion costing $7.0m.
- Theses activities are currently outsourced to Inergi, Hydro One's outsource service provider
- Offshoring of application development and maintenance function is a common IT practice to further reduce costs while still maintaining a consistent level of service
- IT management interviews indicated that the maintenance of specific business critical applications costing $3.1m are also candidates for offshoring
- Management indicated that offshoring roles had not been previously considered because Hydro One had been directed to maintain all roles within the Province
- KPMG research shows that cost savings of up to 30% can be achieved by offshoring application development activities. Further cost savings can be achieved by offshoring application maintenance activities.

Opportunity Assessment

- Hydro One currently does not offshore any IT activities
- There is an incremental opportunity to offshore application development and maintenance of non-business critical applications

There is an incremental opportunity for this hypothesis

Source: Management Interviews, KPMG Analysis

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Information Technology

Opportunity #4: Offshoring development and maintenance of non-business critical applications

Opp #4

There may be an opportunity to reduce costs associated with application services by offshoring application development and maintenance functions.

Summary Evidence

- Based on management interviews, a potential cost savings opportunity for application services exists through offshoring of the Application Development and Maintenance (ADM) function for non business critical applications that are currently provided through Inergi
- IT management interviews also revealed that the maintenance of specific business critical applications may also be offshored
- KPMG research indicates that offshoring to a low cost country may provide labour arbitrage savings of up to 30% compared with current ADM costs
- The contract with Inergi allows for a reduction of in-province staff of up to 30%. According to Hydro One, due to this allowance no severance costs would be incurred with this opportunity.

Next Steps

- Work with Government of Ontario to understand appetite for offshoring
- Determine specific scope of services for offshoring
- Identify potential union challenges and concerns
- Develop detailed implementation plan
- Evaluate if processes targeted for offshoring can be streamlined by eliminating redundant and low value added activities

ESTIMATE SAVING POTENTIAL*

BASE	Savings Range	STRETCH
$0k	⟷	$3.5m

Savings Methodology

- Current application maintenance costs targeted for offshoring are $7.0m for non business critical applications and $3.1m for specific business critical applications, with the development costs of non business critical applications accounting for an additional $1.5m
- Base case assumes that offshoring is still not a permitted option for Hydro One
- Stretch case assumes that both maintenance and development are offshored for a 30% cost savings, resulting in $3.5m in annual cost reductions
- There are no severance costs to Hydro One due to a contract provision allowing for a reduction of in-province staff
- One time costs also include transition costs, assumed to be $0.8m-$1.2m

Implementation Complexity

- Collective agreement issues related to using external contractors
- Ensuring proper governance in place to manage and monitor service level agreement with the outsourcing provider

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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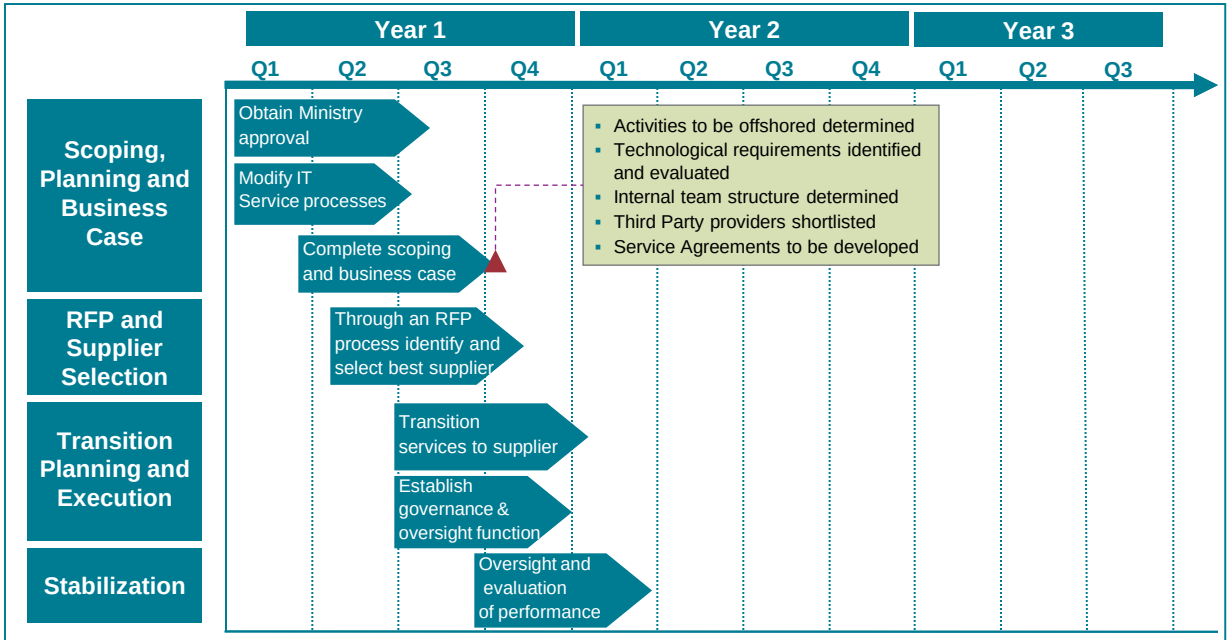
Information Technology

Opportunity #4: Implementation Plan

Implementation Plan



Opportunity Detail*

Estimated Base ($m)	• $0
Estimated Stretch ($m)	• $3.5m
Estimated Costs ($m)	• Implementation Costs: $0.8m - $1.2m, one time for scoping, planning, transition activities • There are no severance costs

Description

- Hydro One should scope, plan and develop a business case for this opportunity, select a supplier through an RFP process, manage transition and execution, and conduct ongoing oversight
- To maximize the cost savings benefits, the Hydro One IT team should seek to implement this change within the current Inergi contract, as opposed to waiting for the next round of contract renewals

Assumptions and dependencies

- Hydro One is permitted to offshore roles
- Successful modification and rationalization of process activities before offshoring
- Significant changes to the collective agreements are not required
- Identification of a cost effective offshoring partner
- Transition does not require large systems changes or investments
- Ratepayer reaction to offshoring of roles does not negatively affect Hydro One

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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Information Technology H2: Hydro One can continue to reduce end user computing costs by extending the deployment of Virtual Desktop Infrastructure

Findings

- Virtual Desktop Infrastructure involves delivering applications housed on a remote server to users instead of installing applications on each user device
  - This approach reduces IT support costs as applications do not need to be installed and managed on each user's computer
  - VDI also reduces hardware spend in two ways. For internal staff, cheaper computers can be purchased as they do not require the same level of computing power/capacity. For external staff, contractors can use their own laptops saving the costs of procuring and deploying hardware.
- Management interviews indicated that Hydro One has begun a Virtual Desktop Infrastructure pilot program
  - In Phase I of the pilot, virtual desktop devices are being deployed to a set of contractors at a cost of $285 per VDI instance compared to the average cost of a laptop at $1,494
  - Phase II of the pilot involves expanding the program to include a set of internal employees. Virtual desktops for staff are estimated at $535 per virtual desktop device versus an average cost of $924 per desktop.
- Analysis indicates that there are approximately 2,600 desktops at Hydro One that could be replaced by VDI

Opportunity Assessment

- Hydro One has not decided whether to pursue deploying VDI
- Based on our analysis, there is an incremental opportunity to extend Virtual Desktop Infrastructure beyond the trial

There is an incremental opportunity for this hypothesis

Source: Management Interviews, KPMG Analysis

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Information Technology

Opportunity #5: Extending the deployment of its Virtual Desktop Infrastructure

Opp #5

There may be an opportunity to reduce costs associated with end user computing by deploying Virtual Desktop Infrastructure.

Summary Evidence

- Using a VDI allows Hydro One to lower end user computing costs by replacing the higher cost employee desktops with lower cost virtual sessions and thin client devices
- Deploying a VDI can also result in further cost savings since thin client devices have a longer refresh cycle than desktops
- Results of VDI deployment pilot project phase one have demonstrated that cost savings can be achieved by replacing the contractor laptops with virtual desktops
- Additionally, IT management indicated that there are no incremental infrastructure costs associated with this opportunity beyond what has already been deployed

Next Steps

- Plan and identify the next VDI deployment group.
- Initiate user communications
- Perform application compatibility and responsiveness testing with the new platform
- Rollout VDI
- Evaluate and resolve issues

ESTIMATED SAVING POTENTIAL*

BASE		STRETCH
$550k	*Savings Range* ⟷	$1.6m

Savings Methodology

- The cost of a VDI instance with and without a thin client are $535 and $285 respectively. The cost for a laptop is $1,494, and cost per desktop is $924
- Base case assumes the implementation of VDI for all Hydro One contractors, (460) which translates in to cost savings of $550k
- Stretch case assumes VDI deployment on a company wide basis (including contractors) replacing 2,600 desktops resulting in a cost savings of $1.6m
- 4 to 6 FTEs at an average salary of $120k would be required for about 1 year to implement this cost savings plan, resulting in an implementation cost of $480k to $720k
- Hydro One indicated that VDI savings are categorized as capital savings

Implementation Complexity

- Application compatibility and responsiveness with the new platform
- Ensuring a dependable connectivity infrastructure to access VDI

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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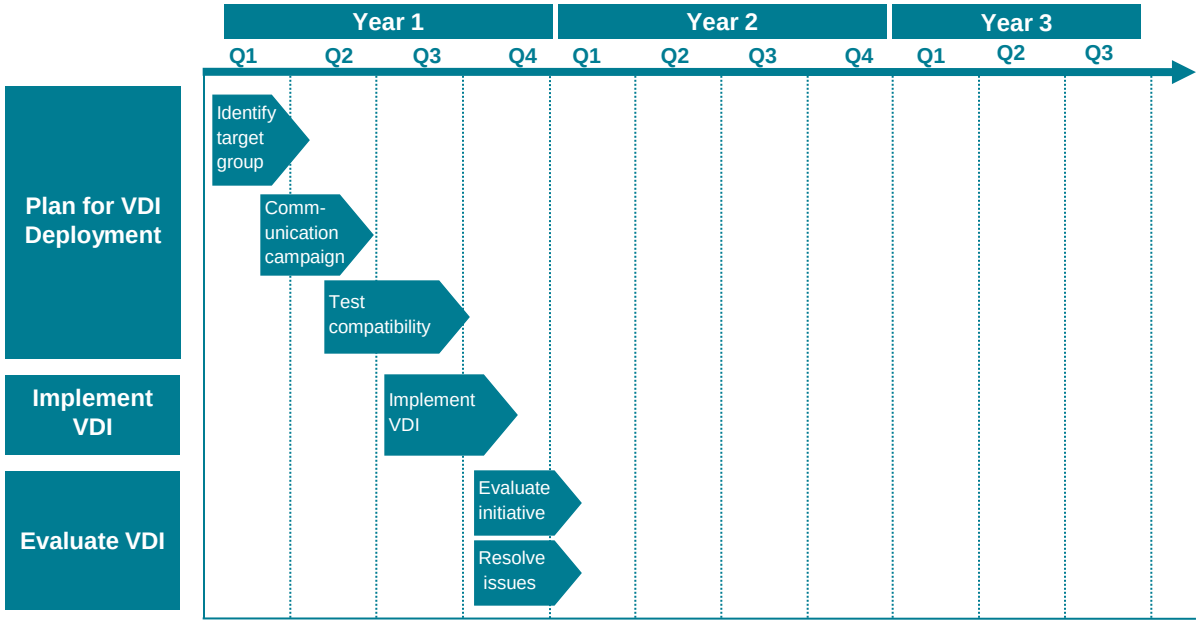
Information Technology

Opportunity #5: Implementation Plan

Implementation Plan



Opportunity Detail*

Estimated Base ($m)	• $550k
Estimated Stretch ($m)	• $1.6m
Estimated Costs ($m)	• Implementation Costs: $480k - $780k, one-time for project implementation staff

Description

- This opportunity addresses a greater scope than the pilot program. To successfully capture this opportunity KPMG suggests that Hydro One identify the next VDI deployment group, start a communication campaign to educate users, perform application compatibility and responsiveness testing with the new platform, rollout VDI, and resolve issues.

Assumptions and dependencies

- Testing of application compatibility and responsiveness
- A dependable connectivity infrastructure is needed to access VDI
- Applications that are used today can be supported or delivered in a VDI environment

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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Information Technology H3: Hydro One can reduce storage costs by replacing the current volume-based cost model to an end-point cost model as part of the outsourcing contract renewal

Findings

- Management interviews indicated that storage related assets have been repatriated from Inergi
- 2013 storage costs are projected to be $3.4m
- Currently, Hydro One outsources the labour component of its storage services as part of the Inergi outsourcing contract and is being charged based on a per gigabyte (GB) basis for storage volume
- Since storage demand is expected to increase at a high rate at Hydro One, a per GB cost model for storage may be suboptimal for the organization
- KPMG experience shows that moving from a per GB based cost model to an end point cost model could reduce the storage cost by up to 25%
- KPMG has found that a potential cost savings opportunity can be captured by changing the cost model for the outsourced storage services from a per GB or TB model to an end-point model, where storage costs are determined on a per device basis

Opportunity Assessment

- There is an incremental opportunity to reduce storage costs by replacing the current cost model

There is an incremental opportunity for this hypothesis

Source: Management Interviews, KPMG Analysis

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Information Technology

Opportunity #6: Replacing the current volume based cost model to an end point cost model as part of the outsourcing contract renewal

Opp #6

There may be an opportunity to reduce costs associated with computing services by adopting an end point cost model for storage instead of the current resource unit cost model based on storage volume.

Summary Evidence

- Currently Hydro One outsources its storage service as part of the Inergi outsourcing contract and is being charged based on the storage volume (per GB)
- The current cost model will result in increased storage costs since storage volume increase results in storage cost increase
- A storage costing model based on the number of end points will help Hydro One control and slow its storage costs

Next Steps

- Plan for negotiations as part of the contract renewal
- Negotiate changing the storage cost model to an end point model
- Transition to the new storage cost model billing

ESTIMATED SAVING POTENTIAL*

Savings Methodology

- The projected cost of storage for 2013 is $3.4m
- KPMG experience has shown that moving from a volume based ($ per GB/TB) cost model to an end point cost model could reduce the storage cost by about 15% to 25%
- Base case assumes savings of 15% resulting in $510k in savings
- Stretch case assumes savings of 25% resulting in $850k in savings
- There are no incremental costs associated with capturing this opportunity

Implementation Complexity

- There is no technology complexity to the implementation because it is not technology related
- Ensuring an appropriate end-point model pricing structure that is beneficial to Hydro One
- Monitoring by Hydro One to ensure that change to cost model and expected savings are being achieved

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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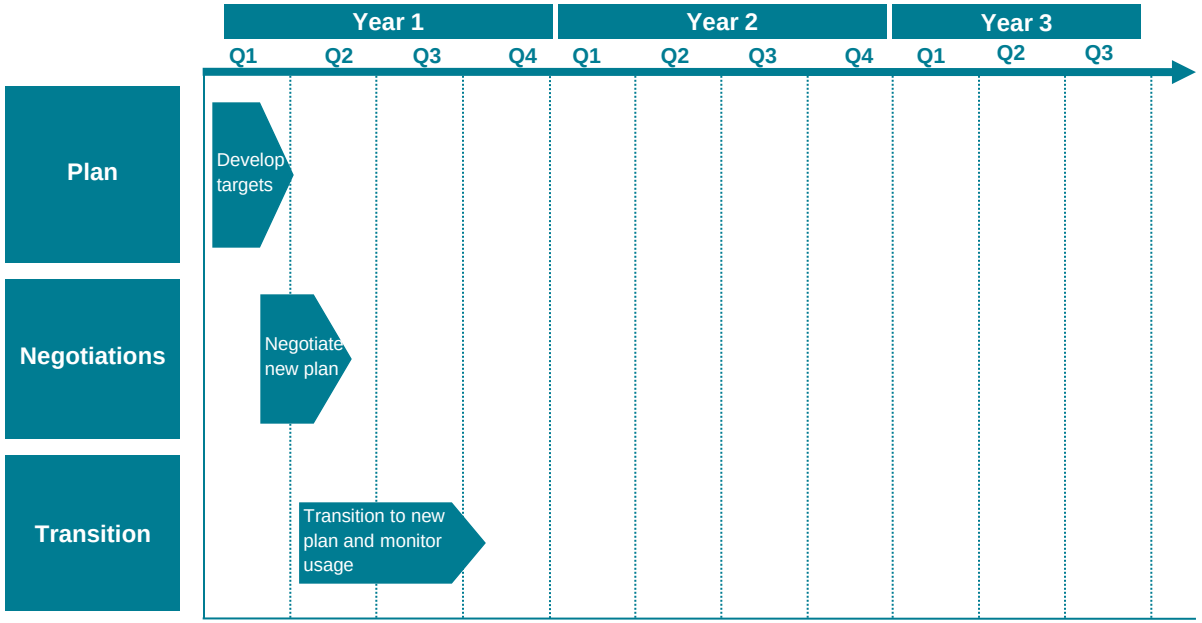
Information Technology

Opportunity #6: Implementation Plan

Implementation Plan



Opportunity Detail*

Estimated Base ($m)	• $510k
Estimated Stretch ($m)	• $850k
Estimated Costs ($m)	• No incremental costs

Description

- To successfully capture this opportunity KPMG recommends that Hydro One plan for negotiations as part of the contract renewal, negotiate changing the storage cost model to an end point model, and transition to the new storage cost model billing
- There are no incremental costs associated with this opportunity as the changes to the storage cost model will be part of the wider IT outsourcing contract renewal negotiations

Assumptions and dependencies

- No transition cost incurred by moving to a new pricing model
- Growth of end-point devices will remain at same or similar rate
- Vendor will support end-point pricing model

*Actual savings achieved for the period covered and the time to achieve these savings will vary from the information presented and the variations may be material

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Information Technology H4: Hydro One can reduce computing services costs by outsourcing or offshoring the monitoring service for the power systems data centre

Findings

- Hydro One currently conducts 24/7 monitoring service of its power systems data centre using 2 FTEs
- Hydro One IT management has investigated the potential from outsourcing this activity. The 2015-2016 business plan includes a 10% reduction in infrastructure monitoring costs as a result of potentially outsourcing of this function. However, Hydro One IT management is hesitant to fully outsource this function because of reliability and security issues.
- Currently, plans for the outsourcing of the night shift portion of the power systems monitoring function are under review
- By only outsourcing the night shift portion of the monitoring service, Hydro One is attempting to balance cost savings opportunities with service reliability and security factors
- There may be little room for additional cost savings from offshoring this activity given the risks and concerns surrounding this opportunity combined with the fact that this activity only requires 2 FTEs

Opportunity Assessment

- Hydro One has identified outsourcing as an option but has also identified several reliability and security concerns
- Based on our analysis, there is no significant incremental opportunity to outsource or offshore power systems data centre monitoring

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews

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Information Technology H5: Hydro One can reduce computing services costs and increase efficiency by rationalizing duplicate or aging applications

Findings

- Management interviews indicated that the Hydro One IT team is currently working on initiatives to rationalize its applications portfolio
- IT reports indicated that in 2008 Hydro One's application portfolio included 1,547 unique applications
- Currently, the Hydro One IT team has been able to reduce the applications portfolio by 25% through rationalization and consolidation resulting in a reduction of applications to 1,155 applications
- Hydro One management has established plans to further reduce the number of applications to 1,086 by 2015 – a 30% decrease from 2008 levels

Opportunity Assessment

- Hydro One is currently undertaking efforts to rationalize its application portfolio
- Based on our analysis, there is no significant incremental opportunity to rationalize duplicate or aging applications

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Hydro One IT Reports

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Information Technology H6: Hydro One can reduce computing services costs by increasing the ratio of virtualized servers to physical servers

Findings

- Hydro One IT reports indicate that Hydro One has a comprehensive server virtualization program in place
- Reports indicate that currently 85% of the Wintel servers in the Power Systems IT are virtualized. The IT team is planning to maintain the same level of virtualization into 2015.
- Additionally, in 2012, 55% of Wintel servers and 95% of Unix servers in Corporate IT were virtualized
- By 2015, the IT team is planning to increase the Wintel virtualization ratio to 70% and maintain the 95% virtualization ratio for Unix servers used in Corporate IT function

Opportunity Assessment

- Hydro One is currently undertaking efforts to rationalize its application portfolio
- Based on our analysis, there is no significant incremental opportunity to rationalize duplicate or aging applications

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Hydro One IT Reports

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Information Technology H7: Hydro One can reduce computing services costs by consolidating data centre facilities

Findings

- IT management indicated that they have already consolidated Hydro One data centers
- IT management stated that there are currently 4 data centers operating at Hydro One. These 4 data centers are comprised of a primary and a backup data center for the corporate and power systems IT functions.
- Management indicated that redundancy between the primary and backup data centers is necessary and there are no further opportunities for data center consolidation, while the additional 2 data centers operate as local server rooms rather than comprehensive data centre facilities

Opportunity Assessment

- Hydro One has undertaken efforts to consolidate its data centres
- Based on our analysis, there is no significant incremental opportunity to consolidate data centre facilities

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Hydro One IT Reports

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Information Technology H8: Hydro One can reduce desktop support costs by expanding self-service functionality

Findings

- A major driver of desktop support costs are the number of help-desk calls from users
- Based on the analysis of information provided by Hydro One IT management, the volume of help desk calls were 58,166 in 2012
- Hydro One IT management team has been able to reduce the help desk calls by 5% compared to 2011 call volume of 61,053
- The reduction in help desk calls was achieved by deploying self-service applications as well as through application rationalization and greater use of off-the-shelf applications
- Hydro One's plan to rationalize more applications is expected to further reduce overall desktop support costs

Opportunity Assessment

- Hydro One has deployed self-service functionality to its desktop user base
- Based on our analysis, there is no significant incremental opportunity to reduce desktop support costs

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Hydro One IT Reports

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Information Technology H9: Hydro One can reduce costs associated with IT business support function by centralizing shadow IT functions that are currently within the lines of business into the central IT function

Findings

- Analysis of the Hydro One IT function organizational structure revealed that there are 2 groups of shadow IT operating within the Hydro One business units
- The first is the Engineering group, which provides AutoCAD and other engineering design services to the lines of business. There are 4-6 FTEs within this group.
- The second is the Geographic Information Systems (GIS) team. According to the IT management, the geographic data collected by the GIS team is critical to the company's future prospects. The current size of the GIS team is 4-6 FTEs and is projected to grow in the future.
- Hydro One IT management interviews revealed that the existence of these IT groups within the business units was intentional and there are no plans to centralize these functions
- Centralization of these functions would not result in efficiency gains or economies of scale as each group is aligned with a specific service/business unit group

Opportunity Assessment

- Although two IT groups exist outside of corporate IT, centralization of these functions would not provide efficiency gains or economies of scale
- Based on our analysis, there is no significant incremental opportunity to reduce shadow IT functions

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Organizational Data

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Opportunity Analysis

Finance

Finance: Overview

Scope

- Our analysis of structural and organizational opportunities for Finance includes the corporate Finance function and all staff performing Finance activities within each business unit
- Our hypotheses focused on business operations and did not review specific capital projects

Hypothesis Development

- There were no relevant external benchmarking reports of Hydro One's Finance function. Consequently, we developed our hypotheses based on:
  - Our team's experience and knowledge of Finance leading practices in the utilities industry and other asset-intensive industries
  - Analysis of organizational structure and company financial reports
  - Review of Hydro One's current business improvement projects
- Seven hypotheses were developed for Hydro One's Finance function

Hydro One productivity and efficiency programs

- Phase 1 and 2 of the Cornerstone project focused on functions within Finance. These phases aimed to improve and optimize business processes across the Finance function in areas including accounts payable and reporting.
- Cornerstone Phase 1 and 2 have been completed

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Finance: Data Inputs

In this phase of the project, KPMG collected financial and organizational data as well as conducted interviews with Hydro One senior staff. The tables below provide a description of the type of data used and the names of individuals KPMG interviewed.

Documents	
Subhead	**Description**
Hydro One 2010-2014 Business Plan	■ Presentation describing Hydro One's strategic objectives, planning assumptions, and risks
Hydro One Detailed Department Budgets	■ Department level costs from 2009 to 2011
Organizational Data	■ List of roles and associated departments/groups within the organization for full-time, part-time and temporary workers within Hydro One
Internal Hydro One Finance Performance Report	■ Internal benchmarking report comparing Hydro One against peer companies with respect to Finance FTEs

Interviews
Name
Sandy Struthers, Chief Financial Officer

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Finance: KPMG Hypotheses

KPMG Hypotheses	Rationale
1) **Hydro One can reduce Finance & Controllership costs by centralizing transactional processes such as accounts payable, accounts receivable, general ledger and financial reporting activities**	■ A cross-industry leading practice is to employ a centralized model to reduce costs and improve the consistency and quality of the transactional processes ■ Since these processes involve a high volume of repeatable activities, they offer the greatest opportunity to take advantage of economies of scale and workload balancing
2) **Hydro One can reduce operating costs by offshoring Finance & Controllership and Assurance related activities**	■ Offshoring allows finance organizations to take advantage of significant labour arbitrage while maintaining the same level of service to their internal clients ■ Offshore delivery of finance processes has reached a level of maturity that provides a wide range of established solutions at very competitive prices
3) **Hydro One can lower Finance & Controllership costs and improve efficiency through greater automation of transactional processes**	■ Leading practice organizations are building financial systems that integrate their ERP system with business intelligence, business performance measurement and financial reporting systems to reduce the amount of manual effort with transactional processes ■ This improves the accuracy and timeliness of financial data and greatly reduces the need for manual intervention
4) **Hydro One can improve Finance & Controllership productivity by reducing the number of reports that are produced and by instituting self-service portals for ad-hoc reporting**	■ Many finance organizations spend a significant amount of time creating and reconciling reports that are not frequently used, contain duplicated information, and do not contain the right type of information needed. Costs can be reduced by eliminating redundant reports, and providing users with appropriate access to a central data source that allows them to analyze without involving finance staff.

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Finance: KPMG Hypotheses

KPMG Hypotheses	Rationale
5) **Hydro One can increase productivity by establishing Finance business partner roles to provide strategic decision level support and program and policy implementation support to business units**	■ This finance leading practice can enable the finance function to be more productive by working more closely with business units in the areas of strategic decision level support, and program and policy implementation
6) **Hydro One can reduce assurance costs by instituting strict guidelines around materiality, rationalizing the approval process for items such as POs, invoices, cash disbursements and expenses**	■ Many finance organizations are able to reduce costs by eliminating non-value added activities, especially those that impact month end financial reporting ■ Many finance teams are staffed to meet peak month-end demand, staff levels can be decreased if these non-value added activities are eliminated
7) **Hydro One can reduce assurance costs by combining all related activities under a single assurance function and by using a risk-based approach**	■ A cross-industry leading practice is to review the entire enterprise risk management framework in order to identify opportunities to streamline the amount of time and effort spent on assurance related activities without exposing the company to any additional risk ■ This often involves consolidating financial control activities with operational reviews to eliminate redundancies

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Finance H1: Hydro One can reduce Finance & Controllership costs by centralizing transactional processes such as accounts payable, accounts receivable, general ledger and financial reporting activities

Findings

- Management interviews indicated that Hydro One has already centralized and outsourced functions in the area of Finance & Controllership
- Activities have been centralized within Hydro One's outsource service provider, Inergi. These activities include general accounting, accounts payable, accounts receivable related process reconciliation/analysis, and data management.
- In 2009, Hydro One hired an external outsourcing consulting company, Equaterra, to review and analyze pricing, service scope, service levels and general terms of the contract with Inergi. Equaterra determined that the outsourced services, including Finance, were market competitive.
- Internally performed tasks such as the production of internal and external financial statements, and government relations have also been centralized
- Management interviews indicated that Hydro One has been enabled to realize productivity and efficiency improvements as a result of economies of scale and scope from centralization, and has increased service quality, and reliability

Opportunity Assessment

- Hydro One has centralized and outsourced its transactional processes
- Based on our analysis, there does not appear to be any significant incremental opportunity associated with centralizing transactional processes

Hydro One has addressed this hypothesis and there appears to be no incremental opportunity

Source: Management Interviews, Equaterra review of Inergi Contract, Payroll/Organizational Data

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Finance H2: Hydro One can reduce operating costs by offshoring Finance & Controllership and Assurance related activities

Findings

- Management interviews indicate that Hydro One has outsourced administrative and transactional tasks primarily in the areas of payroll, accounts payable, accounts receivable, general ledger outputs, inside financial reports and business analysis to Inergi
- Outsourced activities are all delivered within the province of Ontario
- Management indicated that they had previously reviewed the option to offshore outsourced roles, however, Hydro One management was directed to maintain all roles within the Province
- KPMG research has shown that typical offshoring provides a labour arbitrage savings of between 10% to 65% in comparison to current internal labour costs
- Evaluation of the current Inergi contract is out of scope for this study, therefore no incremental opportunity has been estimated. However, Hydro One should investigate the potential savings from allowing its outsource service provider to deliver services offshore.

Opportunity Assessment

- Based on our analysis, there may be an opportunity to offshore outsourced transactional and administrative finance activities
- Analysis of the outsourcing contract is not in scope of this study and therefore we have not evaluated the potential savings from this opportunity. However, Hydro One should investigate the potential benefits from offshoring these activities.

There appears to be a potential opportunity for offshoring roles. However, this opportunity falls under Hydro One's outsourcing contract, which is outside the scope of this study. Hydro One should investigate the potential savings that may be realized with offshore delivery of Finance activities.

Source: Management Interviews, KPMG Analysis

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Finance H3: Hydro One can lower Finance & Controllership costs and improve efficiency through greater automation of transactional processes

Findings

- Management interviews indicate that many routine tasks and administrative activities have been automated through SAP as part of the Cornerstone project. Management indicated that Hydro One has automated process and activities in areas such as business planning, budgeting and forecasting, non-energy billing invoice requisition, Ontario Authority Register (OAR) approvals and capitalization of fixed assets, which has resulted in a reduction of 3 FTEs in Finance.
- Automation of routine tasks is a leading practice that is a key part of an efficient Finance department, as it frees Finance resources to perform other more value added tasks
- Hydro One internal benchmarking indicates that they are operating at lower staff levels than comparable peers. For example, there are 17 FTEs in the Corporate Accounting function despite complex multi-GAAP reporting requirements and the need to support an $8.7b external debt program. These staff levels are driven by a combination of outsourcing of some activities, along with increased automation of key finance processes.
- Management indicated that this automation has led to more straight-through processing of transactions, as well as more streamlined controllership and reporting that requires less manual intervention
- At 83 FTEs, the Finance department at Hydro One is small relative to the number of employees it supports. At approximately 5,700 total FTEs, the Finance span of support at Hydro One is 69 FTEs per Finance FTE. Even taking into account that many transactional activities have been outsourced, the percentage of Finance FTEs to total FTEs (1.45%) is lower than comparable industry peers.

Opportunity Assessment

- Hydro One has increased the level of automation in a large number of finance activities through the Cornerstone project
- Based on our analysis, there is no significant incremental opportunity to increase efficiency through greater automation

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Payroll/Organizational Data, Internal Hydro One Benchmarking Report, KPMG Analysis

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Finance H4: Hydro One can improve Finance & Controllership productivity by reducing the number of reports that are produced and by instituting self-service portals for ad-hoc reporting

Findings

- Management interviews indicate that prior to the implementation of SAP, Finance staff had spent a significant amount of time preparing regular and ad-hoc Finance reports
- Management indicated that the Finance team worked on eliminating a significant number redundant Finance reports in preparation for the implementation of SAP. The eliminated reports included the IFRS reports, and some internal financial reports.
- The implementation of SAP, as part of the Cornerstone project, has provided self service capabilities allowing managers to access Finance and business intelligence reports on an as needed basis
- A leading practice is to institute self-service report portals to free Finance staff to perform value added tasks while at the same time increase management access to information

Opportunity Assessment

- Hydro One has instituted self-service portals for ad-hoc management reporting and has eliminated redundant Finance reports through the Cornerstone project
- Based on our analysis, there does not appear to be any significant incremental opportunity to improve Finance reporting productivity

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews

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Finance H5: Hydro One can increase productivity by establishing Finance business partner roles to provide strategic decision level support and program and policy implementation support to business units

Findings

- Management interviews indicated that staff that had been performing finance activities within business units have been centralized under the corporate Finance organization. This reorganization has reduced redundant tasks performed by business unit Finance employees and standardize processes.
- Management also indicated that a significant volume of transactional, routine, and administrative tasks have been removed from Finance staff activities through outsourcing and automation and this has allowed staff to focus more on strategic and decision support analysis. This has allowed Finance staff to provide business units with more support for decision making, and policy and program implementation.
- Current hiring decisions for Finance related roles are approved by the CFO. This is aimed at preventing the reemergence of a shadow Finance function within the business units.
- Hydro One has 47 Finance FTEs in the areas of Management Accounting & Reporting and Business Planning of the Finance & Controllership function that provide support to the lines of businesses

Opportunity Assessment

- Hydro One has established business partner-like roles to support each business unit
- Based on our analysis, there is no incremental opportunity to increase productivity through establishing business partner roles

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Payroll/Organizational Data

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Finance H6: Hydro One can reduce assurance costs by instituting strict guidelines around materiality, rationalizing the approval process for items such as POs, invoices, cash disbursements and expenses

Findings

- Management interviews indicated that Finance resources are being utilized to review and approve employee travel and board spending and other expenses to ensure compliance with Government of Ontario's Business and Travel Directive
- 3 Finance FTEs are dedicated to the expense approval process that perform corporate credit card audits for all employees at least once a year, review all out of province travel spending, and review employee, management and board expenses
- Ensuring compliance with the government's directive includes: tracking, compliance testing and reporting of expenses, providing expense reports to the Integrity Commissioner and responding to inquiries, posting expenditures on the website and obtaining travel approvals
- Management explained that this allocation of Finance resources for the expense control function is necessary to comply with the Government of Ontario's Business and Travel Directive

Opportunity Assessment

- Hydro One requires the existing complement of staff to ensure compliance with provincial requirements
- Based on our analysis, there is no incremental opportunity to reduce assurance costs

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Payroll/Organizational Data

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Finance H7: Hydro One can reduce assurance costs combining all related activities under a single assurance function and by using a risk-based approach

Findings

- Currently, the Assurance function has 17 FTEs in the Internal Control and Pay Services and the Bill 198 groups. There are approximately 10 FTEs focused on purely Assurance related activities.
- Management indicated that a review of the entire enterprise risk management framework was conducted and had implemented opportunities to streamline the amount of time and effort spent on assurance related activities without exposing the company to any additional risk
- Management indicated that they have rationalized controls through increased reliance on automated controls using the new enterprise wide system as well as entity level control
- Hydro One has also consolidated redundant controls related to Bill 198 which management believes has increased efficiency and effectiveness of the certification required by the securities commissions process

Opportunity Assessment

- Hydro One has combined most assurance related activities under one function and has rationalized controls to improve efficiency and effectiveness
- Based on our analysis, there is no incremental opportunity to combine assurance activities

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity for this hypothesis

Source: Management Interviews, Payroll/Organizational Data

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Opportunity Analysis

Human Resources

Human Resources: Overview

Scope

- Our analysis of structural and organizational opportunities for Human Resources includes the corporate Human Resource function and all staff performing Human Resource activities within each business unit
- Our hypotheses focused on business operations and did not review specific capital projects

Hypothesis Development

- There were no relevant external benchmarking reports of Hydro One's Human Resources function. Consequently, we developed our hypotheses based on:
  - Our team's experience and knowledge of HR leading practices in the utilities industry and other asset-intensive industries
  - Analysis of organizational structure and company financial reports
  - Review of Hydro One's current business improvement projects
- Four hypotheses were developed for Hydro One's Human Resources function

Hydro One productivity and efficiency programs

- Phase 2 of the Cornerstone project focused on functions within Human Resources. These phases aimed to improve and optimize business processes across the Human Resources function.
- Cornerstone Phase 2 has been completed

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Human Resources: Data Inputs

In this phase of the project, KPMG collected financial and organizational data as well as conducted interviews with Hydro One senior staff. The tables below provide a description of the type of data used and the names of individuals KPMG interviewed.

Documents	
Subhead	**Description**
Hydro One 2010-2014 Business Plan	■ Presentation describing Hydro One's strategic objectives, planning assumptions, and risks
Hydro One Detailed Department Budgets	■ Department level costs from 2009 to 2011
Organizational Data	■ List of roles and associated departments/groups within the organization for full-time, part-time and temporary workers within Hydro One
HR Department Reporting	■ Management documents that provide descriptions of HR strategy and departmental responsibilities

Interviews
Name
Judy McKellar, VP Human Resources
Jon Rebick, VP Labour Relations
Keith McDonell, Manager Human Resources

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Human Resources: KPMG Hypotheses

KPMG Hypotheses	Rationale
1) **Hydro One can increase HR efficiency by creating Centers of Excellence for areas of specialized expertise**	■ Leading HR practice is to create Centers of Excellence (COEs) to pool subject matter experts in each HR area resulting in reduced operating costs due to economies of scale and scope and increased quality and consistency of service for internal clients
2) **Hydro One can reduce operating costs by outsourcing or offshoring administrative and routine HR activities**	■ Outsourcing and offshoring administrative and routine activities are leading practices that allow HR organizations to take advantage of labour arbitrage opportunities while maintaining the same level of customer service to internal clients
3) **Hydro One can reduce operating costs by increasing process automation and implementing the use of self service tools by managers and employees**	■ Automating routine tasks and creating interfaces for self service are leading HR practices that can reduce the HR workload and free capacity to perform tasks with higher value added
4) **Hydro One can increase HR productivity by establishing HR business partner roles within business units**	■ This HR leading practice can enable the HR function to be more productive and efficient by working more closely with business units in the areas of strategic decision level support and program and policy implementation

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Human Resources H1: Hydro One can improve HR efficiency by creating Centers of Excellence for areas of specialized expertise

Findings

- Management interviews indicate that Hydro One has centralized some HR functions in COEs. These COEs have been established to perform activities related to Talent Management & Recruiting, Total Rewards, and Employee & Labour Relations.
- Hydro One has established two COEs in the area of Total Rewards
- The first is an HR transactions COE responsible for performing payroll related process reconciliation and analysis, and data management (i.e., new employee account maintenance). This COE has been outsourced to Inergi.
- The second, Compensation, is internal to HR and performs tasks such as pension/benefit administration, compensation policy and oversight, job evaluations and other policies and procedures
- Management interviews indicate that further centralization of additional administrative tasks to achieve economies of scale and reduce error rates are under consideration. For example, Hydro One has recently centralized the production of job offer letters. This has helped to free frontline managers' and supervisors' time to focus on more value added tasks.
- In the area of Labour & Employee Relations, Hydro One has established the HR Support Center COE to improve efficiency. The HR Support Center is the first point of contact for employee grievances and other labour and employee issues. The HR Support Center team performs more administrative and transactional tasks, and will escalate employee issues to the appropriate stakeholders if necessary.
- Management interviews indicate that establishing these COEs has increased managers' and supervisors' time for greater focus on more strategic HR activities

Opportunity Assessment

- Hydro One has established Centres of Excellence for Talent Management & Recruiting, Total Rewards, and Employee & Labour Relations
- Based on our analysis, there is no incremental opportunity to improve HR efficiency through establishing Centres of Excellence

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews, Payroll/Organizational Data

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Human Resources H2: Hydro One can reduce operating costs by outsourcing or offshoring administrative and routine HR activities

Findings

- Hydro One has outsourced administrative and transactional HR tasks related to Total Rewards, and Talent Management & Recruiting
- In the area of Talent Management & Recruitment, Hydro One partnered with Randstad, a third-party recruitment firm, to outsource a portion of the internal recruitment process. Administrative and transactional tasks such as the initial screening and filtering of candidates, conducting reference checks, performing exit interviews are performed by Randstad.
- Transactional processes including payroll process reconciliation and analysis and employee data management have been outsourced to Inergi
- In 2009, Hydro One hired an external outsourcing consulting company, Equaterra, to review and analyze pricing, service scope, service levels and general terms of the contract with Inergi. Equaterra determined that the outsourced services, including HR, taken as whole were market competitive.
- Management interviews indicated that Hydro One had previously evaluated offshoring opportunities, however, they were instructed by the Government of Ontario to maintain all roles within Provincial boundaries
- Evaluation of the current Inergi contract is out of scope for this study, therefore no incremental opportunity has been estimated

Opportunity Assessment

- Based on our analysis, there may be an opportunity to offshore transactional and administrative HR activities
- Analysis of the outsourcing contract is not in scope of this study and therefore we have not evaluated the potential savings from this opportunity. However, Hydro One should investigate the potential benefits from offshoring these activities.

There appears to be a potential opportunity for this hypothesis. However, it is not within the scope of this study to evaluate Hydro One's outsourcing contract. Hydro One should investigate the potential savings associated with offshore delivery of HR activities.

Source: Management Interviews

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Human Resources H3: Hydro One can reduce operating costs by increasing process automation and implementing the use of self-service tools by managers and employees

Findings

- Automation of routine and administrative HR tasks, and implementing self service tools for management and employees are industry leading practices that typically result in increased productivity and efficiency
- Management indicated that SAP has enabled automation of many routine and administrative tasks. Examples include updating of training requirements and identifying and issuing notices to staff of required training programs
- Management indicated that the implementation of SAP included HR self service tools for Hydro One management and employees. Self-service tools included tasks such as:
  - Online training
  - Personal record updating such as address changes
  - Benefits claims transactions
  - Access to Business Intelligence reports for management

Opportunity Assessment

- Hydro One has automated several routine HR activities and instituted self-service tools for managers and employees through the Cornerstone project
- Based on our analysis, there is no incremental opportunity to reduce operating costs through increased automation or the use of self-service tools

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews

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Human Resources H4: Hydro One can increase HR productivity by establishing HR business partner roles within business units

Findings

- Management interviews indicate that nine HR consultants act as business partners
- These consultants are focused on providing advice, facilitating team building, and working with business unit leaders to solve HR-related business issues
- Routine, administrative activities have been centralized and outsourced allowing for greater focus on more strategic issues by the HR consultants

Opportunity Assessment

- Hydro One has HR business partner roles in place
- Based on our analysis, there is no incremental opportunity to increase HR productivity by establishing business partner roles

This hypothesis has been addressed by Hydro One and there appears to be no incremental opportunity

Source: Management Interviews

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Appendix A: Cornerstone Project

Mapping of Cornerstone Phases to Business Function

Cornerstone Phase	Impacted Business Function
Phase 1 *Deploy a modern Enterprise Asset Management solution (SAP)*	■ Operations ■ Supply Chain ■ Finance (A/P)
Phase 2 *Replace PeopleSoft with SAP*	■ Human Resources ■ Payroll ■ Finance
Phase 3 *Expand SAP functionality*	■ Operations ■ Supply Chain
Phase 4 *Replace Customer Information System with SAP billing application*	■ Customer Operations

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cutting through complexity