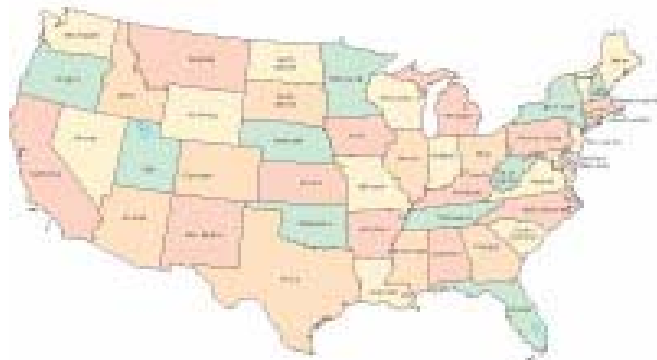


ROI+

Return on Investment Return on Information

*How Information-Sharing Solutions and
Advanced Analytical Capabilities are
Helping State Governments Realize
Financial, Operational, Program, Policy, and
Intangible Benefits
in the Health & Human Services area*



A 2004 Public Sector Report







A Note on the Purpose of This Document

This document is intended to demonstrate the benefits of information-sharing solutions and advanced analytical capabilities for state agencies as they wrestle with the best way to control costs and deliver better service in the Health and Human Services (HHS) area.

While we *talk* about information technology solutions in this paper, **we want to emphasize that the document is *not* overly technical in nature, nor do readers need a technology background to benefit from its contents.** All HHS management staff should find this document helpful. We recognize that the issue is not the technology, but about ways you can reduce costs, maximize revenue, and provide better service to citizens.

This paper is divided into two major sections: a general overview on the importance of ROI and a section of **ROI+** (Return on Investment & Return on Information) results that Bull solutions have helped customers to achieve.

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INTRODUCTION

R-O-I. It's a short, three-letter acronym that carries a great deal of weight when it comes to information technology investments, particularly those in the area of information-sharing solutions and advanced analytical capabilities.

Nearly every business executive, agency head, or CIO in the private and public sector talks about the importance of ROI. Yet, the actual description and definition of ROI remains elusive. Is it strictly the payback on an investment? Is it operational savings? Or cost-avoidance? Or all of the above – and more?

In our discussions with **Public Sector leaders**, we've found that **hard-dollar savings** and **revenue generation** are critical – regardless of where they come from – but nearly equally as important are the **operational, policy, and intangible benefits** that agencies and departments realize from the rapid, comprehensive, and advanced analysis of enormous volumes of information. This is particularly true in the **Health and Human Services (HHS)** sector, which is usually the largest or second largest (next to education) area of spending for most states.

Bull Services defines **ROI** as **ROI+**, with the “**plus**” referring to both **Return on Investment** and **Return on Information**. Both are important and both are necessary to HHS agencies looking to reduce costs and meet the needs of the constituencies they serve and the taxpayers who fund them.

This document examines the importance of ROI in the area of information sharing and advanced analytics, and examples of **ROI+** results among Bull Services' HHS customers.

For additional information on this document and on Bull Services solutions, contact us at **866-ROI-BULL (866-764-2855)** or sharon.fahy@bull.com.

ROI+
Return on Investment
Return on Information



ROI+
Return on Investment
Return on Information



Part I:

An Overview of ROI

and the

ROI Benefits of
Information-Sharing Solutions
and Advanced Analytic Capabilities

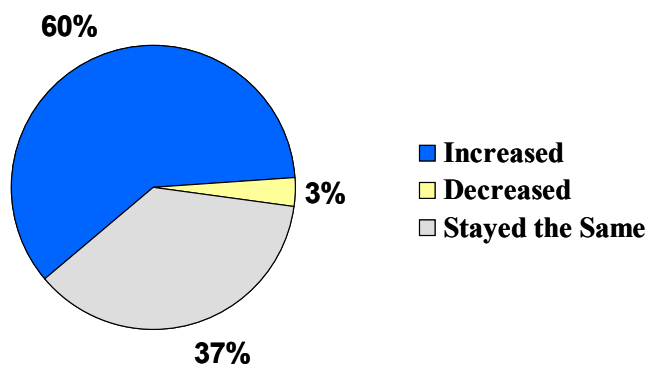
The Growing Importance of ROI

Recent studies have verified the **growing importance of ROI** in information technology investments.

The chart at right shows the growing pressure on department heads and CIOs to demonstrate ROI – pressure that can come from the CEO or CFO in the commercial world, or the Agency Director, Legislature, Budget Office, or Governor in the public sector.

The chart below shows how frequently ROI is calculated and under what circumstances. “When IT purchases are made as a strategic investment” is still the leading reason ROI calculations are made, but in second place is the answer “whenever we make an IT investment.”

Has the pressure to demonstrate ROI increased or decreased in the past 12 months?



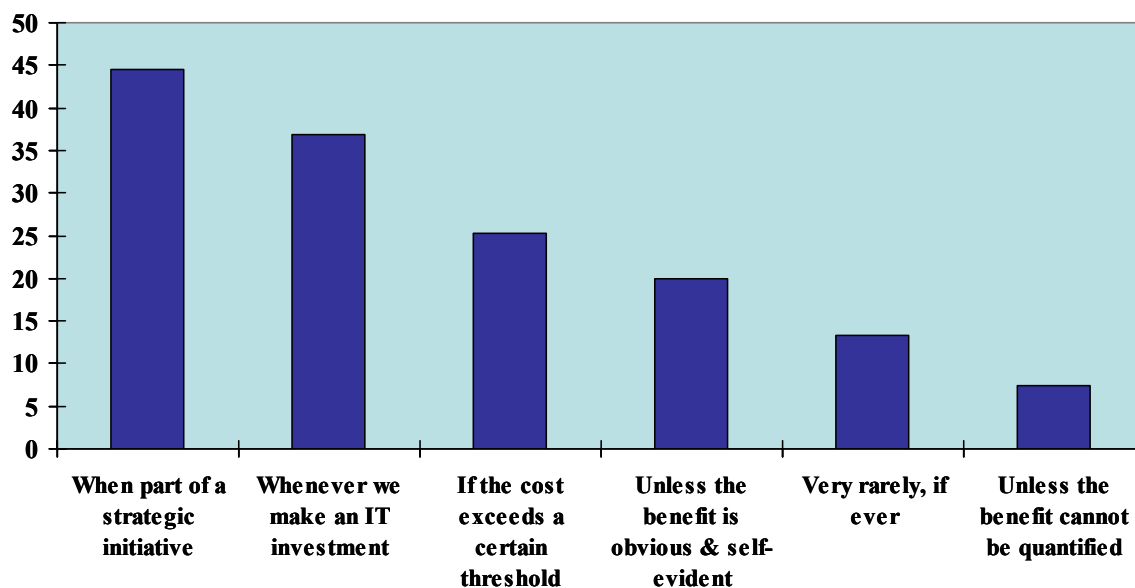
Source: The CIO Insight Research Study:ROI, October, 2003

Select the statement(s) that describe your company’s practice when calculating the ROI (monetary value) of an IT investment

% responding

(multiple responses allowed)

We Calculate ROI...

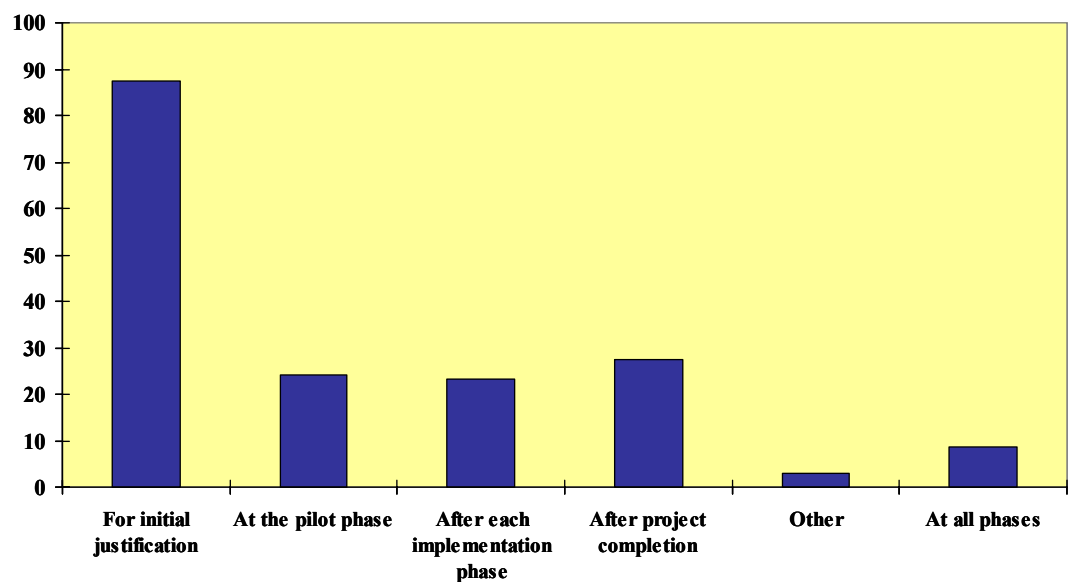


Source: The CIO Insight Research Study:ROI, October, 2003

Bull knows that ROI is important “Early and Often”

At what point(s) in the execution of an IT investment do you calculate ROI?

% responding
(multiple responses allowed)



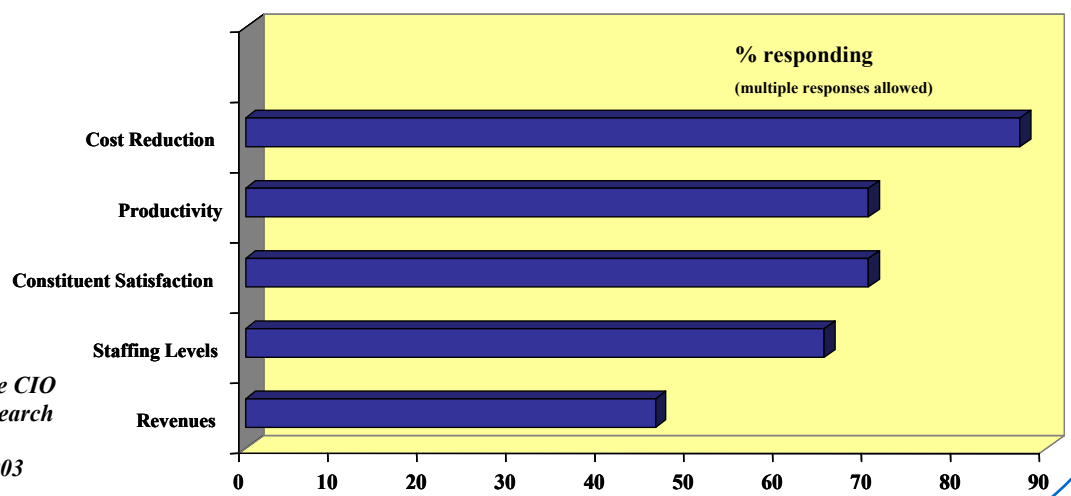
Source: The CIO Insight Research Study:ROI, October, 2003

Bull Services knows that ROI is important to you “early and often.” **And you are not alone.** The **top chart** shows that **87%** of department heads need ROI calculations for the initial justification of their project.

Bottom chart shows that CIOs and department heads quantify a number of key benefits to measure the value of their investments, with “**cost reduction**” leading the way. **Note also that constituent satisfaction also ranks highly.**

What kind of benefits do you attempt to quantify when measuring the monetary/business value of IT investments?

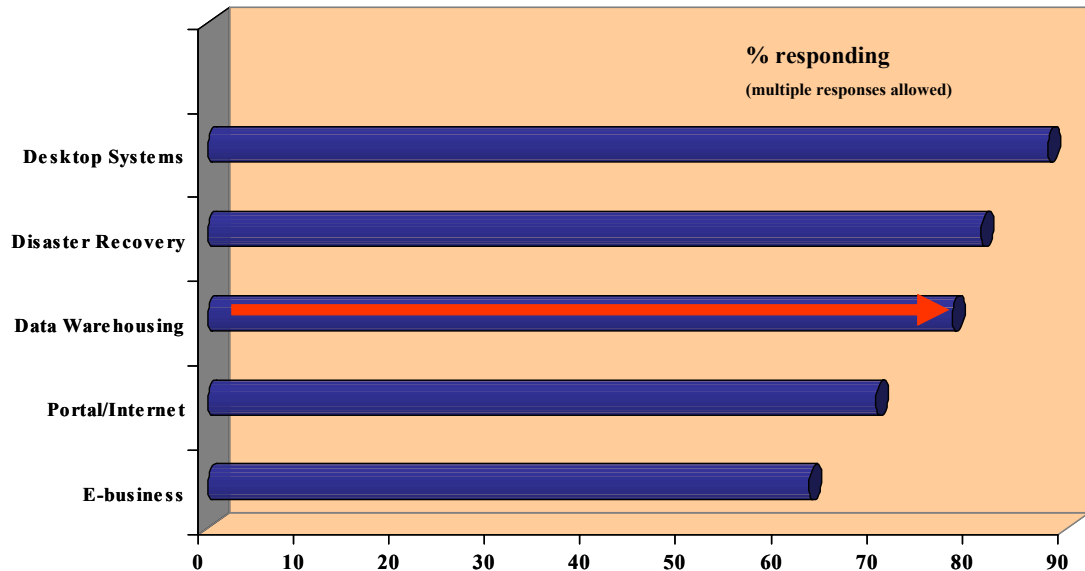
Quantifying benefits



Source: The CIO Insight Research Study:ROI, October, 2003

Data Warehousing – an information-sharing technology – Consistently Scores High on “ROI-Meter”

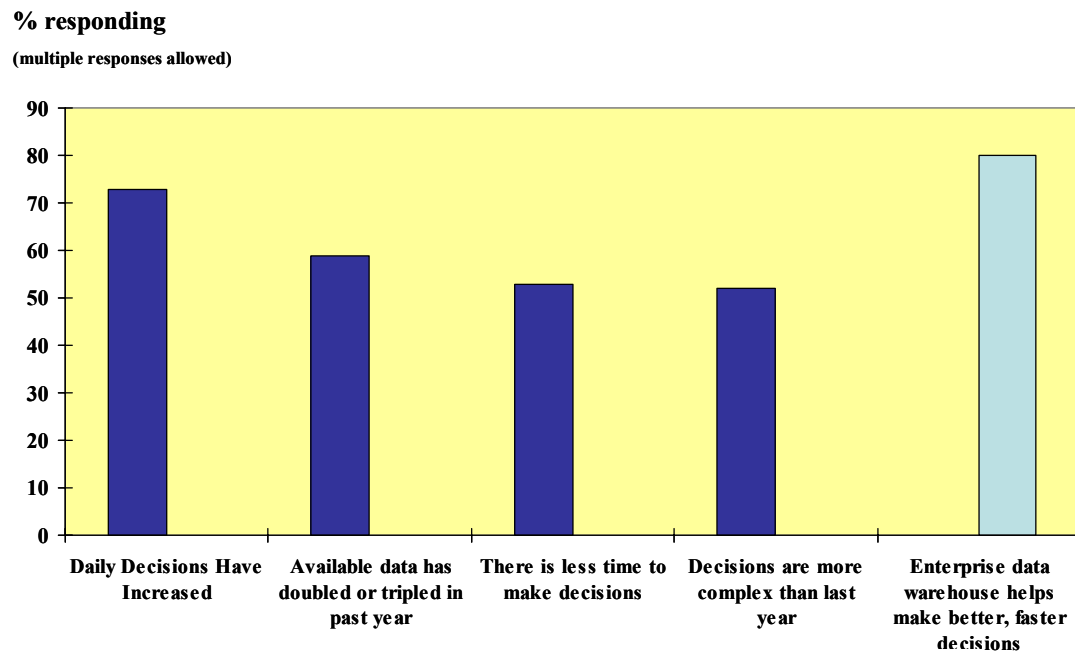
Indicate which technologies realize ROI that meets or exceeds expectations



Source: The CIO Insight Research Study:ROI, October, 2003

Data Warehouse solutions, which provide organizations with decision support and business analytics capabilities, consistently rank high in ROI. Top chart shows that 80% of survey respondents said data warehousing provided strong ROI. Below, 80% of the senior executives surveyed related how an enterprise data warehouse could help with the **crush of daily decisions**.

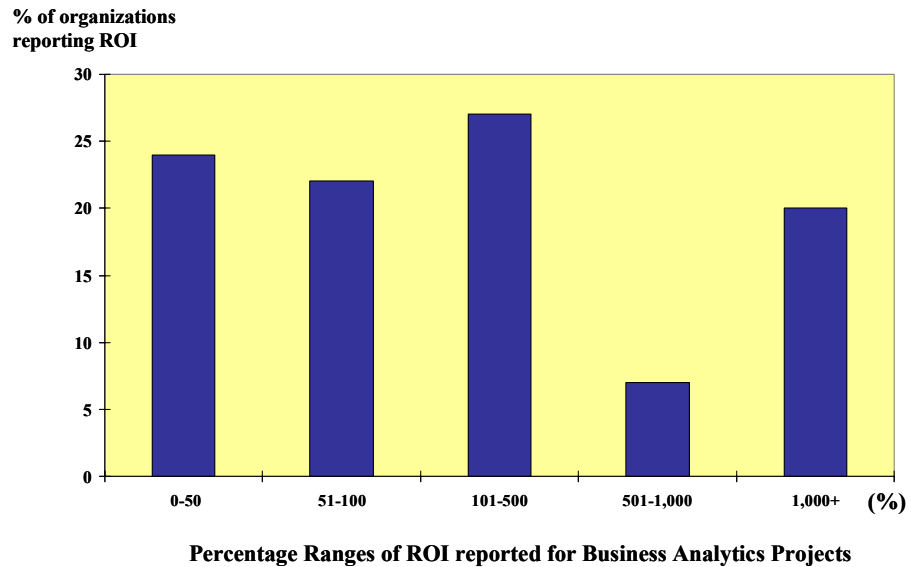
As an executive, which of the following statements apply to you?



Source: NCR Teradata 2003-2004 Report on Enterprise Decision-Making

The ROI Power of Advanced Analytic Capabilities

Overall Sample of ROI Ranges for Business Analytics Projects



Source: IDC, 2002 "The Financial Impact of Business Analytics," December 2002

"Investments in analytics are providing enormous benefits to [organizations] in a wide range of industries and geographies...[those] interviewed for this study consider [business analytics] either a necessary cost of business or a critical factor in their plans for success..."

-- IDC Study, *The Financial Impact of Business Analytics*

Organizations that implement **advanced analytics** see **benefits quickly and dramatically**. This chart shows the percentage of organizations reporting ROI and the ROI percentage they have achieved. For example, while 46% of the organizations generated ROI of 100% or less, **54% generated ROI of more than 100% (including 20% who reported ROI in excess of 1,000%)**.

"Intangible Benefits" are also important in overall ROI discussion

While "hard dollar" savings are critical when measuring the ROI of information-sharing solutions and advanced analytics, many executives believe that the intangibles – such as constituent satisfaction and better service – are often considered more important. **Bull Services** believe this is where **ROI+** comes into play: **Return on Investment AND Return on Information**.

According to a survey of 540 professionals, consultants, IT managers, and users conducted by the **Data Warehousing Institute**, intangible benefits of business intelligence outrank more measurable benefits like time or cost-savings. Four of the top five most valued benefits are intangible:

- better information
- better strategies and plans
- better tactics and decisions
- more efficient processes.

PricewaterhouseCoopers paints the value of high quality data in both "intangible" and financial terms: "[Organizations] that manage their data as a strategic resource and invest in its quality are already pulling ahead in terms of reputation and profitability from those that fail to do so." **More on Bull Services' ROI+ philosophy appears on the next page.**

Bull knows that in the Public Sector, “all forms” of ROI+ are important

Bull Services recognizes that Public Sector ROI can be measured in many ways:

- ‘hard dollar’ savings & cost avoidance
- revenue enhancement
- constituent satisfaction
- improved productivity and operational enhancements
- better and faster policy decision-making
- intangible benefits

ROI+
Return on Investment
Return on Information

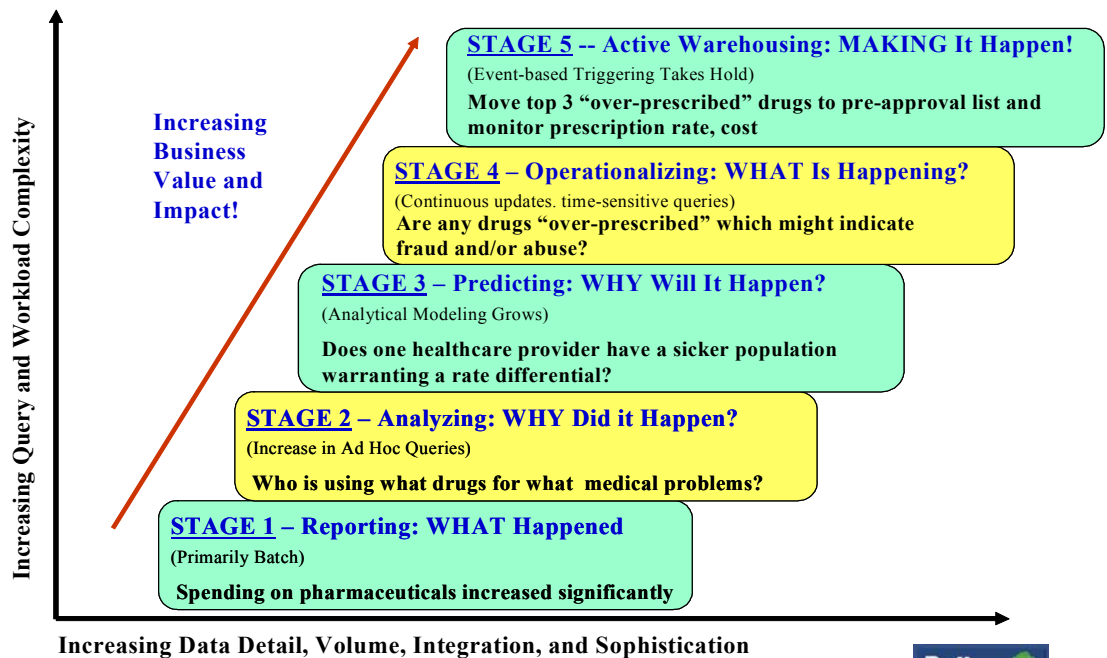


Again, that’s why we refer to ROI as **ROI+**, which means **Return on Investment and Return on Information**. Further, we know from experience that information-sharing solutions and advanced analytics capabilities – often with a data warehouse as a backbone – can provide **increasingly sophisticated analysis** that can truly help enhance **ROI+** (see chart below).

The more comprehensive your information-sharing and analytical capabilities are, the better your ROI+ results will be

HHS “Information Evolution” in a Data Warehouse Environment

Chart shows how data warehouse can help HHS agencies **with increasingly more sophisticated analysis**, from simple reporting and analysis of what did happen, **to predicting what will happen and actually influencing results with the solution. This almost certainly improves ROI+.**



Summary of ROI overview and benefits

- ROI is growing in importance and is **considered a major factor when organizations make IT investments.**
- **Nearly 90% of organizations calculate ROI for the initial purchase justification**, and a growing number of organizations measure ROI throughout the process – at the pilot phase, after each implementation phase, and after the project is completed.
- **Cost reduction, productivity, and constituent satisfaction** are the leading benefits that department heads quantify when measuring the value of their IT investments.
- Because decisions are made more frequently and have greater impact, **data warehousing and decision support solutions consistently meet or exceed expectations** of department heads and CIOs.
- The ROI of advanced analytic projects also ranks high among department heads; **54% of survey respondents said their analytics projects generated ROI of more than 100%.**
- **“Intangible Benefits” are clearly important in the ROI discussion.** These include: better information, better strategies and plans, better tactics and decisions, and more efficient processes.
- Bull Services believes that both a **Return on Investment** and a **Return on Information** are critical when measuring the value of an IT investment. We call this dual-return concept **ROI+**.
- Bull Services can help you **realize the full promise of ROI by achieving ROI+.**

Some examples on the pages that follow show how Bull Services' solutions have helped Public Sector agencies achieve ROI+.

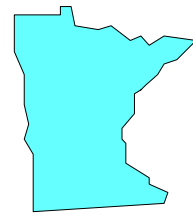
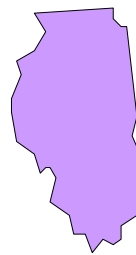
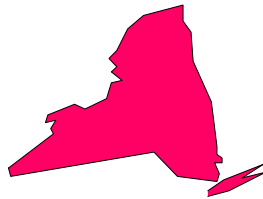
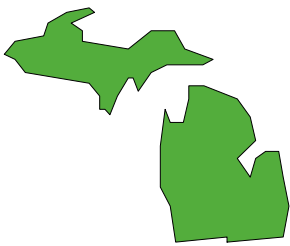


ROI+
Return on Investment
Return on Information



Part 2:

**Examples of how
Bull Services solutions
have produced ROI+ benefits for
HHS agencies in state government**





ROI+
Return on Investment
Return on Information



Michigan Department of Community Health (DCH) ROI+ Results

Department of Community Health (DCH) Programs

- Medicaid - Fee-For Service and Health Plans (HMOs)
- WIC (Women, Infants, Children)
- MCIR (Michigan Child Immunization Registry)
- MIHAS (Maternal and Infant Health Advocacy Services)
- PRAMS (Pregnancy Risk Assessment Monitoring System)
- Childhood Lead Poisoning Prevention
- BPCTS (Beneficiary Provider Contact Tracking System)
- Vital Records
- Newborn Metabolic and Hearing Screening
- Epidemiology
- Children’s Special Health Care Services (CSHCS)
- Aging
- Mental Health

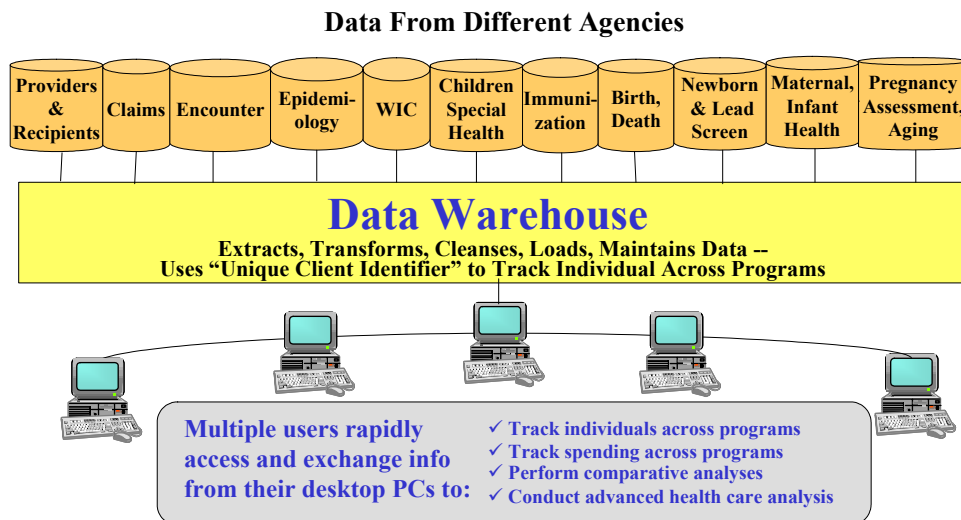
Until the DCH enterprise data warehouse, the state had no way to track costs and care associated with a single individual receiving benefits across multiple programs.

As the largest department in the State of Michigan, the **Department of Community Health (DCH)** is responsible for managing the delivery of health care services to **more than 1.2 million clients and overseeing an annual budget approaching \$10 billion.**

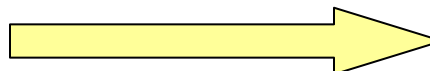
Many people derive benefits from more than one program, and **prior to the data warehouse, the state had no way of tracking a single individual receiving benefits across multiple programs.**

Now, **Bull’s data warehouse and our creation of a ‘unique client identifier’ enables DCH to track individuals and spending across programs – and to conduct advanced health care analysis.** This is considered one of the nations’s most sophisticated enterprise data warehouses – in fact, this **Bull/DCH implementation won the 2002 award for Enterprise Information Architecture from the National Association of State CIOs (NASCIO).**

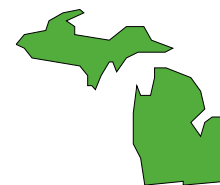
Data Warehouse Links Information from All Programs for Rapid Analysis



More DCH ROI+ Results



ROI+
Return on Investment
Return on Information



Michigan Department of Community Health ROI+ Results

The enterprise data warehouse has become **the critical tool to help MDCH improve its delivery of health care services**, determine which programs are most effective, detect fraud and abuse, reduce overall costs to taxpayers, and predict the state's health care needs and priorities for years to come. Here are a few ways information sharing capabilities provided by the data warehouse have helped:

- **Identification of coverage overlaps:** These are instances where individuals are obtaining similar or duplicate services from different programs. Reducing and eliminating these overlaps helps to deliver a higher quality of service for individuals and enhance opportunities for cost savings and/or additional federal funding.
- **Eliminating inappropriate payments and contacts:** For example, coordinating eligibility with lists of deceased residents is an important fraud issue.
- Enhancing the State's ability to **measure, analyze and improve the effectiveness of major program initiatives**, such as managed care and the use of prescription drugs by Medicaid beneficiaries.
- Enhance monitoring and evaluation of the **performance of managed care plans to encourage strong performers, and improve under-performers.**

ROI+ Highlights

- ✓ Data warehouse has helped DCH **double its identification of fraudulent Medicaid activity**
 - ✓ Medicaid **administrative costs have been reduced by 25%**
 - ✓ Michigan has gone from **'last to first' in child immunization rates** through county-by-county analysis made possible by the data warehouse
-
- ✓ **KEY ROI+ STAT: DCH estimates savings of \$75 million to \$100 million annually conducting advanced health care analysis with the data warehouse.**

ROI+
Return on Investment
Return on Information



Michigan Family Independence Agency **ROI+** Results

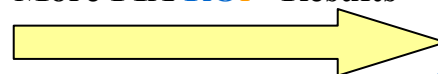
- ✓ One of state's **largest** agencies
- ✓ **Manages approximately \$4 billion in funds** for critical programs (food stamps, cash assistance, child support services, foster care)
- ✓ **More than 1 million people** – among Michigan's most vulnerable and many of them children – depend on FIA for life's necessities

The data warehouse from Bull Services:

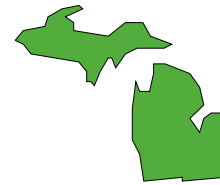
- ✓ **assists FIA in managing and cross-checking its food stamp and cash benefits program.**
- ✓ **helps FIA manage its Foster Care program.**
- ✓ **helps FIA manage the Michigan Children's Action Network (CAN), which links with education data, to help assess the needs of children, deal with immediate pressing issues, and recommend and implement an action plan.**



More FIA ROI+ Results



ROI+
Return on Investment
Return on Information



Michigan Family Independence Agency ROI+ Results

ROI+ Highlights

Food Stamps, Cash Assistance

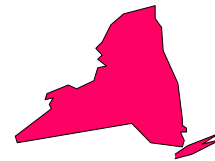
- ✓ Data warehouse helps analyze food stamps, cash benefits cases, **tracking nearly \$500 million in taxpayer dollars**
- ✓ **Warehouse validates, cross-checks Electronic Benefits Transfer (EBT)** processing vendor, providing the state with independent, accurate expenditure tally.
- ✓ System **improves tracking of fraud investigations** launched by Inspector General
- ✓ Data warehouse helps TANF population to **develop effective programs, avoid federal sanctions**

Foster Care Program

- ✓ Warehouse helps FIA develop a better understanding of **where foster care homes are needed**
- ✓ System helps analyze information from Children's Protective Services **to identify at-risk children**
- ✓ Warehouse and GIS mapping system help determine **where foster cases are distributed to allocate resources, and help ensure that children are placed in homes near their original neighborhoods and schools. This helps maintain stability and familiar surroundings for children, and increases opportunities for contact – and possible reuniting – with birth parents.**

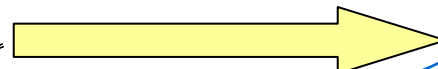
KEY ROI STAT:

FIA estimates **savings of \$33 million-\$42 million annually** through reduced fraud & abuse, avoiding federal sanctions, and receiving federal bonuses.

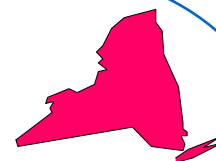


New York Department of Health ROI+ Results

- ✓ Bull Services developed and built the **largest Medicaid data warehouse in the country** for the State of New York's Department of Health.
- ✓ The warehouse helps DOH process and analyze **claims of more than \$41 billion**. The state processes more than **300 million claims per year for 3.5 million eligible participants** (2.3 million in New York City alone).
- ✓ The state uses the system to **track fraud & abuse, analyze program effectiveness, and deliver enhanced audit control**. DOH ran its **100,000th query** on the warehouse a year after it was operational.
- ✓ The warehouse is expected to be a key component in the State of New York's **goal to develop an "enterprise" view** of its HHS programs.



ROI+
Return on Investment
Return on Information



New York Department of Health ROI+ Results

ROI+ Highlights

(Note: These results have been achieved after just one year of the system's operation; additional benefits expected in future)

■ **\$44 Million:**

NY DOH used the data warehouse to identify **cost-savings of approximately \$44 million in 7 months by examining Medicaid expenditures for providers who had part-time clinics.** Using the data warehouse, DOH was able to compare providers' part-time clinic payments to their outpatient clinic payments. Through the implementation of an edit within the MMIS, outpatient clinic payments immediately declined.

■ **\$16 Million-plus:**

DOH used the data warehouse to **identify inpatient claims for recipients who are covered under a managed care plan.** The agency identified nearly 3,800 inpatient claims totaling more than \$16 million where the recipient was enrolled in managed care.

■ **\$5 Million-plus:**

Amount Data Warehouse will save DOH for **duplicate payments for "Family Planning Charge Back" claims for recipients in Managed Care Organizations (MCO).** With the data warehouse, this project is expected to recoup in excess of \$5 million in less than 6 months (vs. 2-3 years prior to the warehouse).

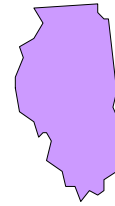
■ **\$1 Million-plus:**

Amount Data Warehouse helped DOH collect in **inappropriate outpatient clinic billings for "ancillary services."** Clinic rates are "all inclusive" rates, to providers who bill for ancillary services on the same day as a clinic visit are billing in appropriately. **An audit project examining this practice was prepared in 2-3 weeks (vs. several months without the warehouse).**

■ **Millions!**

DOH is saving millions of dollars since the **data warehouse now enables the agency to create its own audit samples within two hours, compared to waiting up to 8 weeks to send out for an audit sample.** This allows immediate action against fraudulent providers, and it keeps more than 100 state auditors focused on conducting audits, rather than waiting for audit samples.

ROI+
Return on Investment
Return on Information



Illinois Department of Public Aid ROI+ Results

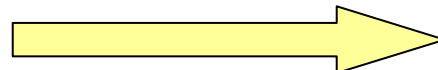
- ✓ One of State's **largest and most critical agencies, managing approximately \$8.6 billion in funds** (all sources, including federal)
- ✓ IDPA provides **medical services for the state's neediest citizens**, including children, under the Medicaid umbrella
- ✓ Data warehouse provides IDPA with the ability to conduct **in-depth analysis on the Medicaid program and maintain a single integrated Medicaid environment**
- ✓ The warehouse is used for:
 - Program analysis
 - Policy impact analysis
 - Quality of care analysis
 - Fraud and abuse investigation
 - Liability tracking
 - Budgeting
 - Hospital cost reporting
 - Provider rate setting
 - External and internal auditing

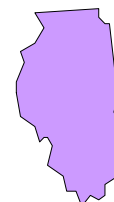
The IDPA data warehouse has become the critical tool to help the agency **improve its delivery of health care services, determine which programs are most effective, detect fraud and abuse, reduce overall costs to taxpayers, and predict the state's health care needs and priorities for in the years to come.**

The value of the warehouse was recognized when IDPA was named as a **Laureate winner from Computerworld and the Smithsonian Institution** for utilizing innovative technology.



More IDPA ROI+ Results





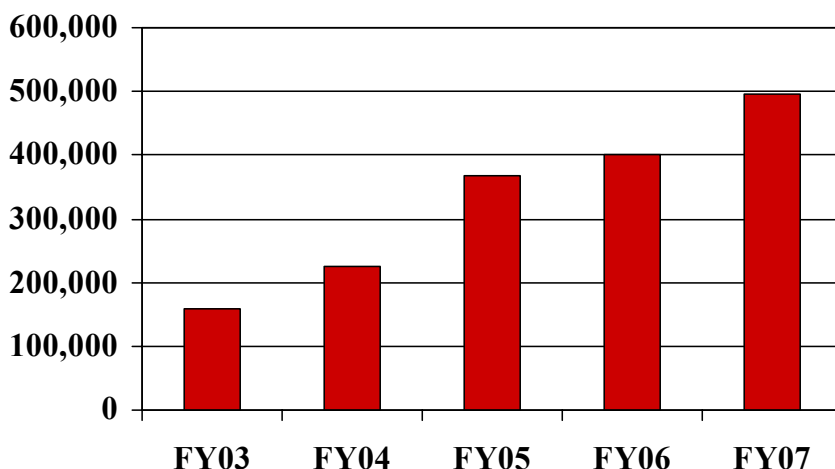
Illinois Department of Public Aid ROi+ Results

- ✓ **Identification of over-prescribed drugs has resulted in potential savings of more than \$15 million annually**
- ✓ **Identification of hospital DRG upcoding has saved \$6 million annually**
- ✓ **Identification of \$4.5 million in transportation fraud**
- ✓ **IDPA has identified \$1 million in new admissions vs. hospital transfers**

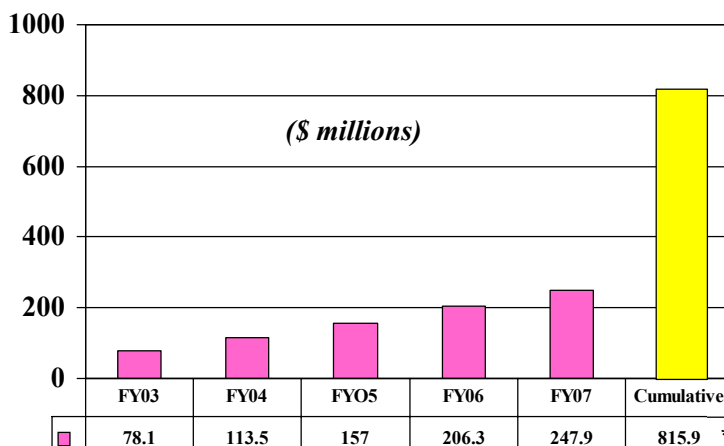
In addition, the warehouse helped IDPA conduct in-depth analysis to obtain a federal waiver to fund a senior citizen prescription drug benefit for low-income seniors, called **SeniorCare**:

- ✓ Program covers 225,000 seniors and growing (see **top chart, right**)
- ✓ Advanced drug coverage expected to reduced long-term medical costs.
- ✓ In FY 2003 alone, IDPA received \$78 million in federal matching funds for SeniorCare, a figure that will increase to \$113 million in 2004.
- ✓ IDPA projects that, cumulatively, federal funds for SeniorCare will total \$815 million through FY 2007, the last year of the waiver (see **bottom chart**).
- ✓ The net benefit to the State of Illinois for the life of the program – even once the cost of a growing SeniorCare population is calculated – is expected to exceed \$109 million.

SeniorCare Projected Enrollees

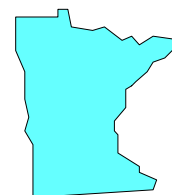


Senior Care Federal Matching Funds (50% match)



* Includes \$13.1 million in FY02

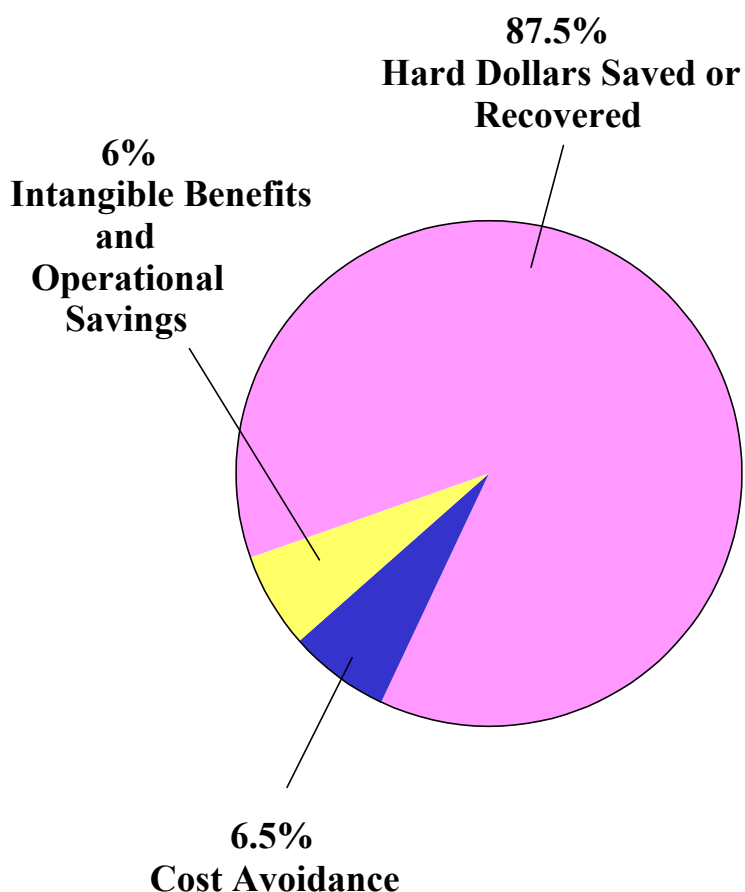
ROI+
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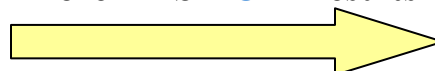
Minnesota Department of Human Services ROI+ Results

A Bull data warehouse helps the **Minnesota Department of Human Services (DHS)** manage all of its medical welfare programs. The agency uses the data warehouse to **track Medicaid providers, serve recipients, track and reduce fraud and abuse, provide information to the Legislature, and more proactively make decisions about policy and operations.** Moreover, Minnesota made its **first query** on the Bull-implemented data warehouse **just 3 months after the project started.** Phase 1 was completed in **only 6 months.** Speed of implementation is an important ROI factor in itself.

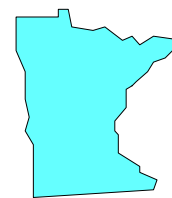
All this, and the warehouse has also **enabled DHS to save Minnesota taxpayers an estimated \$40 million in the past 5 years in hard dollars, cost avoidance, intangible benefits, and operational savings – with the vast majority of that amount coming under the category of “hard dollars saved or recovered”** (see chart at right).



More DHS ROI+ Results

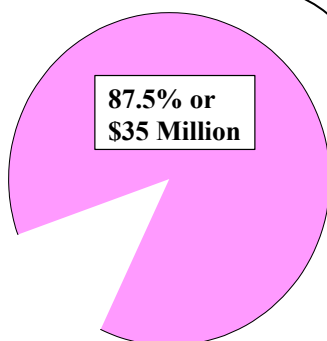


ROI+
Return on Investment
Return on Information



Minnesota Department of Human Services ROI+ Results

Examples of Hard Dollars Saved or Recovered

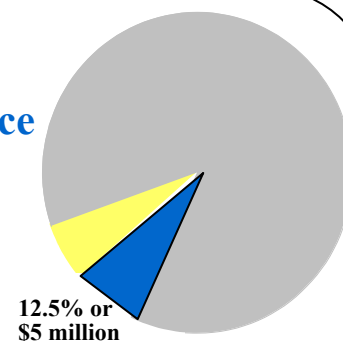


\$15 million - \$25 million per year:
Using the data warehouse to find and fix mistakes in coding eligibility types.

\$9.4 million:
DHS received a federal welfare reform (TANF) “high performance” bonus based on a series of reports generated by staff using the data warehouse.

\$1.2 million:
Data from the warehouse was used to provide pharmacy claims information and metadata to support a lawsuit with a major drug company. The state realized dollar amount upon settlement, and its efforts led the way for other states that also realized savings.

Examples of Cost Avoidance and Operational Savings



\$1.4 million:
Special pharmacy and medical supply recoveries associated with identification and capture of duplicate handling fees incorrectly billed on partial filling of prescriptions.

\$1.2 million:
DHS needed to redefine its “Separate State Program” and resubmit a report to the federal government in a very short time frame in order to comply with a negotiated agreement. Data warehouse users were able to generate the report needed to satisfy the federal government. Without the data warehouse, DHS would not have been able to respond within the necessary time frame. As a result, Feds forgave \$1.2 million in penalties.

Summary

Bull Services does more than talk about ROI in the **Health and Human Services** space. Our solutions deliver **ROi+** to some of the largest HHS agencies in the country – tangible, quantifiable **Return on Investment and Return on Information**.

We can design and deliver a solution for you that we believe can produce similar results. We're experts at doing it, and doing it quickly (the speed of a quality implementation is, by itself, an **ROi+** benefit).

We also do it right. **Our customers obviously helped us compile much of the information in this report – they are willing to work with us, and permit us to reference them, because they are highly satisfied with our solutions.** Bull Services' solutions produce results and benefits that our customers can demonstrate to agency heads, the Governor, the Legislature, taxpayers, and their clients.

It's not about the technology. It's not even about what the technology costs. The questions our customers ask are:

“What’s my Return on Investment?”
“What’s my Return on Information?”

We've answered those questions for them. Let us answer them for you. Let us help you control costs, deliver better service, and achieve

ROi+.

Our contact information is on the next page.
Let Bull Services show you how.

ROi+
Return on Investment
Return on Information



ROI+

**Return on Investment
Return on Information**

*Let Bull Services show you how with
information-sharing solutions
and advanced analytics*



For additional information on this document and on Bull Services solutions, contact us at **866-ROI-BULL (866-764-2855)** or **sharon.fahy@bull.com**.

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