



# Powering Better Social Services

Why a Business  
Rules Engine is  
Essential for Child  
Welfare Programs

In April 2014, Michigan's 2,850 caseworkers thought they had been given a tool that was a godsend.

Like many other social services agencies, the Michigan Department of Human Services (MDHS) faces heavy caseloads and is responsible for the welfare of thousands of children.

Department leaders hoped that implementing new technology — a statewide automated child welfare information system (SACWIS) — would streamline case management, give caseworkers access to more data to make child welfare decisions and improve the agency's overall operations.

Instead, MDHS experienced severe technical glitches with the new system, which left many people wondering if the state's \$61 million investment had gone to waste. Eight months after its implementation, Michigan's SACWIS encountered significant problems: delayed payments to foster care providers and contractors, vanishing case files, incorrect data and the inability to close cases, among a host of other issues.

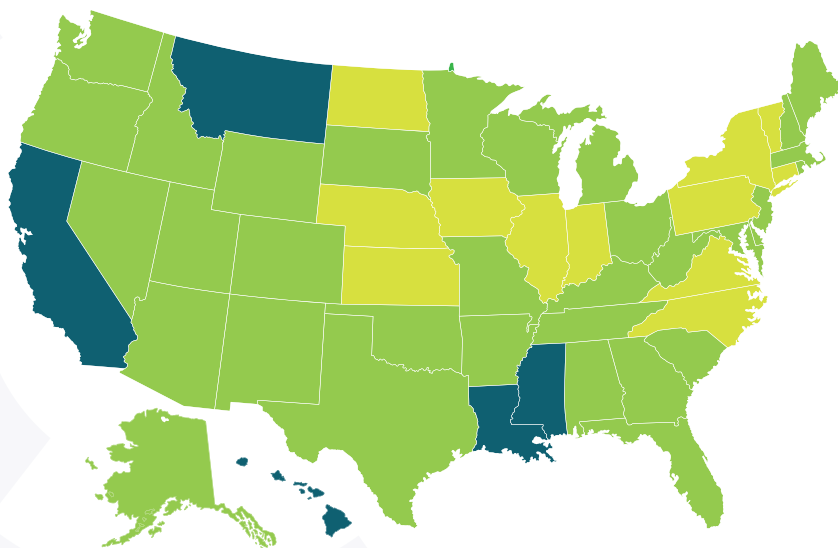
Officials worked non-stop to fix up to 100 defects per month.<sup>1</sup> Caseworkers argued the new system made them less efficient. Lawmakers urged patience and simultaneously searched for political cover. Child welfare advocates contended the situation placed children in peril.

Unfortunately, Michigan isn't the only state to experience issues with its SACWIS. Many states have implemented the technology over the last 20 years with varying results. However, the larger issue is that many of these systems are now outdated and inflexible, making it difficult for caseworkers and agencies to make critical decisions about the children in their care. These legacy systems also make it challenging for child welfare agencies to quickly adapt to constantly changing state and federal regulations.

The good news is that proposed changes in federal rules will allow states to modernize their case management systems, employ a more modular approach and integrate additional technology to streamline child welfare management. One such technology — a business rules engine — can help child welfare agencies automate the rules that go into decision-making, allowing them to be more agile as federal regulations change.

More importantly, business rules engines can help caseworkers better leverage existing data to make important decisions that could potentially change a child's life. Combining advanced technology with a caseworker's clinical judgment will improve outcomes by enabling faster and better decision-making while considering all relevant data and regulations.

## The Current Technology Landscape: System Glitches and Operational Inefficiencies



Thirty-four states currently use a SACWIS to provide child welfare services.

- Operational Systems
- Systems in Development
- Non-SACWIS Models

Source: Children's Bureau, An Office of the Administration of Children & Families

## The Evolution of SACWIS

The U.S. Department of Health and Human Services created the current SACWIS regulations in 1993, with the goal of establishing a comprehensive, one-size-fits-all case management system for agencies in a particular jurisdiction. Implementing a SACWIS is optional, but many states have chosen to, hoping to make data collection easier, which is critical for federal reporting requirements. States also use their SACWIS to determine each child's eligibility for Title IV-E, a reimbursement states get from the federal government for the costs to care for children under child welfare and foster care programs.

However, technology and child welfare practices have changed significantly in the last 23 years. Agencies complain their SACWIS is slow, clunky and difficult to navigate, leading to inefficiencies that make caseworkers' jobs more difficult. For example, Tennessee's system has had ongoing glitches since it was implemented in 2010. Caseworkers even reported that entering data about child visits — a basic task that's critical to their everyday work — required herculean effort.<sup>2</sup>

Oregon's system delayed payments to foster care parents — and caseworkers were unable to access data about response times to child abuse reports.<sup>3</sup> In 2007, Ohio's \$92 million SACWIS developed data issues that could have caused child welfare agencies to lose track of foster children.<sup>4</sup> Some counties that hadn't yet implemented the technology outright refused to do so.

In states with SACWIS issues, some agency officials have argued that these glitches haven't put children in danger, but child welfare advocates disagree. In Michigan, for example, system malfunctions required submitting an IT help ticket that would be resolved in two to three days. For a child, "two or three days could be a matter of life and death," said Bill VanDriessche, a Michigan child protective services worker who testified at a 2015 state hearing about the SACWIS issues.<sup>5</sup>

## Proposed Changes Pave the Way for New Technology

Proposed changes to federal rules could improve automation and data collection within case management systems. In August 2015, the Administration of Children and Families (ACF) issued a comprehensive child welfare information system (CCWIS) notice of proposed rule making (NPRM).<sup>6</sup> Due to the sensitivity around their data, many SACWISs are closed systems that don't integrate well with other platforms, which makes sharing data difficult. The proposed rules, which are the government's way of gathering feedback on changes to the current system, have not



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- In Tennessee, caseworkers reported that entering data about child visits — a basic task that's critical to their everyday work — required herculean effort.
- In Oregon, caseworkers were unable to access data about response times to child abuse reports.
- In Ohio, the system developed data issues that could have caused child welfare agencies to lose track of foster children.
- In Michigan, IT help tickets to address system malfunctions wouldn't be resolved for two to three days.

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– Bill VanDriessche, Child Protective Services Worker, Michigan

yet been made final. However, they could allow state agencies to replace or enhance their existing SACWIS with a CCWIS, which will give them flexibility to build tools that better align with their respective child welfare practices.

The proposed CCWIS regulations only have 14 requirements, whereas the current SACWIS regulations include 51 mandatory federal provisions, which is undoubtedly burdensome for child welfare agencies. A CCWIS will allow these agencies to move on to the next generation of case management systems and take advantage of newer technologies that allow for interoperability and a more modular approach to case management than had been employed with legacy systems. This is a huge opportunity for child welfare agencies. Instead of relying on systems with a single, unwieldy code base, agencies can integrate case management practices with technology such as a business rules engine to automate and streamline decision-making and operational processes.

## How a Business Rules Engine Can Improve Child Welfare Programs

At the end of 2013, there were approximately 402,000 children in foster care. During the same year, 679,000 children had been confirmed victims of child abuse, according to ACF.<sup>7</sup> These numbers highlight the enormous responsibility of the nation's caseworkers. Child welfare agencies have to make critical decisions every day, including when to reunify a child with his or her family, Title IV-E eligibility determination and when foster care providers are eligible for payment.

Sophisticated business rules — like those that govern social service functions — are exceedingly difficult to automate. A single regulatory change can impact hundreds of rules and processes, and take many months to implement. However, a business rules engine is a way to externalize the decision-making logic in the form of rules — as opposed to hard coding these rules — and allow that logic to be managed and changed independently of the rest of the system. When you make a change, you can test and safely execute it in hours, without a major application development lifecycle. As case management systems move toward a more modular approach, agencies will have more flexibility to manage existing rules and adapt as state and federal regulations change and introduce new rules into the system.

**A business rules engine allows agencies to make changes to their systems more seamlessly, providing social services to people who need them most. States have successfully used business rules engines for health care exchanges and Medicare and Medicaid eligibility, but they can also apply the technology to child welfare programs.**

Business rules engines can:

- streamline processes and service delivery
- improve customer service through consistent, equitable, user-friendly, easy-to-access services
- improve interoperability so rules can be used across multiple programs such as SNAP, TANF and state child welfare programs
- expedite the traditional development and decision-making cycle
- be updated quickly to reflect regulatory changes

States have successfully used rules engines for health care exchanges and Medicare and Medicaid eligibility, but they

can also apply the technology to child welfare programs. In concert with risk assessment tools embedded in a case management system and a caseworker's clinical judgment, a business rules engine can be used to process available information about a child's case and determine whether a child should be reunified with his or her family. Reunification is one of the most difficult decisions a caseworker must make, but using a rules engine in conjunction with other analytics tools can help caseworkers determine under which circumstances reunification is likely to be successful or when it may fail. Child welfare agencies could collect historical data on past cases, run this data through a rules engine and use the output to help caseworkers make reunification decisions. (Note: Most rules engines do not handle this type of batch/analytical processing well. Be sure to choose a rules engine that handles batch/analytical processing as well as transactional processing.)

A business rules engine can also help child welfare agencies determine Medicaid eligibility for children in foster care. These children can have health issues due to abuse or neglect, so regular access to health care is crucial. States receive Medicaid reimbursement from the federal government to cover some of these health care costs; however, they must first determine which children are eligible. Children who are eligible for Title IV-E foster care maintenance payments also are eligible for Medicaid. Those who receive Title IV-E guardianship assistance program (GAP) payments and underage children (18 years old and younger) whose household income doesn't exceed certain thresholds also are eligible for Medicaid. There are several other criteria, all of which require rules to make an eligibility decision. The situation requires determining which foster care providers and contractors are eligible for payment, how much that payment should be and when they'll receive it. We've already seen what happens when legacy systems can't support these critical case management functions — when Oregon's system experienced issues in March 2012, for example, some of the service providers had outstanding payments that dated back as far as 2011.

To ensure cases are handled correctly and efficiently, states must adopt automation techniques that guarantee accuracy and agility. This is why a rules engine is so essential in child welfare cases, where life and death literally hang in the balance.

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# Best Practices for Implementing a Business Rules Engine

Agencies considering a business rules engine implementation, either to enhance a SACWIS or as part of the transition to a CCWIS, should keep these key considerations in mind throughout the process:

1

## Length of Implementation

The timeframe is dependent on the extent of the implementation. It can take as little as 30 days to implement a business rules engine, or far longer if modernizing a system with thousands of existing business rules. State agencies should consider the length of the implementation and create a thorough project plan that outlines key milestones and deliverables for each project phase.

2

## Modularity

A business rules engine should allow for adaptive and reusable rule flows and make it easy to create or change rules, while still maintaining compatibility with existing rules. A modular approach also lets you separate the decision logic from the implementation itself, creating more flexibility and an expedited development.

3

## Interoperability

A primary focus of the NPRM is expanding the interfaces with which case management systems can interact. These systems could pull in court records to alert caseworkers when a convicted child abuser has been released or integrate hospital records to help better understand if a child has endured a history of abuse and should not be reunified with his or her family.

4

## Handling Complexity

Complexity comes in a variety of flavors, including the complexity of the business rules, as well as the data that is processed. All rules engines can handle simple rules applied against simple data. But only the most advanced rules engines can handle complex rules applied against complex and voluminous data.

5

## Governance and Accountability

Clear decision-making processes and established governance structures for IT and business requirements must be in place. Key stakeholders must be involved and who owns the decision logic must be determined at the outset. Monitoring compliance is also critical.

6

## Infrastructure and Resource Requirements

Consider how much staff or external resources, money and time are required to implement a business rules engine. What will the IT process, including data migration and man hours, entail?



## Implementing a Business Rules Engine

- ✓ **Assemble the right team:** Consider the internal people who will be your executive sponsors (or advocates), subject matter experts who will participate in the development process, and IT architects who will integrate and manage the rules-based servers and define the governance process. Also identify product mentors and technology trainers who are familiar with the tool and can educate and train staff.
- ✓ **Put decision-making at the forefront:** The business process redesign must come before making a decision about the technology or vendor. State agencies should identify the decisions that matter to the business from a performance and regulatory perspective.
- ✓ **Establish accountability:** Determine what the governance process is and who can change what rules, why and when.
- ✓ **Test the product in a sandbox environment:** Run a proof of concept with real sample rules. Select a rules engine that can elegantly handle your agency's logic.
- ✓ **Think through all possible scenarios:** It's important to provide the most difficult examples to ensure the rules engine will meet future needs — and not just the rules the agency needs today.
- ✓ **Appreciate the challenges of business rules engines:**
  - **Pay attention to rules integrity:** Business rules interact in complex ways. A new rule can conflict with existing rules. To ensure quality, the business rules must be complete and unambiguous, addressing every combination of data that might hit the system. Only the most advanced business rules engines help to guarantee rules integrity.
  - **Performance and scalability:** Rules engines need access to data, but sometimes these tools degrade dramatically with the amount of data passed through them. Consider how data volume will affect the system's ability to function and scale as new rules are introduced. It's important to select an advanced business rules engine that can scale to handle large data volumes.
  - **Training is key:** Train appropriate staff members on how to use the business rules engine. Leading business rules engines are easy to learn and do not require programming backgrounds.
  - **Collaboration is critical:** Use shared language and common tools between business and IT units and define handoffs and controls. Only the most advanced business rules engines provide a common language for business and IT collaboration.
  - **Start small, but think big:** Every new technology comes with a learning curve. Adapt to changes and learn as you go to improve the system for the future.

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## Rules for the Future

Whether or not the new ACF NPRM goes into effect, states can gain many benefits by externalizing their business rules with a rules engine. Legacy systems lead to inefficiencies that make caseworkers' jobs more cumbersome and potentially endanger the welfare of thousands of children. By externalizing business rules, states will gain immediate benefits and will be better positioned to capitalize on whatever changes may come with new regulations.

Many agencies say cost is an obstacle to modernization. In a MeriTalk/Unisys Center for Innovation in Government survey, 65 percent of respondents said they needed more money to modernize, while 44 percent said they needed more staff.<sup>8</sup> However, the proposed rules changes solve part of this problem. Similar to the cost allocation methodology for SACWIS application, the CCWIS proposal will allow states to get funding for their systems costs,<sup>9</sup> enabling them to update their systems and integrate modular technology, such as a business rules engine. A rules engine lets agencies be more agile and automate processes, reducing tasks that used to take days or weeks, down to mere minutes or seconds. With a business rules engine, agencies can make adjustments without having to rewrite their entire system — even when new regulations are introduced.

This is a game changer for agencies, especially considering the sensitive, painstaking work they do to protect children. Agencies can leverage technology along with human capital and caseworkers' clinical judgment to drive better outcomes, helping them make decisions that could improve thousands of children's lives.

*This piece was developed and written by the Center for Digital Government custom media division, with information and input from Progress.*

## Endnotes

1. <http://www.freep.com/story/news/politics/2015/01/11/problems-plague-state-child-welfare-computer-system/21561025/>
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## In Practice: What a Business Rules Engine Can Do

Pennsylvania's Department of Human Services (PDHS) provides services to 2.7 million residents in need, serving as a critical lifeline for Pennsylvania's most vulnerable citizens, including children in the foster care system. However, the business rules for eligibility determination were hard coded into PDHS' mainframe systems. Any regulatory changes forced a cumbersome, months-long process to make changes to the hard-coded rules.

PDHS deployed a business rules engine to better respond to regulatory changes. This new rules engine allows them to safely change business rules far faster with fewer resources. The PDHS rules engine now performs more than 250,000 rule executions across 40 core decision services within its enterprise.

The business rules engine:

- improves efficiency and productivity by reducing manual processing by caseworkers and eliminating unnecessary work
- assures compliance with legislation by providing greater transparency and traceability of the rules when state or federal regulations change
- provides better citizen service with faster eligibility determination and more self-screening processes

**“[The rules engine] processed 2.6 million records in 43 minutes for a sustained throughput of over 1,000 decision sets per second. The same process took almost two days on the mainframe in COBOL.”**

– Shirley Monroe, Former Chief Technology Officer,  
Pennsylvania Department of Human Services

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