

THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY



LOCATION:
Montreal, Canada

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Business and Related Services

NOMINATING COMPANY:
Capgemini

ORGANIZATION:

Hydro-Quebec

PROJECT NAME:

Project SIC

Summary

After a thorough analysis of its clients' expectations for the next 15 years, Hydro-Québec concluded that it would not be able to meet changing client needs with its current processes and systems, even if significant investments were made.

Further analysis demonstrated that the key to improvement was an integrated solution. HQ decided to change its 200 billing and customer service systems and transform the way it manages its 16 business processes – in one project. The SIC project is the largest ERP implementation in a North American utility and the largest SAP implementation in the world, in terms of depth of change.

The facts:

Exceptional size

- 4,000 employees directly concerned
- 6,000 employees trained
- 3 million customers
- Cost: C\$370 million
- Project team size: 450 people

Exceptional scope

- Clean house: replacing 200 different systems with an integrated SAP solution.
- Full implementation of the complete SAP solution for utilities - including five products in the ramp-up stage at project launch.
- Transformation of all client business processes (16 activities)

Exceptional results

- Fully functional and stable solution on day 1 following go live



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- 0.001% data conversion errors
- 0.005% billing errors
- Timely delivery
- Within budget
- Full ownership by business units

Introductory Overview

Hydro-Québec is a major producer, transmission provider and distributor of electricity. It generates a net income of C\$2.4 billion on revenues of C\$11.4 billion.

Initial situation:

To manage its relationships with 3 million customers and 3 different types of clientele, the customer sales & service organization uses 16 different business processes: covering all work aspects:

- Providing power connection to a customer
- Guaranteeing accurate meter reading
- Meter reading
- Billing
- Cashing in
- Debt collection
- Call Centre
- Customer service
- Sales & marketing
- Etc.

For each of these processes, Hydro-Québec conducts yearly surveys and focus groups among all type of clients to evaluate the quality of its' service offering and draw up a list of new client expectations for the future.

In 1999, Hydro-Québec made a thorough comparison between this list and the capacity of its' business processes and systems to answer those expectations. Here are some examples of customer expectations that the Company was unable to fulfill with the systems and the processes available at the time:

- Enabling all front office representatives (1200 people) to have immediate access to all client and financial data (some clients have more than a thousand accounts) and all the technical data for a given location (including historical data).
- Enabling customer representatives to make commitments concerning the time taken for fulfilling a power request and to monitor work in progress (50,000 requests per year - 175 types of different requests).
- Establishing client credit ratings using past (lifetime) relationships with Hydro-Québec and



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based on all accounts (residential, commercial or business, regardless of the number of accounts).

- . . . Significantly increasing Internet service coverage.
- Keeping two years' billing history for each client in PDF format with instant access for front office representatives.
- Updating all client data and all work done in real time.
- Designating a dedicated representative for each business client and offering "one-stop" services.

General conclusion:

Even with annual investments of between \$30 and \$40 million CDN per year, only 35% of client needs would be met by current systems and processes.

The decision:

Following a comprehensive analysis of all IT solutions available (including continued development of in-house systems), Hydro-Québec concluded that a fully integrated ERP solution was the only possible solution given the varied and complex business requirements.

The customer service management team had to make a difficult decision. Many considerations had to be taken into account:

- Hydro-Québec has 200 systems developed and maintained internally. Implementing an integrated solution would mean getting rid of all these systems in one project – which is both an engineering challenge and a radical change in culture.
- The project seemed risky. During the late 90's, numerous projects of similar scale had to be abandoned or had experienced significant cost and time overruns in other organizations.
- Customer satisfaction was at a very good level (between 75% and 90%, depending on the type of customer). Since these results were being achieved using many manual procedures, there was no real emergency.
- Finally, 6,000 employees would need to be trained and, although their customer service experience and skills would be intact, their expertise concerning the new processes, tools and systems would be close to zero. Since these employees will be subject to a learning curve, customer service quality could fall significantly following implementation.

Hydro-Québec has a culture and history of innovation and ambitious projects as far as its core activities are concerned (dams, power stations and power lines). After careful analysis, the management team decided to apply the same optimism, enthusiasm and project management skills to its' information technologies by:

1. Identifying the SIC (Client Information Systems) project as a leverage for attaining strategic development goals.
2. Identifying a solution that would support 85% of its business processes
3. Transforming and modernizing all business processes to align them with recognized utility best practices, supported by an ERP solution

The solution:



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1) Implement the full SAP suite of functionalities for Utility industries and fully integrate all processes.

- ISU – ramp up

Specific solutions for billing, service requests, meter reading, etc.

- CRM – ramp up

Customer interaction centre and sales solution

- Netweaver – ramp up

- Portal

- Business Intelligence

- Learning Solution

- Knowledge Management

2) Integrate four complementary projects with the SAP solution

- New electronic portable meter reading device (for 600 employees)

- New printing and mass mailing solution and equipment (1.5 million bill per month)

- Implementing multi-channel capabilities for customers (phone, fax, web)

- Scanning all correspondence

3) Realign all 16 business processes accordingly

The 4-year project will cost \$370 million, involve a team of 450 (mostly Hydro-Québec employees complemented by consultants from around the world), and require more than 25,000 days of training for 6,000 employees.

After much hesitation from many high-ranking managers of the Company, many presentations to the Board of Directors and finally, to the Québec Energy Board (the Regulator) a complete business case, reviewed by Gartner (the most comprehensive ever for a IT project), was finally approved in December 2002!

Benefits

To underline the benefits of the solution for the customer and the company, let us walk through a customer request from beginning to end. Benefits of the new solutions are underlined.

The customer service representative arrives at work, starts his computer, goes to the portal and enters his personal code. The single sign on system automatically identifies all the applications he needs and gives him access.

A customer calls to make a request for a power connection (he could have done it himself via the Internet).

The representative uses an interactive script to identify the customer's request.

Since this is a request for a power connection, he opens the automated form to complete the licence application, which automatically generates a detailed description of the required tasks.



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Once the tasks have been generated, a workflow is triggered. First, the Credit system checks whether a deposit request should be made. It turns out to be so. A mail is sent out automatically the same day from the new centralized printing centre.

The customer's designated representative is automatically advised of the mail sent to the customer. As soon as the customer makes the payment, the required chain of actions is triggered.

In this case, a meter must be installed. The work load system issues a work item. The technician in question enters the work item in his work basket and proceeds with the installation.

The technician selects the required meter from the new computerized inventory and checks the meter's history using a bar code system. Once the meter is installed, he enters the data and fills in his time sheet, which ends the operation and triggers the next step: the file is transmitted immediately and the inventory is updated automatically.

The network team proceeds with the connection. In this particular case, a connection to the overhead network is required. As for the technician, all the steps of the installation team's work are entered and when the time is inputted, all subsequent steps are triggered.

If the customer calls in the meantime to find out the status of his request, the representative can tell him exactly what has been done and the time required for the remaining tasks. When the work is completed, the team records the service start date. A signal is sent automatically to the customer service department to start the billing process. The time savings compared with the old system amount to between 50% and 60% depending on the type of work.

Several months later, an automatic consumption data task performed by the new account management tool shows that the customer's rate can be optimized. A work item is created for the representative to call the customer.

During the call, the customer mentions that he does not understand the changes in consumption between January and April. The representative opens the customer's invoices in PDF format to discuss the billing details.

The customer is concerned about the consumption calculations. The representative opens the billing description tool. The customer wants the account to be combined with another. The representative opens the summarized contracts tool, analyses the situation and combines the contracts in the customer's contract account.

The customer is not satisfied with the explanations given. He feels that he has paid too much and has not been properly informed. He calls 3 times and each call is listed in the contact list. He sends a complaint letter, which is scanned in the centralized scanning centre and is automatically filed by the bar code system.

The representative receives the scanned letter in his work basket and replies by selecting one of the 26 standard letters. The customer's complaints' file is virtual and may be sent immediately to various persons-in-charge without any transmission errors. Finally, Hydro-Québec finds that the customer is right. An invoice adjustment is sent the same day and the customer's next invoice is credited.

From a high level point of view:

1. This is the most advanced integrated business solution in the world for a public utility



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2.The economies of scale as well as the gains in maintenance and investments amount to \$20 million per year (compared with the investments and operating costs of our previous systems).

3.Although complex, the entire system is operated by our workforce. The benefits (both service quality improvement and financial gains) have been achieved without compromising employee motivation and job security.

The Importance of Technology

For Hydro-Québec, integration is the key to customer service and technology is the key to integration.

The focus on this new technology has shifted the employee's focus from performing specific tasks using individual systems to innovative high-performance systems and global solutions.

Although not all the components of this global solution meets Hydro-Québec's needs with the same level of precision as some individual components of the legacy systems , they provide real-time access to information, which is the main ingredient for meeting today's customer expectations.

Originality

Technical aspects

This is an exceptional project in terms of size and complexity.

However, our biggest challenge was not originality. On the contrary, to guarantee the integrated solution's future evolution, we had to limit the number of original developments and maintain the solution's basic mechanisms. This was a striking contrast with our previous approach of developing new applications each time we faced a new need.

The guideline was to conform as much as possible to the solution and not the contrary.

Management aspects

Another area in which we could not be entirely original was the management of "soft issues."

We knew from the beginning that a major part of the risk would arise from issues such as employee resistance, training, union opposition, lack of support from higher management in the long run, divergences on orientation or priorities between the project team and process management, etc.

In these areas, we found out that discipline, not innovation, is the key. There is no such thing as a 65% success in managing risk or a 70% success in understanding the impact of change on a company's strategic plan. We therefore decided to put together a very strict set of principles and measures that all external observers have found to be very original. However, to us they are not original, they are simply the best practices that everyone knows.

We relied on our partnership with SAP to find new capabilities while remaining within the limits of the integrated solution. At various times, we have:

- Pushed the SAP solution to its limit

- oExample: We developed a completely virtual and centralized workload management (SAP



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decided to use our solution for further development of this aspect).

- Asked SAP to develop and adapt its solution to meet our needs

o Example: For the meter reading process, SAP developed solutions to cope with our specific problems

- Used SAP logic and tools to develop our own solution

o Example: As SAP lacks an outage solution, we developed our own within CRM.

Success

The solution's technical functions and data quality

All aspects of the solution worked very well on the very first day or "go live".

- No performance problems

- No interface problems

o All modules connected perfectly ISU - R3 – CRM

o All three generations of SAP solutions were perfectly synchronised

o Remote function call devices and application link enabling performed exceptionally well

- Exceptional data quality (0.001% errors).

• After a month and a half, less than 200 anomalies were registered - all minor problems from a technical point of view.

Change management

In the first weeks after the go live, performance levels declined sharply. Only a few employees were comfortable using the most complex functionalities. Supplementary training was put together quickly and employees were asked to work together to help each other.

However, even during this time, managers did not encounter any sort of dissatisfaction or despair.

After a few weeks, most employees were saying they did not want to go back to the old systems. For the employees, the perceived benefits were:

- A greater number of tools for answering client requests and therefore, a feeling of empowerment

- Greater control over tasks

- Better definition of responsibilities

Training

15,000 days of training were provided for deliveries 1 and 2. We are getting ready to add another 24,000 days of training for Delivery 3. All training was designed on an E-learning platform and is therefore entirely virtual and divisible into modules that can be used together or separately.



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The sheer scale of the training effort was a success in itself and Hydro-Québec employees have proven that their learning capabilities are great..

Some of them have been working with the same systems for 25 years and some managers had doubts about the capacity or willingness to learn a new system, with new training tools. Yet, we have not received a single complaint from an employee or from a union representative indicating that the project was too ambitious.

Customer reactions

It is too soon to tell if customers will quickly notice the improvement in service quality. However, we know that we have passed the first crucial test – transition.

Customers have no leeway concerning changes to billing and other financial issues,. Having experienced this many times in the past, we were expecting the worst, given the scale of changes.

For Delivery 2, less than 1,500 customers (out of 150,000 in total) were affected by errors and anomalies. All errors were corrected within 3 days. When informed about the error and the correction, most customers were not aware of any problem. Adjustments were always made to the customer's benefit.

Billing anomalies were about 0.005% higher than normal in the 2 months following implementation. In all, we received less than 100 official complaints.

Difficulty

We had no way of evaluating precisely the organization's learning curve. All we new is that it takes an organization from 6 to 8 months to reach the performance levels achieved prior to implementation.

However, the level of uncertainty and stress related to the decline in operational performance was higher than expected. In terms of change management, we had invested efforts in the transition to make sure people understood and welcomed the change. It was an important issue but managing the effects of a longer learning curve appears to be more complex.

In an industry and a company that hates risk taking, we have found that there is a limit to the level of preparation that can be achieved. The type of situations following implementation (higher customer calls vs answering capacity) cannot be alleviated by more communication to the client or the employee. They simply have to be dealt with as they arise.

The level of investment (time) necessary to ensure buy in by various company executives vs the number of changes at those levels over a span of 4 years was tremendous (e.g.: 3 chairmen of the board, 2 CEOs, 2 group Presidents and 3 Vice-Presidents Customer Sales and service). Stability of the project team was the key.