SECTION H
Tab 7

Applications Enhancements 2006

Cost/Benefit Analysis

Information Systems and Telecommunications
July 2005

Introduction

The Corporation's 2006 Application Enhancements project is described in Section B of Hydro's 2006 Budget Application. In Order No. P. U. 53(2004) – Reasons for Decision, page 57, the Board stated: "However, the Board would expect that prior to any future Capital Budget Application Hydro will have explored any process by which some quantifications of efficiency to be gained through the implementation of new technology, enhancement or otherwise, may possibly be defined to the best extent possible".

This report provides information on the efficiencies expected from specific projects within the Application Enhancements project as requested in Order No. P.U. 53(2004).

Capital Asset Projection Modeling (CAP/M)

Background

The CAP/M software was developed on a platform of assorted analysis tools, deriving information from a warehouse of data that is built on a monthly or yearly basis from the JD Edwards fixed asset and financial information. The resulting information is analyzed to provide long-term depreciation modeling and asset projections.

Information Technology (IT) support time incurred for CAP/M for the last full year (2004) was 175 hours.

Hydro's Rates and Financial Planning group is the primary user of the information produced by CAP/M; however it is also used by the Fixed Asset group as well as Executive Managers.

Scope

This project will investigate a more cost effective and efficient alternative to determining depreciation. Based on the results of the investigation, enhancements will be made to the application set to achieve the efficiencies anticipated.

Cost/Benefit

A financial Net Present Value calculation attached indicates a payback period of 3.2 years. It is expected that productivity savings will result from a more clearly defined reporting requirement and the integration of a new Work Budgets process.

Assumptions Used in the Analysis

- Internal staff will carry out the investigation with the assistance of external resources as required.
- Enhancements will reduce the frequency and complexity of reports required, resulting in productivity savings.
- Software maintenance fees for the current product will cease resulting in a saving of $22,168 per year plus annual increases of 15%.
- IT support will be reduced.
- All investigation and subsequent enhancements will be completed in 2006.
- A discount rate of 8.4% was used.

Enhancements to Capital and Operating Process Applications

Background

Hydro has recently reviewed and adjusted its Work Management process, a process that underlies all aspects of the Corporation's operating and capital work. A central repository for information is necessary to reduce the duplication of data gathering activities in various geographical centers, allow for more efficient workforce planning and proper utilization of the workforce and ensure the coordination of planned equipment outages so that work initiated from various departments within the organization minimizes the impact on customers.

Scope

This project will identify and enhance existing applications currently used, aligning them to the redesigned process model, eliminating duplication of application functionality and introducing functionality necessary to insure the efficiency and effectiveness of the processes. A job plan repository will be established that will be used to provide a basis for streamlined budget preparation, workforce allocation planning, and outage management planning.

Cost/Benefit

A financial Net Present Value calculation attached indicates a payback period of 3.7 years.

The benefits that will be realized from this project are expected to include:

- A net operating benefit will be realized through efficiency savings;
- Hydro managers will be able to see workforce allocation to prioritized work across the corporation in varying levels of detail;
- Better organization of planned equipment outages across various disciplines within the organization will help minimize equipment outages affecting our customers;
- A central repository for job plans will insure that there is a more efficient method of obtaining and developing future job plans reducing the operating and capital budgeting effort.

Assumptions Used in the Analysis

- There are 100,000 work orders created each year to assist in controlling Hydro's work management and it is expected that 80% of these work orders will be directly impacted by changes to the process applications resulting in time saving for work order entry and management.
- A discount rate of 8.4% was used.

IT Infrastructure Management Tool

Background

Hydro maintains a complex portfolio of software and hardware infrastructure including typical IT related infrastructure as well as energy management and telecommunications systems. As changes are introduced it is critical to insure that they do not negatively impact services in terms of unplanned outages or increased support times. The Release Management process is an industry recognized best practice that takes a holistic view of a change to an IT service and ensures that all aspects of a release, both technical and non-technical, are considered together. The process strives to ensure consistency in the release process, improved historical data concerning releases and reduction of risk from unauthorized or illegal software. Tools are currently in place to support the release management process but are not yet implemented. This project will formalize the Release Management process and implement the tools to monitor and report the effectiveness of the process.

Scope

This project will formalize a consistent and manageable Release Management process across all disciplines within IS&T and implement the supporting monitoring and reporting tools to aid in management of releases.

Cost/Benefit

A financial Net Present Value calculation attached indicates a payback period of 3.7 years. Over time there will be a decline in call volumes related to releases and the business will not be negatively impacted by failed or poorly managed releases.

Assumptions Used in the Analysis

- In 2004 there were in excess of 3,000 software incident related calls registered with the Support (Help) Desk.
- It is anticipated that a 10% reduction in the number of these calls can be achieved with a Release Management process.
- On average the resolution time for these types of calls is 1 hour.
- Adequate software is already in the IT portfolio.
- A discount rate of 8.4% was used.

Enterprise Reporting

Background

Hydro currently obtains reporting and query information from a large number of disparate data sources including but not limited to internal sources such as JD Edwards, Capital Asset Projection and Modeling (CAP/M), IT Management Tools, energy management monitoring, and external sources such as external knowledge databases, supplier websites, governing bodies and environmental monitoring agencies and companies.

Within Hydro there are currently large quantities of both operating reports and queries, and individual ad-hoc reports and queries. These reports and queries access information from many different sources and are presented in many different formats. Although there will always be a requirement for ad-hoc reporting, many standard reports can be accessible at all times, produced from a central store of data and be presented through a standard internet web browser. Getting information in this manner will eliminate the need to "run" a report as they will be scheduled, run and placed in a central repository, without human intervention, for access as needed.

Scope

This project will acquire and implement an Enterprise Reporting system with a browser interface. A data warehouse will be developed to support the requirements of the existing reports and deploy these reports in a secure and accessible manner.

Cost/Benefit

A financial Net Present Value calculation attached indicates a payback period of 4.1 years.

Assumptions Used in the Analysis

- The vast majority of reports currently being run access real-time data.
- Increased software licensing and support fees will be offset by a reduction in current report writing software licensing and support costs.
- 1200 reports are run monthly with an average running time of 20 minutes.
- Each report has on average 2 pages for 24,000 pages per year.
- A discount rate of 8.4% was used.

Capital Asset Projection and Modeling (CAP/M) Application Enhancements

	Year	Capital Cost	Operating & Maintenance Cost	Benefits/ Savings (A.)	Cumulative Incremental Cash Flow	Present Worth	Cumulative Present Worth (C.)
0	2006	($75,700)			($75,700)	($69,834)	($69,834)
1	2007			$32,668 (B.)	($45,500)	$27,801	($42,033)
2	2008			$36,203	($14,940)	$28,422	($13,611)
3	2009			$40,241	$15,988	$29,144	$15,534
4	2010			$44,856	$47,292	$29,969	$45,503

Payback period = 3.2 years

Notes:

(A) Benefits/Savings are derived from increased efficiencies resulting in a productivity and IT support saving. This saving is incremented by 2% per annum.

(B.) Software maintenace savings from licensing will be $22,168 incremented by 15% annually and labour savings of $10,500 escalating at 2% annually.

(C.) Discount Rate used for calculating Present Worth is 8.4%

Capital and Operating Processes Applications

	Year	Capital Cost	Operating & Maintenance Cost (C.)	Benefits/ Savings (A.)	Cumulative Incremental Cash Flow	Present Worth	Cumulative Present Worth (B.)
0	2006	($382,700)			($382,700)	($353,044)	($353,044)
1	2007		($20,000)	$160,000	($242,700)	$119,143	($233,901)
2	2008		($20,000)	$163,200	($99,500)	$112,423	($121,478)
3	2009		($20,000)	$166,464	$46,964	$106,075	($15,403)
4	2010		($20,000)	$169,793	$196,757	$100,079	$84,677

Payback period = 3.7 years

Notes:

(A) Benefits/Savings are derived from increased efficiencies resulting in a productivity saving. This saving is incremented by 2% per annum.

(B.) Discount Rate used for calculating Present Worth is 8.4%

(C.) O/M cost calculated as a 15% software license fee + 5% support fee

IT Management Tool

	Year	Capital Cost	Operating & Maintenance Cost	Benefits/ Savings (A.)	Cumulative Incremental Cash Flow	Present Worth	Cumulative Present Worth (B.)
0	2006	($49,500)			($49,500)	($45,664)	($45,664)
1	2007			$18,000	($31,500)	$15,318	($30,346)
2	2008			$18,360	($13,140)	$14,414	($15,932)
3	2009			$18,727	$5,587	$13,563	($2,369)
4	2010			$19,100	$24,687	$12,761	$10,392

Payback period = 3.7 years

Notes:

(A) Benefits/Savings are derived from increased efficiencies resulting in productivity and IT support saving. This saving is incremented by 2% per annum. Additional benefits will accrue from reduced printing costs.

(B.) Discount Rate used for calculating Present Worth is 8.4%

Enterprise Reporting

	Year	Capital Cost	Operating & Maintenance Cost	Benefits/ Savings (A.)	Cumulative Incremental Cash Flow	Present Worth	Cumulative Present Worth (B.)
0	2006	($152,100)			($152,100)	($140,314)	($140,314)
1	2007			$47,750	($104,350)	$40,636	($99,678)
2	2008			$48,500	($55,850)	$38,076	($61,602)
3	2009			$49,277	($6,573)	$35,688	($25,914)
4	2010			$50,064	$43,491	$33,449	$7,535

Payback period = 4.1 years

Notes:

(A) Benefits/Savings are derived from increased efficiencies resulting in a productivity and IT support saving. This saving is incremented by 2% per annum. Additional benefits will accrue from reduced printing costs.

(B.) Discount Rate used for calculating Present Worth is 8.4%