

**REQUEST FOR PROPOSAL
DATA WAREHOUSING
Business Intelligence (BI) TOOL
FOR
RENSSELAER POLYTECHNIC INSTITUTE**

Rensselaer Polytechnic Institute
Troy, New York
<http://www.rpi.edu>
November 2001

1 Objective

This Request For Proposal (RFP) is issued for the purpose of supporting the institute-wide initiative of developing a data warehouse architecture that provides improved access to information, fostering more informed decision-making. The Business Intelligence (BI) tool is an integral part of the data warehousing architecture that will be used by the administrative and data warehousing professional staff to navigate through the data of the data warehouse.

2 About Rensselaer

Rensselaer has been at the forefront of scientific and technological education since 1824. This year, U.S. News & World Report ranked Rensselaer among the top 50 universities nationwide. Rensselaer's long-standing reputation for educational excellence draws students from every U.S. state and from over 80 foreign countries.

Comprised of five schools serving both undergraduate and graduate students, Rensselaer is a private university with a majority of its facilities located on a 260-acre campus in Troy, New York. Other Rensselaer facilities exist in Hartford, Connecticut and Groton, Connecticut. In Troy, there are approximately 500 faculty members, 1400 staff members, 5200 undergraduate students, and 1800 graduate students.

3 **Response Requirements:** Please submit one (1) unbound and twenty (20) bound copies of your Proposal, organized and tabbed as described below.

4 **Executive Summary:** Include in this tab an executive summary discussing the highlights of the proposal. Please do not include pricing information in this tab.

5 **Introduction:** Include in this tab any information that your company wishes to submit about the nature of your business and primary business focus. Include information about what makes your company (not the product) different from your competitors.

6 Proposal Format:

6.1 Rensselaer will be imaging all proposals. Please leave one copy *unbound* for imaging; the other 20 copies should be bound. The official name of the firm submitting the proposal must appear on the outside front cover of each binder, together with the title "RFP Data Warehousing BI Tool Proposal."

6.2 Each proposal page must be numbered consecutively from the beginning of the proposal (Executive Summary) through all appended material.

7 **Contract Terms:** Include copies of all contracts or agreements that you expect Rensselaer to sign.

- 8 **Exceptions:** Include in this section either a statement that you will make no exceptions to the requirements of the RFP, or a statement clearly indicating any exceptions and a statement of substitute wording for resolving the exception.
- 9 **Company Profile:** Please include the following information about your company: the nature of your business and primary business focus, the percentage of business that comes from the BI tool referenced in the RFP, your company's major differentiator (i.e. what makes your company—not your product—different from your competitors), the mailing address and contact information for your headquarters, and the mailing address and contact information for your office closest to Rensselaer (Troy, NY).
- 10 **Financial Stability:** Each proposal must include a certified external audit statement and the 10-K report of the last corporate fiscal period for the firm submitting the proposal. Each vendor must submit documentation indicating at least three years of experience, as of the proposal submission date, in providing services similar to those required in this RFP.
- 11 **Billing Methods:** Describe in detail your billing methodology. Rensselaer is exempt from payment of certain taxes; it is expected that invoices will not include taxes for which an exemption applies. A tax exemption certificate can be provided upon request.
- 12 **Costs:** Please specify pricing for each component. Indicate if pricing would differ if Rensselaer only purchased certain components of the system.
- 13 **Support:** Proposals must indicate the name, experience level, and length of service with the firm of the customer service representative who would be assigned to Rensselaer. A description of the on-going support program must be provided. Please describe levels and hours of support available.
- 14 **References:** Please list at least five (5) clients that you have done business with in the past year. For each reference, include the company's name, mailing address, telephone number, contact name, and number of years as a customer. Rensselaer may contact referenced clients during the evaluation process. Please include universities comparable to Rensselaer in your list of references, if possible.

15 **General Product Requirements:** Over the next three years, Rensselaer is developing an institute-wide data warehouse to provide improved access to information, fostering better and more informed decision-making. The BI tool is an integral part of the data warehousing architecture that will be used by the administrative and data warehousing professional staff to navigate through the data of the data warehouse.

15.1 **Detailed System Requirements:** Questions regarding system requirements are detailed in Appendix A.

15.2 **Selection Team:** The BI Tools Selection Committee consists of a core team of end-user representatives, as well as representatives from the Integrated Administrative Computing Services (IACS) and Purchasing Departments.

15.3 **Selection Process:** After an initial review of proposals, the BI Tools Selection Committee may determine that further discussions and/or vendor presentations are required, as well as vendor product trial periods in which vendor products are installed at Rensselaer for hands-on evaluation over the course of 2 or more weeks.

15.4 **Selection Criteria:** The following criteria (listed in order of priority) will be used to select the BI tool:

15.4.1 The degree to which the proposed system satisfies the Rensselaer business requirements and management process

15.4.2 Overall system functionality, flexibility, ease-of-use and performance

15.4.3 Support and training provided for implementation

15.4.4 Initial product cost and ongoing license and maintenance costs

15.4.5 Ongoing maintenance and training

15.4.6 Corporate financial condition

15.4.7 References (please provide comparable universities, if possible)

16 **Notification of Award/Contract:** Rensselaer will notify the selected vendor through a letter of intent. A contract will be negotiated between Rensselaer and the selected vendor. The contract will, among other provisions, incorporate this RFP and the selected vendor's proposal. Upon execution by the vendor and Rensselaer, the contract will be submitted for final approval and a Purchase Order will be issued. Rensselaer will notify unsuccessful vendors in writing.

- 17 **Rensselaer reserves the right to:**
 - 17.1 Reject any and all proposals received in response to this RFP.
 - 17.2 Waive or modify minor irregularities in proposals received, after prior notification to the Vendor.
 - 17.3 Adjust or correct cost or cost figures with the concurrence of the Vendor if errors exist, and the Vendor establishes that a verifiable error occurred in the computation of the proposal.
 - 17.4 Adopt all or any part of a bidder's proposal in selecting the optimum configuration.
 - 17.5 Negotiate with selected Vendor responding to this RFP within the RFP requirements necessary to serve the best interests of Rensselaer.
 - 17.6 Begin contract negotiations with another Vendor in order to serve and realize the best interests of Rensselaer, should Rensselaer be unsuccessful in negotiating a contract with the selected Vendor within an acceptable time frame.

- 18 **Liability:** Rensselaer is not liable for any costs incurred by a Vendor in the preparation and production of a proposal or for any work performed prior to the issuance of a contract or delivery order.

- 19 **Disaster Recovery Responsibility:** The Vendor must assume an active facilitating role in any major production system failure. The Vendor must act as the primary source of technical expertise relative to the rapid re-establishment of the production system.

20 **Project Schedule:**

Rensselaer issues RFP	November 07, 2001
RFP response due date	November 21, 2001
Vendor presentations	November 28-30, 2001
Product trial period at Rensselaer	December 03-17, 2001
Decision date	December 17, 2001

- 21 **General Information:** In order to be considered, interested firms must respond to this Request for Proposal by the due date shown above.

Questions regarding this Request For Proposal may be addressed to:
Ora Fish, Project Manager, IACS
Phone: (518) 276-2213

Interested vendors must submit one (1) unbound copy and twenty (20) bound copies of their proposal in a proposal package clearly marked **Data Warehousing BI Proposal**. Please send proposal packages to:

Keith E. Martens
Purchasing Agent
Purchasing Department – West Hall 311
Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180-3590

Electronic submissions must be sent via email to:
martek@rpi.edu
If hand carried, the office hours are 8:30 a.m. – 5:00 p.m.
Facsimile responses will **NOT** be accepted.

Proposal material will be treated as proprietary and become the property of Rensselaer. Rensselaer reserves the right to waive any irregularities in the proposals and to accept or reject any or all proposals.

- 22 **General Terms and Conditions:** If this RFP results in an agreement to provide a data warehousing BI tool, the following terms and conditions will apply:
- 22.1 This Agreement can be modified only in writing and when signed by both parties.
 - 22.2 Either party may terminate this Agreement, in part or in whole, without penalty.
 - 22.3 Upon notification of termination, the two parties shall agree upon a turnover plan and agree upon the compensation due.
 - 22.4 This entire Agreement may not be assigned, sublet, or transferred without the prior written consent of Rensselaer.
 - 22.5 Vendor is an independent contractor, not an employee, agent or partner of Rensselaer. Therefore, neither Vendor nor any of its employees are entitled to participate in any form of benefit or privilege that Rensselaer extends or may offer to any of its own employees.
 - 22.6 Vendor agrees to indemnify Rensselaer and to hold Rensselaer harmless from and against all claims, liability, loss, damage, and expenses (including legal fees), arising from or due to any claim with respect to any part of the sales or services covered by this Agreement or any activity, Vendor, its officers, agents, or employees on or about Rensselaer's property. Vendor shall defend any such litigation brought against Rensselaer. This clause shall survive termination of this Agreement.
 - 22.7 During the performance of this Agreement, Vendor agrees not to discriminate against any individual because of race, color, religion, sex, or national origin, or because he or she has a physical or mental handicap or because he or she is a disabled veteran or a veteran of the Vietnam era. The aforesaid provision shall include, but not be limited to, the following: employment; upgrading; demotion; transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, sales, and conditions of consultations regarding special needs of customers and/or clients. Furthermore, vendor will adhere to rigorously enforced principles of affirmative action regarding members of minority groups and handicapped individuals.
 - 22.8 Services performed under this Agreement must be in accordance with all governmental laws, rules, regulations, and ordinances, including, but not limited to, OSHA, ANSI, EOA, ENCON, and Vendor certifies to this requirement. Rensselaer reserves the right, at its sole option, to order cessation of performance in case of violation by Vendor, and Rensselaer shall have no liability whatsoever resulting from such interruption.
 - 22.9 Parking permits may be required for parking on campus. Rules issued by the Parking Office must be followed. If any fines are imposed on Vendor personnel, it is the responsibility of Vendor to appeal the violation and/or pay the fine.
 - 22.10 This Agreement shall be governed by and construed in accordance with the laws of the State of New York.

23 Insurance Requirements

Before any services and/or work can be performed on Rensselaer's premises, evidence of insurance in force naming Rensselaer as an additional insured must be in the possession of the Rensselaer Department of Risk Management, 110 8th Street, Troy, New York 12180. Unless otherwise directed in writing, the following coverage is required:

- Comprehensive General Liability (including operations and completed operations) - \$2,000,000 – occurrence, \$2,000,000 – aggregate.
- Comprehensive Automobile Liability (including owned, non-owned and hired autos) - \$1,000,000 combined single limit.
- Workers Compensation as required by law.

The Vendor is responsible to maintain insurance coverage throughout the term of the agreement and/or contract. If for any reason during the term, the insurance policy is cancelled, the Vendor must immediately notify Rensselaer.

Appendix A

Product Profile: Provide a one-page product profile for each product used in the response to this RFP. Please include the following:

- 1 Product name
- 2 Product description
- 3 Current release level
- 4 Date current release level was generally available
- 5 Projected general availability of next release level
- 6 Current product install base
- 7 Number of companies
- 8 Number of users

Consulting: Please describe the expected level of involvement your consultants will have in each stage of this project. How experienced are your consultants?

Business Partners: Please indicate products that are fully integrated with your solution. Describe the connectivity and interface requirements.

Business Intelligence functionality: Provide a complete description of your proposed BI solution, including the key features of your BI solution and products, as well as what makes your solution unique.

Application areas: Please describe standard application areas that your product supports, including budgeting, financial planning, performance planning, etc.

Web-based and standalone clients: Does your product consist of both a web-based and standalone end-user client? If so, please fully describe functionality that is *not* available in both versions of the client (i.e. what works in the standalone client but is not available in the web-based client, and vice versa?).

Pricing and licensing model: How much does your product cost, including initial training, support and consulting?

On-Demand Querying and Reporting: Please address the following questions and statements regarding on-demand query and report generation functionality.

1. On-demand querying and subsequent report generation must be intuitive and easy for end-users to understand and use.
2. End-user tools must provide extremely quick response times to their users.
3. Multi-dimensional analysis (i.e. slicing and dicing the data) must be available, as well as drill-down, drill-up and drill-across.
4. Pivot and cross-tab tables must be supported. Does your product allow end-users to “page” through sections of the pivot table (i.e. similar to “page” pick lists in Excel pivot tables)? Can end-users swing attributes between pages, rows, columns?
5. Does your product support a multi-pass query in which an initial query obtains a subset of data that is fed to a second, more complex query? How is such a multi-pass query set up within your product?
6. Can end-users and administrators provide criteria to suppress/hide rows or sections of a generated report? As an example, can output rows be automatically suppressed if all data points are zero?
7. Can duplicate values in row/column labels be suppressed (as in a SQL*Plus “break on <column> nodup” statement)?
8. How does your product handle missing or “null” data points? How is such missing data displayed to the end-user? Can end-users supply their own text alternative?
9. Does your product enable access to relational (or other) database tables?
10. Can end-users define their own data ranges (e.g. \$1-500, \$500-5000, \$5000-25,000, over \$25,000)? If so, can such ranges consist of unequal subsets as in the given example? Are end-users able to save such ranges for use in future reports?
11. Can your product calculate and display percentage values of a grand total?
12. Can your product calculate and display percentage or unit change between values on the same row in different columns (e.g. increase/decrease in budget allocation from one year to the next)?
13. Please describe the suite of built-in functions (e.g. text, date, numeric, comparison, logical, etc.) available for use by end-users.
14. Does your product provide transparent aggregate navigation? When a query is submitted, does your product automatically select from an aggregation, if such an aggregation exists?
15. How can an administrator help ensure aggregations are utilized? How can administrators detect the need for new aggregations?
16. Can your product automatically generate row numbers (or a similar mechanism) for easier end-user reference? Can your product also provide gridlines, both on the screen and on the print-ready reports?
17. Can reports contain more than one query? If so, how are multiple queries scheduled?
18. Please describe the types of graphical views your product supports (e.g. pie charts, line graphs, bar graphs, etc.). Also describe how such graphs may be customized by end-users, including resizing, embedding trend lines, re-angling (i.e. for 3-dimensional views), preparing a print-ready graph, specifying a legend, title, axis labels, fonts, color schemes, etc.

19. Can end-users drill down directly via the graphical display (e.g. click on a wedge of a pie chart to obtain more detailed information)?
20. Can end-users easily toggle between a flat data-only view and a graphical view?
21. Are end-users able to preview a report by limiting output to the first 100 rows (or some other configurable value)?
22. Can end-users combine several rows into one row (i.e. group the data) and assign their own data label to that new group?
23. Can end-users sort/pivot data locally without initiating a new query against the underlying database(s)?
24. Can query/report output be saved as a snapshot for future use? If so, how is this accomplished (i.e. how is the underlying data saved)?
25. To what extent can end-users work with data offline (e.g. while on a laptop off the network, when the source database is unavailable, etc.)?
26. Can end-users view report configuration details, including filters, hidden sections, etc.?

Managed Automated Reporting: Please address the following questions and statements regarding automated report generation and distribution.

1. Describe how your product is used to schedule the production and distribution of managed reports. How are reports distributed to end-users?
2. Can end-users subscribe to reports without contacting an administrator?
3. Describe how end-users schedule their own reports.
4. Can data elements be automatically highlighted (via font, weight, color changes) based on user-defined criteria (e.g. show data field in red when value exceeds \$50,000; show data field in blue when value falls below 30%)?
5. Is drill-down and drill-across functionality available to end-users when viewing automatically generated reports?
6. Can end-users customize an automatically generated report (e.g. add/delete columns, etc.)? Can end-users save such changes for future report generations?
7. Does your product support the ability to send a section of a report to a particular group of users (i.e. bursting functionality)?
8. Does your product support the ability to easily constrain a dimension using union/intersect/set difference techniques (as opposed to an end-user manually selecting each desired attribute in the set)?
9. Can the report generation process take input parameters such as static values, variables, results of a SQL statement, etc.? Is the number of parameters static or can additional logic be configured (e.g. via if-then-else clauses)?

Organization of the End-User Environment: Please address the following questions and statements regarding the end-user environment provided by your product.

1. Please describe how data and reports are organized and displayed in the tool.
2. Do end-users have the ability to view a subject directory that reveals the types of data that are available on a campus-wide basis, even if end-users do not have full access to such data?
3. Please describe how your product provides access to the underlying metadata from within the ETL tool.
4. How can end-users bookmark data for later perusal?
5. Can end-users define their own collaborative workgroups consisting of a subset of users? Within such workgroups, can end-users publish and share their reports and views? Please describe the security measures in place to protect against unauthorized access.
6. Does the end-user environment allow the creation of hyperlinks to external web pages?
7. Please fully describe the search utilities that are available within the end-user client. What types of elements may the end-users search for (e.g. report, subject area, table, column, keyword, field, etc.)?
8. Are end-users able to search both locally (i.e. within their own archived data and reports) and globally (i.e. within all or a subset of campus-wide data and reports)?
9. Please describe your product's metadata (e.g. users, groups, reports, schedules, etc.) and how such metadata is made available to end-users and administrators.

Data Analysis: Please address the following questions and statements regarding your product's data analysis capabilities.

1. Describe the statistical analysis functions that your product supports (e.g. linear regression, strength of relationships, correlations, etc.).
2. Does your product have the ability to detect or discover trends in the data? If so, how is such trend discovery configured? What actions can your product perform given such discoveries (e.g. send an email, alert a pager, etc.)?
3. Can your product perform what-if analyses and other such forecasting methods? If so, please describe.

External System Integration: Please address the following questions and statements regarding the integration of your product with other external systems and tools.

1. Please list all systems and tools that your product successfully integrates with (e.g. ETL tools, Microsoft Excel, Microsoft Access, Oracle RDBMS, etc.), including the level of integration. Also describe how such integrations have been verified (e.g. via a well-defined certification process?).
2. How does your product assimilate metadata from ETL tools from other vendors, including Informatica, Cognos, and DataStage?
3. Please list the data export formats that your product supports (e.g. tsv/csv, Microsoft Excel, XML, HTML, proprietary format, etc.).

System Installation and Tool Administration: Please address the following questions and statements regarding the installation and administration of your product.

1. Please describe the platform and system requirements of your product.
2. For web-based clients, are there specific requirements on the type and version of browser that may be used (e.g. Netscape vs. Internet Explorer)?
3. Please describe the overall architecture of your product (e.g. client/server, two-tier/three-tier architecture, etc.), including how your product functions in a geographically distributed environment.
4. Please describe the steps involved in installing your product.
5. Please list the administrative functions that are included in your product (e.g. defining roles, backup/recovery, etc.).
6. How do tool administrators detect when your product requires additional hardware or requires human intervention (e.g. to restart a process, etc.)?
7. How often are major/minor software upgrades available? How would we be notified of a new software release?
8. Please describe how standalone (i.e. non-web-based) clients are distributed to end-user desktops. How are software upgrades distributed to end-users? Are there ways to make the upgrade process transparent to the end-users?

Security: Please address the following questions and statements regarding security.

1. How are end-users and administrators authenticated to your product? How do end-users and administrators gain access to reports, datasets, etc. (e.g. via roles)?
2. Please fully describe how reports and data are protected from unauthorized users.
3. Please describe how row-level access to the data is attained.
4. What level of encryption is used on passwords, data, reports, etc.?
5. How does the existence of a firewall change the security architecture?
6. How does the web-based client differ in terms of security from the standalone client?

Performance and Scalability: Please address the following questions and statements regarding the runtime performance and scalability of your product.

1. Please fully describe how your product scales one or more orders of magnitude (i.e. how your product supports a substantial increase in data size, the frequency and complexity of end-user queries, etc.).
2. How is performance measured within your product? Are such measures available to tool administrators? If so, how?
3. How is I/O measured and recorded to aid in determining where additional aggregations may be necessary to improve performance?
4. How does one obtain maximum performance with your product?
5. If multiple instances of your product are supported, does your product implement a load-balancing scheme? If so, please describe.
6. How does your product protect against “runaway queries” in which a query causes system resources to be fully consumed? Does your product support the use of upper-bound time limits on the amount of time a query executes? If so, can end-users establish their own time limits?
7. How does your product handle a division by zero operation?

Design/Development Environment: Please address the following questions and statements regarding the design/development environment of your product.

1. The design/development environment must be intuitive and easy for users to understand and use.
2. Does your product require the use of a proprietary development language?
3. Please describe how your product supports the development process, moving reports from development to test to production.
4. Does your product support version control to maintain a history of changes through the development process?
5. Describe the debugging capabilities of your product.
6. Please describe how end-users and developers design reports, including both quick (e.g. wizard-based) and detailed methods.
7. Please describe the flexibility the developer has in directing the placement of output objects on a report. End-users require web-based reports, as well as print-ready reports.
8. Can non-data objects be added to reports (e.g. text, graphics, hyperlinks to related information or other reports, etc.)?
9. Does your product support the use of style-sheets? If so, please describe how this is accomplished. Can end-users develop their own style-sheets?
10. Can developers save their queries, models, reports, etc. as templates in support of *reusability* and enterprise-wide *consistency*? How is this accomplished?
11. Does your product automatically generate SQL or other query language output? If so, is the end-user able to view the SQL statements?
12. Can developers edit or write their own custom SQL statements? What negative side-effects does this cause?
13. Can developers call external Oracle stored procedures or other such external functions? If so, how is this accomplished?

Online Training and Help Facilities: Please address the following questions and statements regarding your product's online help facilities.

1. Please describe the online help that your product provides to end-users and administrators.
2. Does your product include training aids such as online tutorials, etc.?
3. Are tutorials and help screens customizable to match Rensselaer (i.e. to include information and instructions that are Rensselaer-specific, as well as to include Rensselaer logos, etc.)?
4. Please describe the level to which the online help facilities are integrated within your product (e.g. right-click access, separate utility, on the web, etc.).
5. Are there certification programs available for your product?