

Report Mining

An Easier Way to Access Corporate Information

DATAWATCH

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HARDCOPY REPORTS

Pros:

- An existing informational asset: no new programming work required
- Very easy to re-produce anytime

Cons:

- Enormous waste of paper
- Seemingly no way to interactively work with the data
- Incurs many costs beyond paper, including storage costs, manhours lost re-keying data from reports into spreadsheets, etc
- Even delivering “softcopy” views of reports yield limited benefits: users still can’t easily work with data, may print thick reports locally, etc.



From the Makers of Monarch™

▶ “I want my data, please...and hold the *chindogu!*”

Three years before becoming Mayor of New York City, Michael Bloomberg wrote a brief yet astute opening editorial in his Bloomberg Personal Finance magazine. In that article, Bloomberg reminded readers of a simple but often overlooked fact: the best technology typically has the fewest bells and whistles. The humorous graphic that accompanied Bloomberg’s article complimented his point quite well. The picture depicted a man wearing virtual reality headgear, connected intricately to a small robotic arm, which in turn held...the man’s toothbrush. How’s that for progress?

Bloomberg quoted a Japanese word for such silly technology overkill: *chindogu*. It refers to technology that is so complex, so over-specialized, that it merely complicates life further instead of improving it. ¹

The term *chindogu* readily applies not only to the world of consumer electronics, but also to the world of business intelligence; the systems and software from which managers and workers get the data they need to do their jobs effectively. Software solutions intended to let end users get their own data sometimes prove to be maddeningly complex. The company’s IT department may find itself swamped with requests from frustrated end users seeking customized data. End users often resort to printing thick reports and rekeying data into a spreadsheet for analytical work.

Now more than ever, businesses need greater access to more information more quickly to make decisions. But are they getting it? According to InformationWeek, despite collectively spending billions on data management and business intelligence tools, the answer in many cases is no.² Instead, the unfortunate end result is that many business intelligence solutions somehow manage to cause more work, both for end users and the IT department.

The challenge to organizations is clear: empower users to easily access information in true self-service fashion, without merely adding expensive layers of *chindogu* technology that miss the mark.

▶ Common Avenues for Information Delivery

In this white paper, we’ll look at some common approaches to delivering corporate information today, and introduce an innovative solution called **Report Mining**, which combines some of the best features from each.

Hardcopy Reports: Still a Staple of Corporate Information

Far and away the most frequently used information source remains that old standby, the printed report. ERP and other enterprise information systems typically offer a large library of existing (“canned”) reports, which can be run anytime. Organizations with outsourced data processing services also typically receive many reports in plain text or PDF format. For example, SAP offers “canned” reports numbering in the several thousands. SAP’s pre-delivered standard reports are robust in their design and provide the essential information you need to make informed business decisions. For each individual reporting requirement that you identify, you should first investigate whether SAP already offers that report as a “canned” report. All of the work is already done for you—there is no coding to do, no security to work out, and all the information that you need is embedded within the delivered standard report.³

DATA QUERY TOOLS – Applied to Operational Databases

Pros:

- Delivers live data to users
- Enables interactive analysis

Cons:

- Frequent or complex data queries may slow down operational systems
- Tools often prove too difficult for end users to work with
- IT department often incurs long queue of user requests for help
- Potential security issues associated with granting direct access to core databases

Of course, paper reports have many obvious shortcomings, notably the hefty costs associated with massive paper use. A recent University of California Berkeley study, analyzing business paper consumption over five years, concluded: “Contrary to notions of paperless offices...the consumption of office paper has gone up substantially in recent years.”⁴ Report costs also go far beyond paper itself to include hefty printing, handling, delivery and storage costs. Plus, it seems there is no way to work interactively with report data frozen on the printed page, without wasting more time manually rekeying data from reports into spreadsheets.

Recently, the Finance Agency of the Controller’s Office of Santa Clara County, California, surveyed how paper accounting reports issued by the Controller’s Office were being used by various County agencies. The results were the same throughout the County: massive amounts of data from paper reports were being rekeyed into MS Excel or Access in order to work with the data.⁵

Such rekeying of data is an error-prone process that wastes employee time and severely limits the ability to act upon data in a timely manner. Chances are such wasteful activities are going on in your organization, costing real money and real opportunities right now.

Using Database Query Tools against Production Databases

Business Intelligence (BI) applications seek to provide direct access to data within production databases, so managers can then request the exact information they need anytime, on an ad hoc basis.

Using BI tools to retrieve information directly from databases was supposed to end the need to run and print most “canned” reports, but, as noted earlier, organizations are printing more reports than ever before. Even data query tools intended to be easy to use can still create substantial end user frustration. According to InformationWeek, while suppliers of business intelligence applications have been saying for years that their products bring data analysis to front line workers, some say a Ph.D. in statistics and experience in SQL programming are all but required to use the software.⁶ Frustrated managers may spend too much time simply trying to build the correct query for the information they need, and the data query burden often falls on the IT department.

Welcome to the Data Warehouse. Hardhats Required.

To reap the promised benefits of high-end business intelligence solutions, companies might implement a data warehouse, or a data mart; a smaller, tactical data warehouse. Both are intended to provide access to data for analysis and decision making without impacting operational systems.

To build the data warehouse, “raw” data is extracted from operational databases, perhaps from multiple enterprise systems, at pre-determined intervals, cleansed and exported to a carefully designed data warehouse. This data cleansing and migration process is referred to as Extraction, Transformation and Loading (ETL).

Proper ETL ensures that data from different operational data tables, perhaps from multiple disparate operational systems, is combined together accurately. As we will soon see, Report Mining offers data warehouse and data mart projects a far greater, and faster, opportunity for success, by dramatically eliminating much of the risks within the ETL process for any organization, including SAP customers.



From the Makers of Monarch™

▶ Putting it All Together: The Report Mining Alternative

Despite the existence of powerful data query tools, paper reports continue to proliferate. Consider this intriguing quote from a management accounting team leader who remarked, “*Paper reports are still floating around, and I’d love to pilfer through (end user) desks and see what information they’re actually looking at.*”⁷

And when a CIO was asked by InformationWeek how many companies today make business decisions, he responded: “A lot of by-guess and by-golly, a lot of by-gut, and a whole lot of paper reports.”⁸

Executives, managers and workers still resort to printed reports for information, despite huge efforts to provide direct access to data, either from operational systems or new data warehouses and marts. Yet, even after all of this powerful technology, one fact is undeniable: *Printed reports steadfastly refuse to leave the business landscape. End users still cannot do without them.*

This fact leads us to some key questions:

- Given that reports are so pervasive—after all, SAP offers over 4,000 “canned” reports—why not try to gain some brand new value from them?
- What if the tried and true data buried within these report files could be transformed into live, actionable data?
- What if end users could easily access the data within report files, and then easily sort, filter, analyze and export the data, without programming?

As the venerable Robert Moran of Aberdeen Group once commented, “One of the biggest values of business intelligence tools is their ability to help business users to do their jobs better—a value that the majority of users in most organizations could attain if they could quickly find and use the information already contained in their organization’s reports.”

The idea is quite simple: instead of running existing ERP, accounting or other enterprise reports to a printer, they are instead run to a print file or PDF file, and mined into actionable data by end users. Datawatch **Monarch** software is the de facto standard in Report Mining.

Using Monarch-powered Report Mining solutions, end users of any IT technology skill level can immediately mine the massive amounts of data already captured in the organization’s existing reports. In fact, no additional programming work is required to get actionable data into the hands of managers and workers. Users can, on their own, transform existing reports into live, actionable data with Monarch and start discovering new business intelligence insights *right now*.

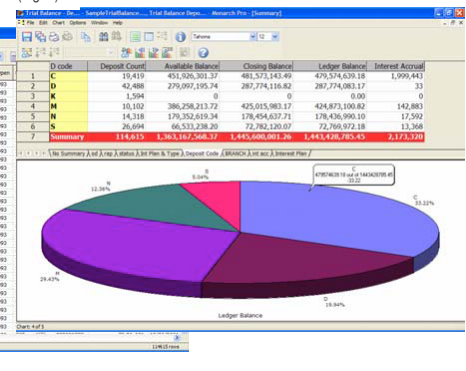


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(Fig. 1)

(Fig. 2)

(Fig. 3)



Monarch in Action: Mining data from a complex Trial Balance report (Fig. 1) is performed visually using Monarch without programming, to transform the report into a live data table (Fig. 2), for easy sorting, filtering, new calculations, etc. The data can also be summarized with subtotals and graphs (Fig. 3) and can be exported to Excel, Access or other applications at any time.

Report Mining best enables managers and workers to immediately utilize their business knowledge. For example, Report Mining tools leverage a manager's new knowledge of the company's accounting reports; transaction reports; inventory reports, etc., as well as how the data within these reports is used to accomplish specific business processes. As a result, Report Mining tools typically offer a dramatically faster learning curve than database-focused business intelligence solutions.

Report Mining with Monarch not only serves as a means to convert text-based reports and PDF files into data, but also facilitates interactive analysis of that newly created data by the end user, such as:

- Sort and filter data
- Add new calculated fields of data, using formulas and functions
- Produce summaries of data, with subtotals, grand totals, and automatic graphs
- Open multiple copies of the same report in one Report Mining session for trending and other analysis (such as analyzing three monthly reports at once to perform a quarterly analysis)
- Combine data from reports with data from another sources, such as spreadsheet, database files, ODBC data sources, etc.
- Export desired data to MS Excel, Access, PDF, and other applications anytime

Managers and workers often comment, "All of the data I need is buried somewhere in our paper reports. If only there was some easy way to get at it." That "easy way" is Monarch.

Monarch Desktop Report Mining in Action

Over 400,000 users worldwide use Monarch and Monarch Pro to easily transform reports, PDFs and other data sources into actionable data. Many of these users, spanning virtually all industries, have stepped forward over the years to share how Monarch has helped them achieve the kind of business success usually allotted to complex business intelligence solutions many times the price and complexity of Monarch.



From the Makers of Monarch™

Paramount Citrus

“The real benefit and value of Monarch lies in how it can easily harvest the data out of our report files, and present that data in a table format.”

“[Accounting] reconciliation and analytical work that used to take four, five or six hours is now done in ten minutes with Monarch!”

“Monarch is the key to transforming what used to be just another report into a gold mine of data.”

**Bobby Thomas,
Manager of Grower
Accounting**

Accounting & Financial Analysis Made Easy with Monarch

Any data-intensive accounting or auditing function can be dramatically expedited using Monarch, with no programming and no need for IT help. Accounting, auditing and finance professionals can save hours, even days, of time on repetitive projects, plus enable decision making using data mined from general ledgers, journals, agings and other reports.

Paramount Citrus, California's largest grower and packer of oranges, lemons and other citrus, uses Monarch to dramatically simplify complex reconciliations between the company's internal accounting reports and sales and receivables reports provided by Sunkist's computer system. “The pricing for some orders may have been revised, but for different reasons, these revisions may not appear later on [Sunkist] reports,” explains Bobby Thomas, Manager of Grower Accounting. “Matching such differences between Sunkist's reports and our own reports used to be very time consuming... like finding a needle in a haystack.”

This complex reconciliation work must also be performed frequently. “We [sell product] through Sunkist about eight times per month,” Thomas says. “That's a lot of paper to print, and a lot of time necessary to flip through many thick reports to find and reconcile differences, or manually key needed data into spreadsheets.”

“Thanks to Monarch, we are no longer printing our Sunkist and internal reports. We can open and view the report files on a PC using Monarch. This alone has resulted in major cost savings in paper and printing-related expenses. But the real benefit and value of Monarch lies in how it can easily harvest the data out of our report files, and present that data in a table format. [Accounting] reconciliation and analytical work that used to take four, five or six hours is now done in ten minutes with Monarch!”

“My advice to other organizations is to start thinking of your reports as mini-databases, not just as stacks of paper. Monarch is the key to transforming what used to be just another report into a gold mine of data.”

Monarch for Manufacturing & Distribution

Manufacturers and distributors running SAP and other ERP systems have many options to access data to perform needed analysis and enable informed decision making. But despite the numerous business intelligence solutions available, managers and workers often opt for the easiest solution to acquire ERP data for easy analysis and export to Excel: using Monarch to mine data from the ERP system's large library of existing reports.

New Jersey-based manufacturer Truarc Company LLC uses Monarch to mine and analyze data from the company's existing ERP reports. Before Monarch, Truarc needlessly printed thousands of report pages annually, often to external auditor requests for information. “We used to run a 300 page report just to get certain subtotals as backup for a particular monthly journal entry,” says Bill Ferris, VP Finance. Truarc's auditors readily accepted data mined from the company's reports using Monarch. “Monarch helped us avoid...additional hefty auditing fees,” said Ferris.

“We have also used [directly accessed] some data from our production database,” says Ferris, “...but [sometimes] these data queries never reconciled to the totals shown on the existing reports. We found the database queries were somehow not picking up certain database tables needed to match the totals.”



From the Makers of Monarch™

Truarc Company LLC

“Monarch really came to the rescue to dramatically simplify our annual audit as well as general accounting processes. We are now putting Monarch to use on a regular basis to ensure [highly efficient] manufacturing and inventory management. Best of all, this improved ability to access and analyze our [ERP] data is brought to us with no programming and no live connections to the production database.”

Bill Ferris, VP Finance

“It did not make sense for us to [use a different BI tool] reinvent the wheel of [our existing] aging and inventory reports. Instead, we can just run the reports, which we know are right, and mine the data directly using Monarch.”

Monarch has also aided Truarc with complex cost accounting work. “We find it very difficult to determine how much labor and overhead is being applied to each individual job,” says Ferris. The needed data by job exists, Ferris explains, “but it is buried within our Shop Order Cost Variance and WIP Report...several hundred pages, typically, with data literally all over the page.”

“We now use Monarch to mine the data from that report, analyze and filter the data by job, to identify those jobs in which we incurred costs beyond standard levels, and how to keep costs down in the future.”

Ferris concludes, “Monarch really came to the rescue to dramatically simplify our annual audit as well as general accounting processes. We are now putting Monarch to use on a regular basis to ensure [highly efficient] manufacturing and inventory management. Best of all, this improved ability to access and analyze our [ERP] data is brought to us with no programming and no live connections to the production database.”

Monarch Accesses Data that Other Solutions CANNOT Access

Surprisingly, Monarch enables easy acquisition and analysis of certain data that is virtually *impossible* to obtain using *any* other data tool. “Many of our [ERP system] reports contain complex calculations generated [only at report runtime],” says Karl Danielson, Divisional Director of Material Management for Kentucky-based Norton Healthcare.

“For example, our Inventory Turns report includes layers of complex FIFO (First In First Out) inventory calculations. [Many other ERP reports] also contain numerous complex calculations. These calculations are generated [only] when the report is run; they do *not* exist as actual data within the [ERP] database.” Danielson noted that it would be virtually impossible to replicate the same calculations using a BI tool or report writer.

“Fortunately,” Danielson says, “Monarch easily mines the data from these reports, including all the complex calculations. Managers and workers get detailed inventory and other data, with no burden on the IT department.”

“Monarch fully leverages our investment to provide access to all [ERP based] data, including complex report-based calculations, without programming,” Danielson adds. “I can’t imagine working without it.”

Columbia Bank, based in Tacoma, WA, was in a similar boat with many of its standard reports provided by its core processing system. “Many of our banking reports have calculations that don’t exist in the underlying database,” says Jeff Rademaker, Internal Auditor. “These calculations are [only] part of the report itself. For example, the bank’s Deposit Trial Balance report contains many data fields which are calculated [only] when the report is run. With audit software or a report writer, it would be necessary to manually rebuild all of the calculated fields with formulas and functions to try to match the original report!”

“Thanks to Monarch, we get [all] the data we need from the [standard] reports we have already bought and paid for, with no need to ‘rebuild the wheel,’ adds Frank Slepko, Internal Auditor. “With Monarch,



From the Makers of Monarch™

Advanced Medical Billing

“Any healthcare organization that is sick of paper-based reporting, tired of accumulating piles of avoidable claim denials, and fed up with constant rekeying of data into spreadsheets should get Monarch Pro now,” Toth says. “I suggest every healthcare organization should make Monarch a software standard just like Microsoft Office.”

Scott Toth,
Vice President

auditors and accountants don't have to double as database experts to get the data they need to identify errors or possible fraud.”

Monarch for Healthcare

Monarch may also well be the simplest and fastest solution to discover new efficiencies in healthcare financial management and operations. “We have never had more control of our business. We are maintaining the highest efficiency ever, *and it is 100% attributable to Monarch Pro*,” says Scott Toth, Vice President for Advanced Medical Billing, Inc., a Connecticut-based provider of medical billing outsourcing services.

Toth and his colleagues have used Monarch on behalf of their hospital clients for less than one year, and yet have already achieved significant business benefits across the entire spectrum of healthcare financial management. For example, Toth says, “We have also gained a big boost in efficiency since implementing Monarch Pro, which can mine data from PDF files. Medicaid, Medicare, and Blue Cross-Blue Shield all provide insurance remittance reports online, in PDF and text format. Instead of printing out stacks of Explanations of Benefits (EOBs), Monarch Pro now easily mines PDF and text [files]. Monarch has transformed our incoming PDFs and text files into a powerful new data source.”

“Any healthcare organization that is sick of paper-based reporting, tired of accumulating piles of avoidable claim denials, and fed up with constant rekeying of data into spreadsheets should get Monarch Pro now,” Toth says. “I suggest every healthcare organization should make Monarch a software standard just like Microsoft Office.”

► Distributed (Server-Based) Report Mining: Enterprise Information Delivery Made Easy

Monarch Report Mining technology has also been extended to the server, taking the power of Report Mining from personal productivity on the desktop to an even higher level: *Distributed Report Mining*, a powerful solution providing automatic enterprise-wide Report Mining, data mining, and automatic delivery of the right information in the right format to the right person at the right time. Datawatch offers the benefits of Distributed Report Mining through its Monarch Data Pump server software.

While Monarch is a PC-based personal productivity tool, Monarch Data Pump (MDP) resides on a Windows server, *automatically* mining and customizing data from incoming reports, PDF files, spreadsheets, databases and more, and *automatically* delivering data to managers and workers with no action required on their part. MDP produces data in a wide variety of formats, including Excel, Access, PDF and more. MDP then delivers customized data files via email, to a desired file folder, copies files to document repositories such as MS SharePoint, and more.

MDP can also rapidly upload and update databases, such as SQL Server, Oracle and DB2. This makes MDP a powerful ETL tool, using data mined from reports with business rules already applied—instead of raw data from production databases—eliminating much of the risks inherent within the critical ETL process, and ensuring the population of data warehouses and marts with clean, accurate data.



From the Makers of Monarch™

Santa Clara County

Several hundred Datawatch|ES users across the county "can view their reports online (and also) extract all of the data from their reports with one click," says Lorraine Leipold, Sr. IT Project Manager.

"Now they are no longer working with a report, they are working with data, with no re-keying and no programming! They can export the data to Excel at anytime, and as an option, some Datawatch|ES sorts and filters have been set up to provide additional functionality within Datawatch|ES. We found that the ability of Datawatch|ES to easily and automatically bring report-based data into Excel made the Datawatch solution preferable over alternative solutions."

**Lorraine Leipold,
Sr. IT Project Manager**



From the Makers of Monarch™

A major, global petroleum company recently turned to MDP as its data ETL solution to easily populate a data warehouse with ERP data sources from SAP and other legacy systems. This successful project was managed by one of the largest US systems integration/consulting firms.

The project manager explained to Datawatch that the client needed to complete quarterly asset accounting reports required by a regulating government agency. A data warehouse was necessary to compile the required asset depreciation and transaction data. The majority of the data resided in existing SAP asset reports, with other data in legacy systems.

Previously, the accounting team spent considerable man-hours manually reformatting SAP's standard "stacked column" reports, with multiple fields of data "stacked" in the same column, into separate columns of data. With MDP, the team was able to mine the data from the existing SAP reports, and quickly and easily produce a proper view of the data needed, eliminating the manual work and making additional calculations easy to perform. This customized data was then exported by MDP to the data warehouse. MDP is also being used to automate the process of receiving and mining SAP reports on a monthly basis, pushing the data mined from the reports directly into the data warehouse and triggering Oracle PL/SQL database procedures to perform additional data processing tasks.

The project manager tells Datawatch that without MDP, the options for getting data out of the reports in a usable format would have involved considerable custom programming, such as developing a custom SAP program to load data directly from SAP into the data warehouse.

In the words of the project manager, "MDP was considerably less expensive than other ETL tools we looked at, and could be instrumental in a number of similar scenarios to mine existing SAP reports to get the data into a more user friendly format."

Report Mining for Enterprise Business Intelligence

Datawatch|ES uniquely leverages existing reports as a source of web-enabled enterprise business intelligence, providing web enabled reporting, online data analysis, MS Excel integration and more, at a fraction of the complexity and cost of other solutions.

Unlike other BI systems, Datawatch|ES leverages existing report output, creating a web-enabled archive, for easy storage and distribution and easy online analysis and export, with no programming and no need for live database connections.

Santa Clara County, California selected Datawatch|ES to achieve several critical informational goals at once: enable programming-free, web-enabled business intelligence, provide easy report distribution, and put an end to previously-noted county-wide re-keying of data from reports into MS Excel or Access.

Several hundred Datawatch|ES users across the county "can view their reports online (and also) extract all of the data from their reports with one click," says Lorraine Leipold, Sr. IT Project Manager.

"Now they are no longer working with a report, they are working with data, with no re-keying and no programming! They can export the data to Excel at anytime, and as an option, some Datawatch|ES sorts and filters have been set up to provide additional functionality within Datawatch|ES. We found that the ability of Datawatch|ES to easily and automatically bring report-based data into Excel made the Datawatch solution preferable over other alternative solutions."

In addition to accounting reports, Santa Clara County also stores and distributes HR and payroll reports produced by the county's PeopleSoft system, says Kim Ruebenson, Management Analyst, responsible for reporting for Santa Clara County's Human Resources Payroll Project (HaRP). "Like the county's accounting reports, we used to print, burst and distribute many different HR and payroll reports. Most of the reports are very large: our bi-weekly payroll reports are typically 2,000-3,000 pages long."

"Our PeopleSoft users see the biggest benefit of Datawatch|ES in terms of immediate access to information," says Kim. "They can quickly and easily answer HR and payroll-related questions from managers and executives. With no new database programming, Datawatch|ES provides easy to use, easy to analyze PeopleSoft data. Our users now have the ability to be far more productive, and are very happy!"

Monarch|RMS (Report Mining Server) provides the same web-based reporting and analytics as a "bolt-on" solution for any existing report/document management system already in place.

► **Conclusion: Report Mining Solutions 1, Chindogu 0**

Intuitive, user-friendly, flexible, consistent, and rapid ROI are attributes that all enterprise managers would love to apply to their IT strategies. Report Mining technologies fit this model well. Report Mining solutions require no reprogramming of existing reports or data and is technology easily understood by end users and IT personnel alike. Plus, since Report Mining utilizes existing enterprise report output; it fully complements those operational systems already in place.

These key attributes of Report Mining offer a very high probability of business success and very low risk of failure; a compelling risk/reward ratio that few other business intelligence solutions can promise.

Organizations are well advised to actively pursue the clear business benefits of Monarch Report Mining solutions, whether deployed tactically on desktop PCs, implemented as an enterprise-wide information delivery solution, or even deployed across the enterprise via the web.

Such efforts will also help to sidestep the potential "chindogu" of other much more complex business intelligence solutions, freeing the enterprise's IT resources for more important endeavors, like debugging that virtual reality toothbrush.

► **Endnotes**

- 1 Michael R. Bloomberg, "Simply Irresistible," Bloomberg Personal, April 1998, p. 16.
- 2 Rick Whiting, "Analysis Gap," InformationWeek, April 22, 2002.
- 3 "The Three Biggest Misconceptions About SAP Reporting - And How to Dispel Them," SAP Professional Journal, May/June 2002.
- 4 Robert S. Boyd, "Study Details Data Explosion Paced by Computers, Research," Houston Chronicle, February 22, 2004, p. 9.



From the Makers of Monarch™

⁵ From the Datawatch/Santa Clara County user story: "With Datawatch|ES, Santa Clara County Reduces Paper-Based Reporting and Starts Reaping the Benefits," available from the Datawatch web site.

⁶ Rick Whiting.

⁷ Sharon Gaudin, "Data Mart Dynamics," Computerworld, September 22, 1997, p. 99.

⁸ Rick Whiting.

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