

# Technical implementation of claims predictive models

Business insights derived from a claims predictive model can be very valuable to an organization. But in order to extract the full value of the model, it must be integrated into a claims operational process. This integration of a predictive model into a business process is called technical implementation.

Technical implementation is an important phase of a claims predictive modeling project that requires expertise from claims, actuarial, and technology personnel. It involves planning, gathering business requirements, system design and development, testing, and documentation.

The salient features of Milliman’s approach to technical implementation are as follows:

### Business-driven solution

Our solution starts with understanding business goals, needs, and constraints. These business specifications are the primary driver of every aspect of the project. The quality, timeliness, costs, and benefits of every activity in the project are measured with respect to business needs. To this extent, the business users are fully engaged. All communications are designed to keep the business user well informed.

### Expertise in multiple functional areas

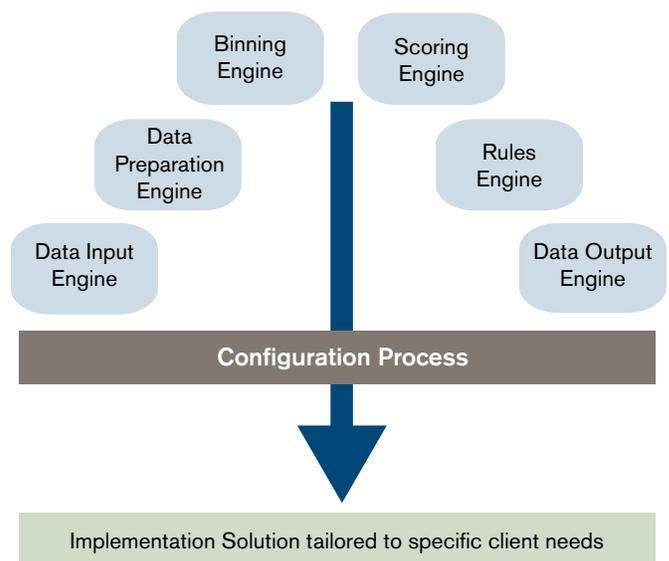
We insist on staffing our projects with a team that is well versed in claims, technology, data management, and actuarial areas. This gives us the ability to look at problems from many different perspectives, resulting in creative and innovative solutions that address the unique needs of our clients.

### Component-based design

High code reuse and component-based design is our fundamental design principle. For example, we have identified six major components (shown in the diagram below) in a predictive modeling implementation engine. These components can be mixed and matched to satisfy specific business needs. The components are highly configurable. Even after implementation, these components can be reconfigured to accommodate

changing business needs. Our component-based design has resulted in simple, high-quality, easy-to-maintain solutions that are flexible, speedy, and cost effective.

### Component Based Design





## Flexible solutions

Depending on client needs, we can make the implementation solution highly integrated with the client's existing applications, very loosely integrated, or anywhere in between. For example, below are three different solutions that required different levels of integration.

**Solution 1:** The implementation engine was designed to run within Milliman hardware as a batch process. Every month, the client sent Milliman all the required data in various flat files. Milliman ran the implementation engine against that batch of data and the results were sent to the client in a text file. The client loaded the results file into its reporting tools for further processing.

**Solution 2:** The implementation engine was designed to run within the client's hardware as a batch process. Every month, the client sent the implementation engine all the required data in various flat files. The client ran the implementation engine against that batch of data. The client loaded the results file into their reporting tools for further processing.

**Solution 3:** The implementation engine was designed to run within the client's claims administration application as a real-time process. The client end user has the ability to score any claim on an as-needed basis. The results from the implementation engine were automatically written back to the appropriate claims database.

## Testing

Milliman is considered an industry leader in quality-control practices among consulting firms. All our components will be unit tested and integration tested using our thorough testing regimen. At the time of implementation, a thorough system integration testing and user acceptance testing will be part of the deliverables. In addition, if the client requires that certain specific testing methodologies be used, Milliman will bring in the necessary resources to accommodate those requests as well.

## Documentation

Technical documentation and user documentation are two key model requirements. Our components are designed to be self-documenting. In addition, much of the logic in our components that require future maintenance is externalized into human-readable tabular forms. The goal is to significantly reduce the efforts needed for code understanding and maintenance. This approach also keeps documentation current with what is implemented.

## Conclusion

Milliman has extensive experience in providing claims predictive modeling implementation solutions to its clients. We can tailor our solutions to our client's specific business and technical needs.

Milliman is among the world's largest independent actuarial and consulting firms. Founded in Seattle in 1947 as Milliman & Robertson, the company currently has 54 offices in key locations worldwide. Milliman employs over 2,500 people. The firm has consulting practices in healthcare, employee benefits, property & casualty insurance, life insurance, and financial services. Milliman serves the full spectrum of business, financial, government, union, education, and nonprofit organizations. For further information, visit [milliman.com](http://milliman.com).

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