



Office of the State Auditor
Suzanne M. Bump

Making government work better



Powering Up

Getting Started With Data Analytics

Suzanne M. Bump,
Massachusetts State Auditor

@MassAuditor

July 18, 2017

For every effect, there is a root cause. Find and address the root cause rather than try to fix the effect, as there is no end to the latter.

- anonymous

Performance Auditing

- ◎ Focus on areas of agency non-compliance which directly impact either service delivery or spending
- ◎ Identify not just areas of risk in need of remediation, but root causes of system failures or the wasting of tax dollars

Optimize Use of Resources

Conduct Risk-Based Audits

Maximize Use of New Technologies by All Staff

**Establish Standards for Timely Completion of Audits,
Monitor & Enforce Compliance**

**Improve Cross-Unit Collaboration Through Workgroups
& Technological Tools**

**Collect Data Within Each Unit to Quantify Outputs,
Identify Opportunities for Savings and Efficiencies, and
Rate Success**

New Data Analytics Tools

- ◎ **Advanced Analytics Platform**
- ◎ **CIW AAP Dashboard**
- ◎ **Rules Based Risk Engine**



Advanced Analytics Platform

The screenshot displays the Absolute Insight software interface. At the top, the user is logged in as 'Admin Administrator' and is in the 'Training' environment. The main navigation bar includes 'Get Started', 'Data Repository', 'Analysis', 'Dashboard', and 'Audit Log'. Below this, there are tabs for 'Ranking', 'Modeling', 'Charting', and 'Model Library'. The 'Modeling' tab is active, showing a workflow titled 'ExeM-2-Outlier_Detection'. The workflow consists of two main components: a 'Medical ...' data source (represented by a database icon) and an 'Outlier ...' algorithm (represented by a folder icon). The data source is connected to the algorithm, which is then connected to an 'Output Port'. The left sidebar contains a list of 'Artifacts' including 'CLC', 'CLR', 'Claim and Encounter Duplicates', 'Decision Tree Predict (Spark)', and 'Doc Visits'. The right sidebar shows a list of 'Algorithms' categorized into 'Basic Statistics', 'Classification and', 'Clustering', and 'Filtering'. The bottom of the interface features a blue bar with the text 'Making Government Work Better' and the number '6'.

CIW AAP Dashboard

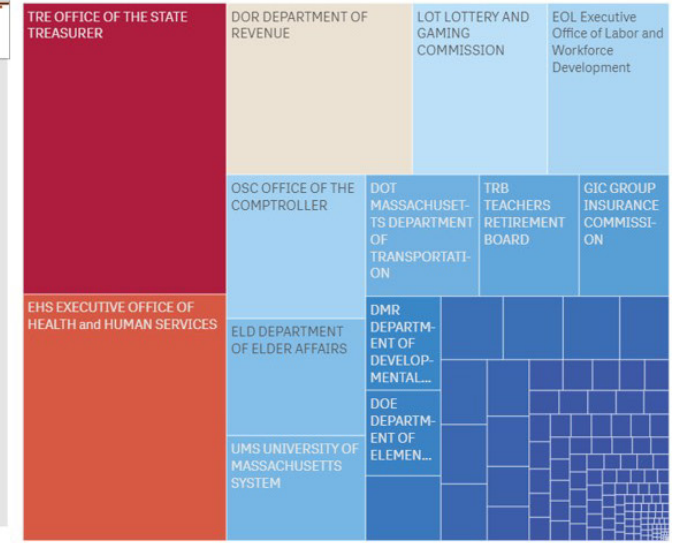
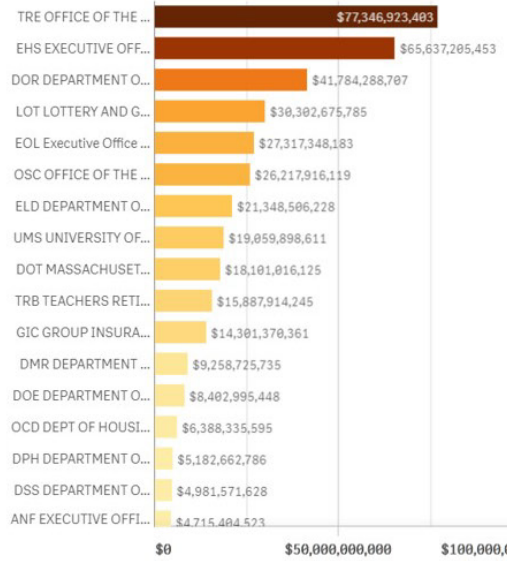
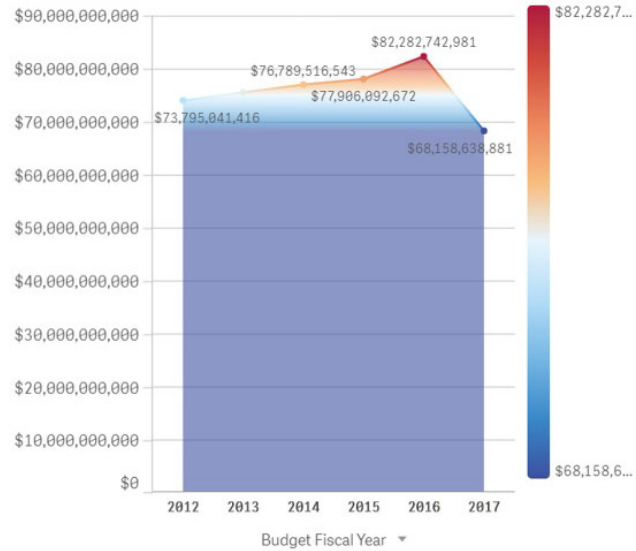
QlikSense Tutorial

- Q Cabinet
 - 01 LEGISLATURE
 - 02 JUDICIARY
 - 03 INSPECTOR GENERAL
 - 04 GOVERNOR'S COUNCIL
 - 05 SECRETARY OF STATE
 - 6 TREASURER & RECEIVER GENERAL
 - 07 STATE AUDITOR
 - 08 ATTORNEY GENERAL
 - 09 ETHICS COMMISSION

- Q Department
 - ADD DEVELOPMENTAL DISABILITIES COUNCIL
 - AGO ATTORNEY GENERAL OFFICE
 - AGR DEPARTMENT of AGRICULTURAL RESOURCES
 - ALA ADMINISTRATIVE LAW APPEALS DIVISION
 - ANF EXECUTIVE OFFICE for ADMINISTRATION and FI...
 - APC APPEALS COURT
 - ART MASS CULTURAL COUNCIL
 - ATB APPELLATE TAX BOARD
 - BBE BOARD OF BAR EXAMINERS

- Q Object Class
 - 99 PAYROLL REJECTS

- Object

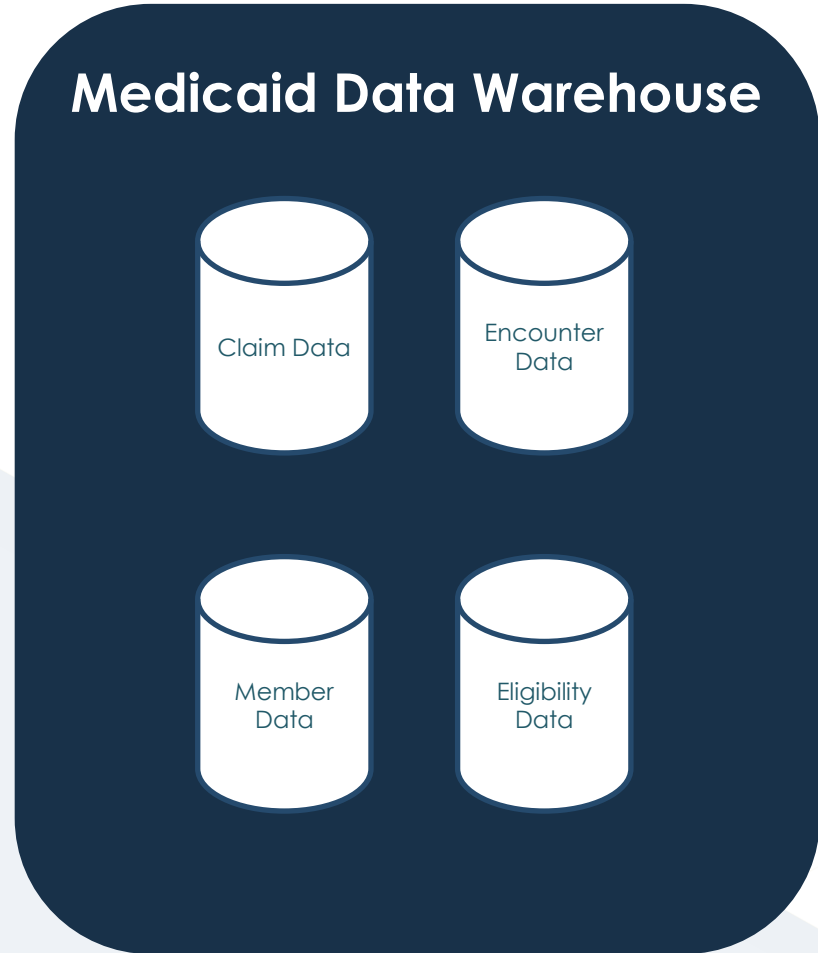
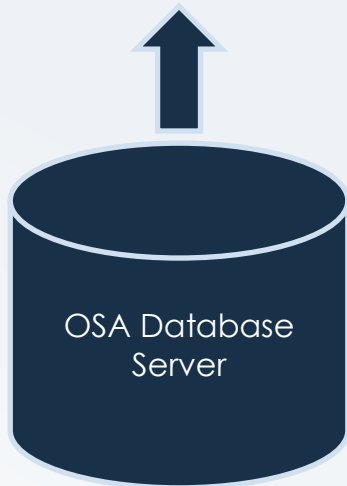
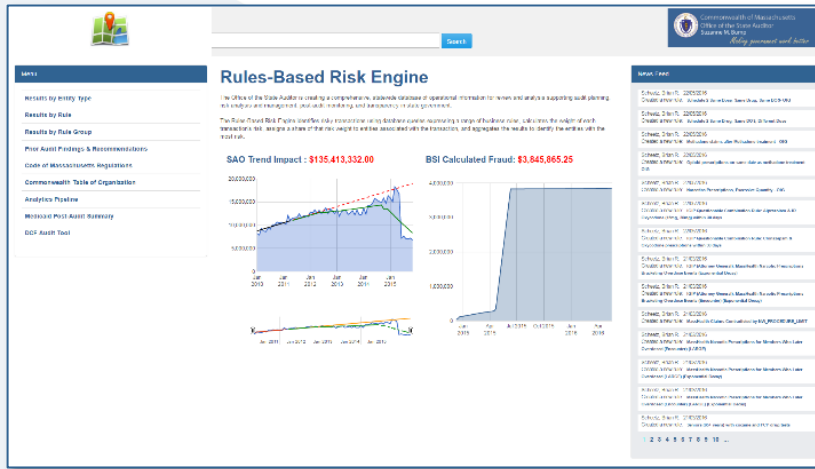


* The data set contains negative or zero values that cannot be shown in this chart.

Budget Fiscal Year	Cabinet	Expenses
Totals		\$454,397,957,450.37
2016	77 THE CENTER FOR HEALTH INFORMATION & ANALYSIS	\$22,891,264,051.89
2015	77 THE CENTER FOR HEALTH INFORMATION & ANALYSIS	\$20,682,081,035.07
2017	77 THE CENTER FOR HEALTH INFORMATION & ANALYSIS	\$20,209,412,303.90
2016	6 TREASURER & RECEIVER GENERAL	\$19,755,835,480.86
2014	77 THE CENTER FOR HEALTH INFORMATION & ANALYSIS	\$18,822,483,609.97

Budget Fiscal Year	Cabinet	Expenses
2012		\$73,795,041,416.08
2013		\$75,465,924,957.35
2014		\$76,789,516,542.54
2015		\$77,906,092,672.48
2016		\$82,282,742,980.75
2017		\$68,158,638,881.07

Rules Based Risk Engine MassHealth Example



Early Exploits in Data Analytics

⦿ Social security death match

⦿ THELOTTERY winners

DEMS: GRAVE ERRORS



By MITT ELLIOTT

The Senate Committee on Labor and Human Resources today released a report that says the Social Security Administration has made grave errors in the way it has handled the program's finances.

The report says that the SSA has made "grave errors" in the way it has handled the program's finances. It says that the SSA has "failed to follow the law" and that it has "mismanaged the program's assets."

The report also says that the SSA has "failed to provide accurate information" to the public and that it has "failed to respond to the needs of the program's beneficiaries."

The report concludes that the SSA has "acted in a manner that is inconsistent with the public trust" and that it has "acted in a manner that is inconsistent with the public interest."

State audit gives new meaning to the term 'EBT voter push'

There is a lot of talk about the EBT voter push, but what does it mean? A new report from the State Auditor's Office gives us a new meaning to the term.

The report says that the EBT voter push was a "disaster" and that it was "a complete failure." It says that the EBT voter push was "a waste of money" and that it was "a waste of time."

The report also says that the EBT voter push was "a waste of lives" and that it was "a waste of the public trust."

The report concludes that the EBT voter push was "a disaster" and that it was "a complete failure."

SHOW REFORM NEEDED

High Noon **Six key findings**

YOU ASKED FOR IT

WELFARE ZOMBIES, Next scandal: Platinum EBT cards

Job BATTENFIELD

There are people who are... **Job BATTENFIELD** is the author of the book "The Welfare State: A History of the American Safety Net." He is a senior advisor to the U.S. Social Security Administration.

There are people who are... **Job BATTENFIELD** is the author of the book "The Welfare State: A History of the American Safety Net." He is a senior advisor to the U.S. Social Security Administration.

There are people who are... **Job BATTENFIELD** is the author of the book "The Welfare State: A History of the American Safety Net." He is a senior advisor to the U.S. Social Security Administration.

POLITICAL GHOSTS

Deval Patrick after audit

REHAUD TROOP SQUAD

Deval Patrick is the Governor of Massachusetts. He is a member of the Democratic Party. He was elected Governor in 2007 and was re-elected in 2010. He is currently serving his second term as Governor.

Deval Patrick is the Governor of Massachusetts. He is a member of the Democratic Party. He was elected Governor in 2007 and was re-elected in 2010. He is currently serving his second term as Governor.

Deval Patrick is the Governor of Massachusetts. He is a member of the Democratic Party. He was elected Governor in 2007 and was re-elected in 2010. He is currently serving his second term as Governor.

Future of Data Analytics

**Technology is changing
how institutions are
structured**

This is true of the OSA

Data Analytics Gives You Superpowers



A low-angle photograph of the Massachusetts State House dome, which is covered in gold leaf. The dome is set against a clear blue sky with a few wispy clouds. To the left of the dome, an American flag flies on a tall pole. The top of the dome features a white balustrade and a smaller, ornate tower with a golden finial. The brickwork of the building is visible at the bottom of the frame.

Using data to make government work better

@MassAuditor
www.mass.gov/auditor