Successful Outsourcing of Data Warehouse Support

Focus IT management on the big picture, improve business value and reduce the cost of data

Data warehouses can help organizations make intelligent decisions to advance their business goals. Evolving the data warehouse to meet changing business demands requires agility and expertise. As a result, many organizations elect to outsource this support function to experienced partners. This paper draws on CGI’s client experience to describe why outsourcing is a strong option. It also discusses how to make effective use of managed services for data warehouse support and maintenance, with case studies and key success factors from leading organizations.

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Since the concept of data warehousing appeared in the late 80s, the focus has shifted from, “Do we need one?” to “How do we build it?” to “How do we manage and enhance it to meet changing needs?” The scale and complexity of a data warehouse puts its support model into a class by itself. As a result, many enterprises are outsourcing the development and operations to IT partners that have the necessary expertise, technical sophistication, and broad experience across different organizations.

**COMMON DRIVERS, UNIQUE DEMANDS**
There are a number of ways in which data warehouse support, and the reasons for choosing outsourcing as a delivery model, are similar to traditional application support. These include the potential to reduce costs, gain greater control over service levels, and enable IT management and internal subject matter experts to focus on matters of greater strategic importance.

But there also are unique aspects to the data warehouse support model. Understanding these distinctions can spell the difference between success and failure in data warehouse support outsourcing relationships. Key points where data warehousing is different include:

- **Greater scale and complexity.** A data warehouse tends to serve a wider audience than a standard operational system, such as customer relationship management, enterprise resource planning or billing applications, resulting in the need to address requirements for cross-domain data integration. As a result, more attention to governance is required, along with acceptable standardization for data, processes, security, business intelligence tools and architecture.

- **Specialized domain knowledge.** Such a complex environment requires a solid understanding of both the technical domain and the business reality behind the data. It demands a keen understanding of how the data warehouse was assembled, the resulting structure, and the business-semantic interpretation of the stored data.

- **Unique system development lifecycle.** Just as with building a data warehouse, supporting one takes a specialized lifecycle that is especially reliant on collaboration between business and technical teams.

- **Faster pace of change.** User demands for data warehouses grow and change more rapidly than with typical applications. The more data users get, the more they do with it. The more they do with it, the more they want. Continuous change and improvement is an imperative.

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• **No clear lines between maintenance and enhancements.** The three basic categories of application support are: routine maintenance, enhancements and break/fix. For a data warehouse, the distinction between what is maintenance and what is a small enhancement can be unclear. An example is when changes to calculations are submitted as break-fix because the resulting reports did not meet user requirements, when in fact the requirements have changed or were never completely specified.

• **Longer issue resolution times.** Data warehousing issues tend to be more transformational. Even small changes to code can take significant time to debug and require a keen understanding of the impacts to the rest of the data in addition to the reporting or analytic objects that use that data.

**KEYS TO SUCCESS**

Since the data warehouse environment demands highly skilled support, in-house efforts to establish, maintain and enhance a core team with the necessary skills can monopolize the time of critical resources.

To address this problem, many leading enterprises have assigned the strategic “what and why” of their data warehouse management to internal resources, while relying on trusted IT partners to manage the day-to-day operations. This enables internal subject matter and technical experts to focus on areas of greater strategic importance, rather than being absorbed by operational concerns.

Managed services partners are able to bring the economies of scale and broad delivery capabilities needed to increase operational efficiencies and reduce support costs, by having the right work done by the right resources in the right location. With multiple engagements from which to draw best practices, experienced managed services providers also bring effective governance structures and standardized, streamlined processes.

Additionally, by focusing on continuous improvement and innovation, these managed services partners are able to help organizations create and implement roadmaps for change that align with business strategy. They support the roadmap with business knowledge and cross-industry experience that internal support functions typically do not have to as great a degree.

Based on CGI’s experiences across organizations and industries, a successful managed services arrangement for data warehouse support requires several special considerations. As described further in the following table, these factors include: alignment between business and IT, support model structure, knowledge requirements for support resources, expectation setting and quality management.
**Key Success Factors for Data Warehouse Support Outsourcing**

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<tr>
<th>Factor</th>
<th>Description</th>
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<tbody>
<tr>
<td>Strong connections between architects and business analysts</td>
<td>Data warehouses cannot be built or supported in silos—they require strong partnerships between people who know the business, people who know the data and people who know the architecture. A variety of communications channels should be used to help build solid relationships around data governance (content), program governance (applications) and architecture governance.</td>
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<td>Business alignment</td>
<td>Managed services providers must understand client business goals and connect those goals to the delivery of data warehouse enhancements and innovation. The support organization and business users should work collaboratively to develop roadmaps that drive business value.</td>
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<td>Layered support model</td>
<td>The support organization should be well equipped to serve both technical and business users. This requires a layered support model of people with strong knowledge of data content and how it is organized and accessed. The support organization should also understand the business problems from both sides to properly bridge the gap between business and technology.</td>
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<td>Clear expectations for problem resolution</td>
<td>Different types of problems and how to resolve them must be understood clearly. This means defining routine maintenance vs enhancement vs break/fix, and setting clear expectations for each object with explicit guidelines. For example, certain fixes may need an architect to evaluate what happened, a business analyst to determine why, and the development team to fix it.</td>
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<td>Domain expertise</td>
<td>Data warehouse support projects require specialized knowledge and expertise to keep them evolving to meet changing needs. A managed services partner must have a solid understanding of the client’s business issues, technical environment and relevant technology. In addition, the partner must have a good understanding of the client’s industry and advancements occurring in that industry.</td>
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<td>Rigorous execution</td>
<td>Rigorous standards and solid governance frameworks must be deployed to achieve high-quality deliverables and “always on” performance. Good design patterns and sound practices for handling and versioning data are also critical.</td>
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<tr>
<td>Contracting for innovation</td>
<td>A managed services partner should advance the data warehouse through innovation in technology, content and organization (data model), and at the same time, client expectations should be understood clearly to maximize success.</td>
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WHAT DOES SUCCESS LOOK LIKE?
Once data warehouse support has transitioned fully to a managed services partner, the client organization should realize ongoing benefits for both business and IT. These include:

• **Less dependency on key individuals.** The support organization will have levels of expertise appropriate for each role, plus training/mentoring and knowledge management practices to create more experts over time. This allows key subject matter experts from the organization to focus their attention on other priorities beyond support.

• **Easier, faster and better reporting.** Ideally, a managed services relationship will enable greater self-service in accessing data and business intelligence analytics.

• **Highly responsive support.** There should be faster turn-around from the support organization when changes are needed.

• **Faster and higher throughput.** As warehouses grow and become more complex, performance can get bogged down. A managed services partner should resolve performance issues to increase throughput and proactively make enhancement recommendations as data volumes increase through granular growth.

• **Satisfied business users.** The true value of an enterprise data warehouse is reflected in the ability of business users to get the information they need (ad hoc or analytical) without delay or frustration.

The following case studies of two leading organizations describe their real-life successes in data warehouse support outsourcing, along with their key success factors.
CASE STUDIES IN DATA WAREHOUSE SUPPORT OUTSOURCING

Global financial services firm improves quality and efficiency

Background
From asset and wealth management to corporate banking and securities, this multi-billion dollar global investment bank runs on data. Its diversified interests are supported by a large, mission-critical data warehouse, processing 50-60 million records daily and 100,000 reports nightly. Data accuracy, reliability and integrity are paramount.

Opportunity
The bank, a mature outsourcing organization, wanted to maximize value for money by having the right support work done at the right location at the right time. From CGI’s long-standing relationship and deep knowledge of the bank’s environment, it was a natural progression for the company to take on the data warehouse support role. Over the last decade, the engagement has grown from data integration to include sophisticated reporting and analytics. On-demand, factory models are also being tested to allow innovations created in one business unit to be shared by others. The approach contributes significant economies of scale to warehouse upgrades.

Value delivered
• 10-15% cost reductions through global delivery and process improvements
• Batch processing windows cut from 8 hours to 3 hours
• Higher quality data generated in a three-tier reconciliation process
• Elimination of manual processes
• Reporting capabilities doubled without capital investment
• Faster onboarding for new lines of business
• End-user empowerment
• Thought leadership for continuous innovation

Cost savings were achieved through a combination of shifting work to other locations and streamlining and consolidating processes so work was done more efficiently. This allowed the bank to reduce the total amount of staff needed to provide support functions.

INNOVATION IN ACTION

Extract, Transform and Load (ETL) framework delivers cross-product reporting

When new cross-product reporting requirements came into the support organization for the bank’s data warehouse, the support team was in a unique position to upgrade the requirements since they had authored the queries and truly understood the user needs.

• Innovation: A specialized detailed ETL framework layer was built to sit on top of the warehouse to provide cross-functional reporting. It supports 35+ product lines, generates 250,000 batch reports and enables nearly 50,000 self-service, ad hoc reports.

• Results:
  – Highly scalable design allows incorporation of additional data marts using the same infrastructure
  – Support for real-time processing enables the bank to set real-time margin limits and provide real-time market updates for clients
  – Reporting platform lets users make their own version of the data set in the formats they wish to subscribe.
Large telecom firm advances strategies for leading-edge analytics

Background
Over the past dozen years, this large communications firm evolved its data warehouse environment from a collection of data marts into a multi-faceted, integrated customer data warehouse eco-system. The environment supports executive, operational and regulatory reporting and analytics for customer profile and household activity data for all lines of business, handling more than one million transactions per day.

Opportunity
To keep its internal staff focused on their core competencies of selling and supporting the delivery of telecom services, the company sought a strategic partner to evolve and support the environment by:

• Understanding the company’s goals and aligning the technology roadmap with those goals
• Interfacing with third-party vendors to identify and implement new technologies to support growing business needs
• Resolving all low-level technical problems, providing quality service while reducing costs

Value delivered
Based on successfully supporting four large applications replaced by the warehouse, CGI was a natural partner to assist with technology evaluation, selection and implementation, as well as ongoing development, maintenance and support. The outsourcing arrangement has allowed the telecom company to achieve:

• Rapid delivery of new capabilities for quick adaptation to business growth
• A true self-serve culture for information access and reporting
• Best practices that were translated into the right practices for their requirements
• Significant cost savings from not having to grow the internal organization or maintain staff skills around the technology environment

INNOVATION IN ACTION
Change Data Capture (CDC) system sparks new opportunities
As the data warehouse grew into a full ecosystem for reporting, analytics and big data manipulation with thousands of sources, ETL processes became very complex. All data could not be loaded in the required timeframes, creating a latency challenge.

• Innovation: A new CDC system was introduced to handle multiple ETL processes.
• Results: On the IT side, a process that originally took up to 4 days now runs in 60-90 minutes on the same hardware infrastructure. On the business side, data is much more current since feeds went from next-day availability at best, to near real-time availability. This has enabled new business opportunities in fraud detection and customer experience management.

KEY SUCCESS FACTORS
Several partner attributes led to the success of this outsourcing relationship from the client’s perspective:

• Understanding of the technology environment
• Close alignment with the business to understand the goals and work program to deliver on those goals
• High level of competency in problem resolution
• Ability to innovate and bring thought-leadership to solve known problems and problems they were able to predict
LEARN MORE
CGI experts help clients in all sectors across the globe meet the everyday challenges of data warehousing, information management and business intelligence. We have more than 4,000 professionals dedicated to this crucial set of disciplines, providing a full range of consulting, integration, managed, cloud-based, and hosted services. Learn how your organization can harness the power of data to improve operations, better connect with and serve customers, and more effectively compete in today’s business environment.

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