RESEARCH NOTE C61

ROI ANALYSIS YOU CAN TRUST™

The Real ROI from Cognos Business Intelligence

THE BOTTOM LINE

Nucleus Research independently assessed the ROI from Cognos deployments and found that business intelligence solutions can help companies leverage existing assets and improve decision making. Eighty percent of customers interviewed by Nucleus achieved a positive ROI on their Cognos deployments because of increased productivity, increased revenues, or reduced operational costs.

To provide its clients with insight on the costs and returns from business intelligence solutions, Nucleus Research conducted an analysis of the ROI from Cognos customers. Nucleus selected Cognos deployments because of Cognos's market position and relevance across various industries. According to standard Nucleus Research practice, Cognos was not informed of Nucleus's analysis and was not given the opportunity for editorial review of the report before its publication. This report is an independent analysis and was not commissioned by any user or vendor. Users were selected from a variety of sources, including information on the Cognos Web site.

Cognos provides a suite of business intelligence applications that enable companies to analyze operational data. Cognos components include the following:

- Cognos Impromptu/Impromptu Web Reports (IWR) is a report writer and querying tool enabling employees to generate reports drawn from various data sources.
- Cognos PowerPlay and PowerPlay Web enable managers to analyze large volumes of data within a Web, Microsoft, or Excel environment.
- Cognos Finance is a financial application for enterprise forecasting, budgeting, planning, and reporting.
- Cognos UpFront Portal provides a centralized Web-based portal for accessing Cognos business intelligence information as well as non-business intelligence content.
- Cognos Query is an ad hoc Web-based query tool.

Business intelligence solutions build upon existing data warehouses and repositories, providing OLAP-based analytical tools that allow businesses to gather, disseminate, and analyze data related to internal operations and customer demands. Many companies have invested in business intelligence solutions hoping to achieve a positive ROI by expediting reporting cycles, exploiting customer intelligence for revenue opportunities, and cutting the costs of operations.

Nucleus Research's objectives in examining Cognos deployments were to assess the costs and benefits companies are experiencing and to provide Nucleus clients with information on best practices for achieving a positive ROI from business intelligence solution investments.

RELATED RESEARCH

C55 ROI Profile: Cognos - Brayton International
C56 ROI Profile: Cognos - Trimac
C60 ROI Profile: Cognos - City of Albuquerque
C62 Smart money: maximizing returns from business intelligence

THE PROCESS

Nucleus reviewed the Cognos Web site, on-line technology publications and discussion forums, and print journals to identify companies using Cognos solutions. Nucleus identified and contacted 79 Cognos customers:

- Thirty agreed to participate in interviews.
- Fourteen declined to participate for various reasons.
- Thirty-five did not respond to requests for interviews.

Nucleus has included the data collected from all interviews in this report. The majority of respondents shared details of their deployments on condition of anonymity.

Nucleus asked the participating companies questions about the various factors of their Cognos deployment that would impact ROI, including the following:

- How, why, and when did you select Cognos?
- What was the duration of your deployment?
- How many users are using which modules?
- What are the most significant returns and benefit areas?
- How much did you spend on the project; in particular, how much did you spend on Cognos software, consulting, maintenance, personnel, and training?
- What have been the key deployment challenges?
- Have the benefits outweighed the costs?

In addition to survey interviews, Nucleus conducted in-depth ROI case interviews with several Cognos customers and calculated the actual return on investment from their Cognos deployments.

KEY BENEFIT AREAS

Nucleus found companies achieved positive returns from Cognos by leveraging their existing data — in ERP, CRM, and other applications and databases — to make better business decisions. In fact, there were two main types of benefits for Cognos users. They were able either to develop existing reports more efficiently or to develop new reports that had a direct impact on increased revenue or reduced costs.

Eighty percent of Cognos customers interviewed told Nucleus that they had already achieved a positive ROI from their Cognos deployment. The average interviewee had been using Cognos for 2.6 years. Average deployment time was 4.5 months.

Nucleus identified three key return areas from Cognos solutions:

- More efficient reporting
- Improved information for decision making
- Improved customer management

More Efficient Reporting

The most significant returns to organizations have come from improved reporting and data collection. Cognos's PowerPlay, Impromptu, and Finance tools can automate manual data gathering and analysis processes and drastically reduce the time needed to generate reports for management.

Companies that had previously relied on Excel spreadsheets for reporting indicated that using Cognos enabled them to reduce personnel time associated with reporting by 50 to 90 percent.

Using Cognos as opposed to more manual methods, business users are able to generate reports faster, often leading to reductions in administrative headcount. Several organizations using Cognos Finance, for example, shortened their monthly financial closing time and could then redeploy financial analysts to other responsibilities. One IT administrator told Nucleus, "*We have comments from managers saying that it takes them only hours to gather the sort of information it took months to acquire initially. That alone results in a huge time savings for the 200 operational managers using Cognos*." Another customer said, "*Using Cognos PowerPlay has completely changed our financial analysts' lives. They can be better analysts now*."

Cognos's tools extend reporting capabilities to end users, eliminating the burden on IT staff to produce ad hoc reports upon management request. In many cases, Cognos also eased demands on a company's existing ERP or legacy system and reduced the amount of time IT personnel spent resolving system-related breakdowns. Brayton International achieved a 576 percent ROI on its Impromptu and PowerPlay implementation, mainly through increases in the productivity of its 3-person IT department, which no longer had to support reporting for the entire organization.

Three key factors influence the magnitude of returns companies can expect to achieve from more efficient reporting:

- Current technology. The more manual your current reporting processes, the greater the potential returns. If Cognos is replacing a manual reporting process based on Excel or other basic tools, personnel time to develop reports could be reduced by up to 90 percent.
- Breadth. The greater the number of employees gathering data and creating reports, the greater the returns from Cognos.
- Repeatability. The greater the frequency of reports generated, the greater the returns from Cognos.

Improved Information for Decision Making

Cognos solutions enable companies to analyze and scrutinize organizational data to gain insight into internal operations. Nucleus found many Cognos users used Cognos reports to pinpoint where their company performance didn't reach expected standards for performance or profitability, and they implemented changes that had a direct impact on reduced costs or increased profits. For example:

- The city of Albuquerque deployed Cognos PowerPlay, Impromptu, and Finance to help identify and reduce costs such as excessive cell phone usage and overtime labor. The city reduced annual expenditures by 25 percent, and officials credited $2 million of this savings directly to Cognos.
- Trimac Corporation reduced trucking operation costs by using Cognos PowerPlay and Impromptu to rapidly identify problems. For example, Trimac uses Cognos report information to minimize the miles that its trucks travel without billable loads and has increased the average payload per truck.

- A restaurant chain whose sales exceed $30 million per year is using PowerPlay's analytics for menu engineering. For example, Cognos allows management to identify and eliminate food items with a disproportionately high cost of sales.

Organizations with large operations achieved cost savings of 0.6 percent to 5 percent of their total revenue.

The key factor determining the potential for returns from improved information organization and access for decision making is repeatability. The savings from improved information access will be greater for companies with high-volume processes. Management decisions that cause even minor improvements in a single business process can have a significant impact on the cost of operations and the size of revenue.

Improved Customer Management

Companies can use business intelligence to rapidly gather and analyze information about customer transactions to determine trends, target promotions and marketing, provide specialized service, and prioritize customer groups. Many companies Nucleus interviewed use Cognos solutions, particularly PowerPlay, to analyze transactional data to optimize their customer relationships. Companies achieved customer management benefits from Cognos in two ways:

- Customer intelligence. Cognos's drill-through capabilities allow companies to evaluate the profitability of products by region and industry and accordingly prioritize customer relationships. For instance, one commercial bank significantly increased its collection rate by using Cognos Finance to detect borrowers with recurring delinquencies.
- Customer self service. A number of companies interviewed by Nucleus deployed PowerPlay's reporting and analysis capabilities to their corporate clients through an extranet. One professional services company acquired 25 percent of its corporate clientele by offering customers this service, reducing customer support costs at the same time.

Two key factors will determine the likelihood of achieving returns from using Cognos to support improved customer management:

- Repeatability. The greater the volume of transactional data entering Web-facing applications, the higher the likelihood that effective analysis of that data will provide insight into revenue-generating or cost-saving opportunities.
- Cost of reporting inquiries. The greater the number of requests coming from customers that require employees to generate reports, the greater the likelihood a company can achieve positive returns from a deployment. Deploying a reporting solution onto the extranet can significantly cut the costs of supporting customers and partners by enabling self-service.

KEY COST AREAS

In calculating the costs of customers' Cognos deployments, Nucleus surveyed companies' actual and projected spending on software, hardware, consulting, personnel, and training in the first three years of deployment.

Business intelligence solutions are seldom purchased to be used independently of other solutions or databases; they are purchased to analyze data generated by other applications. Several companies in this survey sample had made prior investments in data warehouses, relational databases, or other enterprise applications. The cost of existing applications from which data is analyzed by Cognos solutions was not included in the cost calculations because their purchase was independent of the Cognos decision and preceded the investment in Cognos.

Hardware costs varied widely, and Nucleus has excluded them from the calculation of the average cost of Cognos deployments so as not to skew the results. Many companies leveraged their existing hardware to support their Cognos infrastructures.

Fees paid to trainers depended largely on a company's specific purchasing arrangement with Cognos; therefore, Nucleus has included only the costs of personnel time devoted to initial training.

Table 1. The 3-Year Average Cost of a Cognos Deployment

Category	**Average Cost**	**Data Components**
Software	$380,062	Average initial license price = $251,167 Average annual maintenance price = $42,965
Consulting	$93,167	Average consulting expenditure of customers interviewed who invested in consulting
Personnel	$432,000	Average number of FTEs to provide ongoing support for Cognos = 1.8 Estimated fully loaded cost of a full-time IT professional = $80,000
Training	$28,000	Average personnel time spent on initial training = 2 days Estimated fully loaded cost of a business user = $20/hour Median number of users = 87.5
Total	**$933,229**	

Nucleus examined each of the four main cost areas — software, consulting, personnel, and training — in greater detail.

The average 3-year cost of a Cognos deployment was $933,229, which included the costs of software licenses, license maintenance, consulting, personnel, and training.

SOFTWARE

Nucleus found that the average initial license price spent for Cognos software was $251,167; the median figure was $125,000. The average annual license maintenance fee for Cognos customers interviewed ranges from 12 to 28 percent, with an average of 16 percent. In many cases, Cognos consulting to support the initial deployment was included in the software license price.

More than one-fifth of customers interviewed cited price as a key factor in their decision to purchase Cognos instead of competing solutions.

The majority of Cognos customers interviewed believe that Cognos license pricing is in line with the value the solution provides and that the pricing structure is relatively straightforward.

Table 2. Median and Average Costs of a Cognos Deployment

Initial Costs	**Average**	**Median**
Software license	$251,167	$125,000
Consulting	$93,167	$45,834
Ongoing Annual Costs	**Average**	**Median**
Software Maintenance	$42,965	$22,187
Support Personnel	$144,000	$80,000

CONSULTING

A majority of the customers interviewed either had consulting from Cognos included in their Cognos software licence fee or engaged a Cognos Premier or Services partner to support solution development, customization, or testing. The average consulting spend for companies that had separate consulting engagements with Cognos or third parties was $93,167, with a high of $230,000 and a low of $5,000.

Most companies interviewed felt that deploying Cognos did not require excessive consulting. One customer said, *"[We chose Cognos because] Cognos was an out-of-the-box application, and we were looking for something with maximum power and minimum development and consulting."*

While the general feedback about consulting was positive, several customers found consulting challenges when deploying Cognos in a Unix environment. Some Cognos consultants had limited skills when deploying the solution in an environment that was not Windows centric. One Cognos customer told Nucleus that the deployment took twice as long as expected because Cognos consultants had a poor understanding of how to install the application in a Unix environment.

PERSONNEL

The average customer interviewed used 3.5 internal full-time employees to complete the deployment and fewer than 2 full-time people to support the solution on an ongoing basis. In general, customers felt that Cognos required minimal ongoing support, and according to one customer, *"The solution pretty much supports itself."*

However, the level of support required is likely to increase during those periods when companies upgrade their Cognos solution or integrate it with new software.

TRAINING
Customers trained end users for an average of two days following the initial implementation. In most cases, training was conducted in house or provided by Cognos as part of the overall license package.

In general, companies felt that Cognos applications require minimal training, and more than half of the Cognos customers interviewed told Nucleus that they chose the software because of its ease of use.

One interviewee told Nucleus, *"Cognos has more of a focus on business users as opposed to technology users, which puts less of a training burden on us."*

Additional training may be necessary when companies upgrade their modules or develop new cubes for data analysis or as users demand more value from the application. Training is especially important where users may be hesitant to adopt the technology. For example, an educational institution told Nucleus that it failed to achieve any returns from its significant investment in Cognos because users did not see any value in the solution from the beginning.

Seventy-five percent of Cognos customers interviewed said that their deployment was on schedule.

DEPLOYMENT CHALLENGES
Although many companies deployed their Cognos solutions on time and on budget, some companies did have challenges in effectively deploying and achieving benefits from their Cognos investment.

Companies had challenges in three key areas: cleaning and validating data, upgrading to new versions of the software, and defining user requirements.

Cleaning and Validating Data
Key to achieving returns from a business intelligence application is ensuring the accuracy and consistency of data within a company's information systems because Cognos's reports will be only as good as the data upon which they are generated. One IT administrator said, *"You have to be very careful as a lot of work goes into planning how to build your cubes, deciding which data goes into the system, whether the data synchronizes, and if you don't do that, you don't get much value out of it."*

Not surprisingly, cleaning and validating data was cited as one of the biggest challenges in achieving returns from a Cognos deployment. Many companies wished that they had adequately budgeted for the time commitments that data cleaning entailed.

Data cleaning and validation was cited as the biggest deployment challenge facing companies. Project teams should prepare to spend as much as a few months cleaning and testing their business data.

To avoid handicapping returns because of data cleaning and validation issues, companies should evaluate their current data and plan time to prepare data before a business intelligence solution deployment.

The time needed to effectively clean and validate data will depend on the following:

- The number of information sources from which data is being consolidated; that will determine the length and complexity of the data validation exercise. For instance, a government agency that merged with an ancillary regulatory body needed six months to consolidate and synchronize data from nine different payroll systems before kicking off its Cognos implementation.
- The consistency and accuracy of data in current systems. Depending on the type of system generating data, there may be exceptions or errors that impact the reliability of business intelligence reports.

Upgrading to New Versions of the Software

Many customers interviewed upgraded their Cognos solution after initial deployment. Several interviewees reported that upgrading was an unexpectedly difficult and time-consuming process that required significant personnel time, additional training, and in some cases, outside consulting support:

- *"Basically, going from one version to the next [was the biggest challenge]. We wish Cognos would provide users support with understanding compatibility issues. We have upgraded twice, and each time it has been difficult for us."*
- *"Upgrading is a nightmare. [New Cognos version releases possess] more than the average number of bugs one can expect. You'll need to have a full-time person playing around with the new releases for weeks to get it right."*
- *"Upgrading the PortFolio version of PowerPlay has been an uphill task. A lot of times, Cognos's frequent releases can be confusing with marginal value add. Cognos should have fewer releases with more continuity between versions."*

While companies indicated that Cognos is improving quality assurance in response to customer feedback, several felt that Cognos services staff and consultants were not entirely proficient with the use of new versions at the time of release.

Cognos customers considering upgrades should do the following:

- Review customer references to gain an accurate view of the market readiness of any upgrade.
- Negotiate time and service level agreements with Cognos and any outside consulting group to ensure that the risk of over-budget or over-time upgrades rests with the vendor.
- Consider forgoing regular upgrades unless new functionality translates into significant additional benefits.

Defining User Requirements

Another common challenge that Cognos customers faced was understanding and defining the data reporting needs of the end users. One Cognos project manager said, *"One of the biggest challenges is getting data requirements of users. In the beginning, someone must* *determine what we are measuring. Sometimes you ask users which metrics they'd like Cognos to analyze, and you don't get measurable answers. I think that is the hardest part."*

To maximize returns, companies should work with end users to define reporting requirements and prioritize reporting projects based on their potential returns.

CONCLUSION

Business intelligence solutions enable companies to leverage existing data and resources to increase the productivity of employees responsible for reporting on data while improving information access for decision making and customer relationship management.

Cognos is just one of a number of business intelligence solutions available on the market. The best business intelligence solution for any specific environment will depend on a number of factors including existing technology and systems, the technology proficiency of users, and the potential impact of business intelligence on revenues or costs.

Companies considering an investment in business intelligence software should do the following:

- Select a solution based on an evaluation of costs and benefits in your specific environment, taking into account current systems and user requirements.
- Use ROI analysis to determine where the greatest benefits will be derived and use that analysis as a roadmap for prioritizing deployment, training, and report development.
- Realistically evaluate current data locations and validity and plan time for effective data cleaning.

Companies considering an investment in a Cognos solution should follow these guidelines as well. Those considering a Cognos upgrade should evaluate the relative costs and benefits associated with the upgrade before moving forward, and may want to negotiate service and timeline-based payment agreements with Cognos or other consultants to mitigate the risk associated with an upgrade.

Nucleus Research found that 80 percent of Cognos customers interviewed achieved a positive ROI from their deployments, driven by benefits as well as the relatively low cost and rapid deployment times of Cognos solutions. Evaluating the potential costs, benefits, and data and user requirements before deploying a business intelligence solution such as Cognos will drive a positive return on investment.