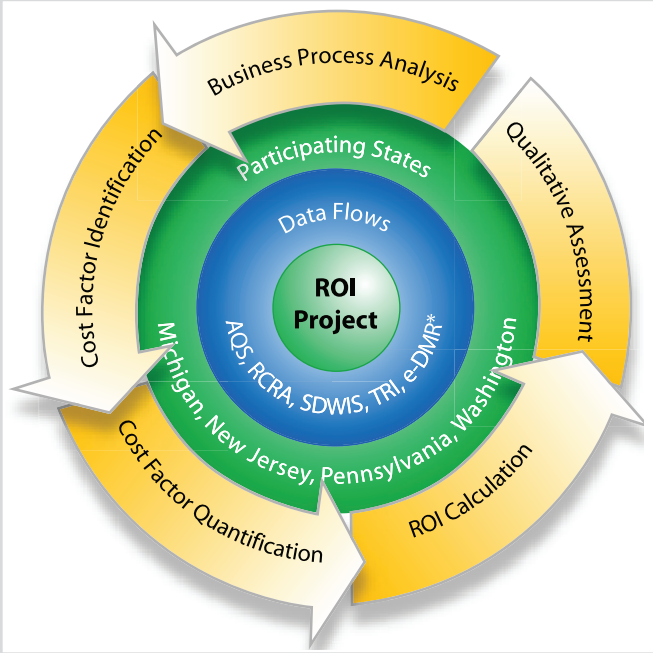
Environmental Information Exchange Network

A Catalyst for Change…

The Return on Investment (ROI) and Business Process Analysis project results indicate that partners investing in Exchange Network technologies can reduce operating costs, streamline business processes, and improve data accuracy and accessibility.

Project Description

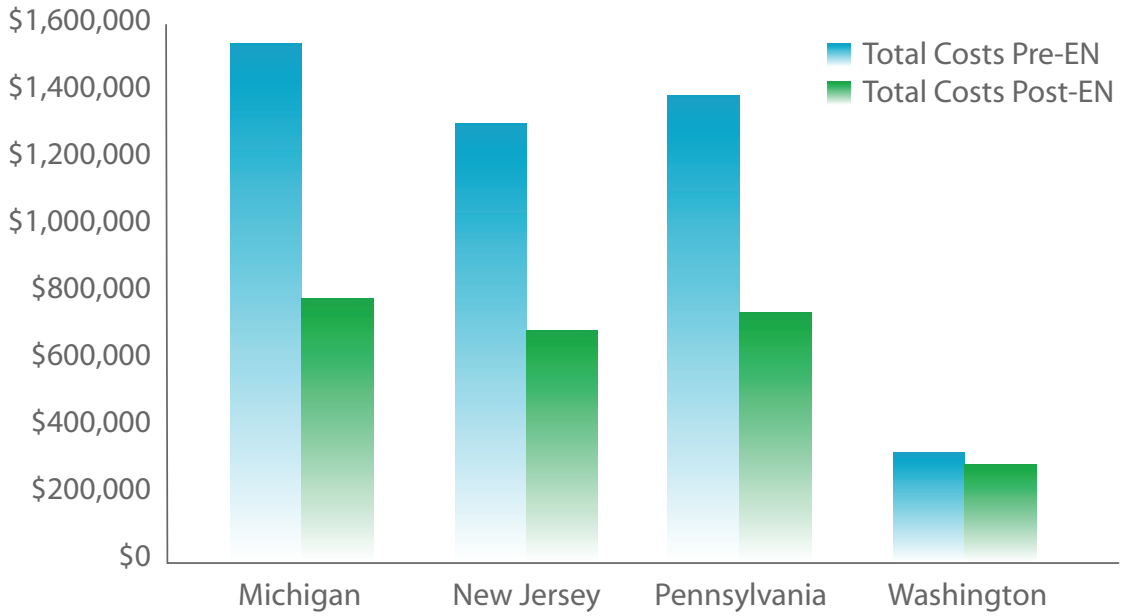
A project team analyzed the impact of using Exchange Network technologies on four states' business processes for exchanging data on air quality, water quality, and hazardous materials. The analysis estimated each agency's cost of doing business before and after the adoption of these technologies. Taking into consideration new development and subsequent maintenance expenses, the project team created a model to calculate the return on each agency's investment (ROI). This reusable tool is customizable and available for use by other organizations that are considering the Exchange Network as a more efficient way of doing business.



*AQS - Air Quality System; RCRA – Resource Conservation and Recovery Act; SDWIS - Safe Drinking Water Information System; TRI – Toxics Release Inventory; e-DMR – Electronic Discharge Monitoring Report

Overall Quantitative Benefits

In most cases, the ROI model predicted a positive return from investing in Exchange Network technologies for a particular data exchange. When the results from all of the data exchanges were considered together, all four state agencies realized a positive financial return. For three of the four agencies, the model predicted annual operational savings of well over $500,000 and payback periods of less than two years.



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(dollars in thousands)	Michigan AQS e-DMR SDWIS TRI	New Jersey AQS RCRA SDWIS	Pennsylvania AQS e-DMR RCRA SDWIS	Washington AQS RCRA TRI
Total Annual Operational Cost - Pre-EN ($/year)	$1,510	$1,267	$1,353	$312
Total Annual Operational Cost - Post-EN ($/year)[1]	$759	$673	$710	$272
Initial Capital Investment ($)	$1,096	$845	$1,002	$139
Post-EN Annual Maintenance Cost ($/yr)	$108	$76	$106	$19
Post-EN Annual State Savings ($/year)[2]	$643	$518	$537	$20
ROI Summary				
Average ROI (5 year basis)[3]	59%	61%	54%	15%
Payback Period (years)	1.7	1.6	1.9	6.9

[1] This value is the total annual operational costs, based on a five year average of the post Exchange Network operational costs.
[2] This value is an average annual savings based on 5-year post Exchange Network scenario
[3] This value uses the average annual savings above

Note: Washington modeled three business processes that delivered more qualitative than quantitative benefits. See the full ROI report for more details.

Each state reported an ability to leverage their initial investment to implement additional exchanges beyond the scope of this study. This allows Network partners to standardize their enterprise operations for either reporting or sharing data across all program areas while still managing to save money.

The results also demonstrated that the implementation of Exchange Network technologies can produce particularly impressive savings when coupled with other business process improvements. For example, process reengineering and e-government technologies can be integrated with the Exchange Network to significantly reduce the cost of regulatory compliance requirements as was experienced with the discharge monitoring reporting flow.

Overall Qualitative Benefits

The states also reported that the Exchange Network delivers far more than just financial returns. Automating the exchange of data allows partners to dramatically improve the quality, timeliness, and availability of environmental information.

Improved Data Accuracy

Manual data entry is replaced by automated exchanges, and typically with on-line, built in data validation. This reduces keying errors and significantly improves data quality.

Broader Data Access

Data can be securely shared with partners from the environmental, health, or security communities. Increased access to better quality information allows policy makers to make better decisions.

More Timely Data

Data becomes available in an electronic format earlier in the business process, so it can be put to use much sooner.

Standardized Data

Each data exchange shares a common, understandable data format, enabling many different partners to share and receive information.

A "Green" Solution

In general, the amount of paper that is required to exchange data is reduced.

Learn More

To obtain a copy of the full report, visit the Exchange Network website at http://www.exchangenetwork.net/benefits. You can also download a copy of the ROI model and estimate your own organization's ROI.