Decision Management delivers next generation claims systems that act immediately, increase agility, consistency and accuracy, improve customer satisfaction, speed response and reduce costs. Insurers can achieve significant speed-to-market gains, reduce fraud and create innovative new claims processes.

Today’s insurance claims systems deliver value to insurers by increasing efficiency through process automation and workflow. The use of manual decision points within these processes and systems, however, creates bottlenecks and under-utilizes company expertise. Insight gained from data mining and analytics is restricted to the back office and IT resources cannot be freed up from legacy systems maintenance. A new generation of Decision Management claims systems is required.

Next generation claims systems with Decision Management recognize decisions as reusable assets and replace decision points like claim adjudication or fraud detection with Decision Services.

These use business rules to eliminate manual reviews, increase agility and put business users in control. Data mining and analytic insights feed back into these Decision Services to improve the accuracy and effectiveness of these decisions while ongoing Decision Analysis creates a process for continuous improvement.

Insurers are adopting Decision Management to build next generation claims systems that improve claims processes. Decision Management leverages modern IT architecture to build on existing IT systems, avoiding costly rip and replace initiatives.
Claims Processing - From Workflow to Decision Management

Claims Processing Today
The potential for effective claims management to improve the bottom line is clear—Insurers have been investing heavily in claims systems to reduce costs and improve efficiency. Some insurers have taken great strides in implementing claims processes and web-based claims systems. These validate claims before submitting them and use workflow to reduce costs and improve efficiency. The growth in data volume in the number of claims has led to increased use of analytics and using claims data for early warning fraud detection and monitoring. Current approaches have limitations, however. They create manual decision bottlenecks, underutilize business expertise and analytical insights, and lack agility.

“Never before have the opportunities for the insurance industry been so phenomenal and the challenges so great.”

Deb Smallwood, Founder Strategy Meets Action

As claims management becomes widespread, handling decision points becomes critical. For instance, the moment a webform validates a claim’s data and assigns a claim number, a decision point is reached. Often it is clear whether the claim should be approved or not, yet in many claims systems the decision point is handled by workflow with the validated claim being routed to someone for adjudication. This consumes time, money and resources. Most policies and regulations are written up as requirements and then hard-coded after waiting in the IT queue, making changes slow and costly.

Moving to the Next Generation
Next generation claims systems act immediately, improving customer satisfaction and reducing costs. Next generation claims systems use Decision Management to enable ownership by and visibility to the business, ensuring the level of agility required.

The use of analytics to find fraudulent claims is growing - fraud analysts mine data to find the key risk factors for fraudulent claims for instance. But this analysis is done after the fact, resulting in a “pay and chase” approach that puts insurers on the defensive. Next generation claims systems apply this fraud insight so the claims that need review are flagged before they are paid, reducing costs and improving the odds of catching fraudsters. Analytics are also used today to assess the effectiveness of independent agents, but this information is typically not fed back into the decision
points where contracts are assigned. Next generation claims systems use the analytical insights to improve these assignments.

A leading life and health insurer and Decision Management Solutions client processes millions of claims every year. A mainframe-based system had payment and fraud detection rules hard-coded in COBOL. The analytic group developing new models to detect fraud could not add new rules to flag providers for fraud so post-payment review was being conducted manually using the models. By adopting Decision Management, the insurer could implement a rules-based decision service. New fraud rules could be applied during claims processing, preventing fraudulent claims from being paid while they were reviewed. In addition, the ease with which the analytic team could add new fraud rules to the system helps the company could stay ahead in the constant battle to outwit fraudsters.

Business Process Management, Business Intelligence and custom development projects have all brought value and cost savings to claims management. Decision point bottlenecks limit these systems because they underutilize business expertise and analytic insight and because they restrict business agility. A new mindset, one focused on the decision points within claims processes, is needed if these problems are to be addressed.

Most process models today are developed using the Business Process Model and Notation (BPMN) standard published by the Object Management Group. The DMN standard has been designed to work alongside BPMN, providing a mechanism for modeling the decision-making represented in a Task within a process model. DMN need not be used with BPMN but it is highly compatible.
Next Generation Claims - Managing and Improving Decisions

Next generation claims systems with Decision Management focus on the decisions in the claims process. These decisions are managed as reusable assets and made widely available to all channels, processes and systems via Decision Services. A decision-centric approach enables claims feedback and experience to be integrated into the whole product life cycle and brings the company’s know-how and expertise to bear at every step in the claims process.

“At predictive analytics, we can fast track valid claims or flag possible counterfeit claims for further review, saving our customers time and money.”

Senior Vice President of Claims

At the heart of this new mindset is an approach for replacing decision points with Decision Services and improving business performance by identifying the key decisions that drive value in the business and improving on those decisions by leveraging a company’s expertise, data and existing systems.

Insurers are adopting Decision Management to build next generation claims systems that improve claims processes. Decision Management leverages modern IT architecture to build on existing IT systems, avoiding costly rip and replace initiatives.

- Decision Discovery identifies which decisions are important for your business and where your organization will get the most value from business rules and analytics. Decisions are modeled using the Decision Model Notation (DMN) standard ensuring consistency and re-use. See the section on Decision Modeling for more information.

- Decision Service Construction enhances these decisions using business rules to apply policy, regulation, best practices and know-how and adding analytic insight to improve these decisions. The decisions are made available to business processes, legacy systems, websites/portals, corporate systems, enterprise applications, social or mobile apps via Decision Services built on Service Oriented Architecture (SOA).

- Decision Analysis creates a continuous improvement loop for these decisions so the decisions and their value to the business improve over time.

The Decisions in Claims Management

Decision Management improves claims processes and systems by externalizing the decisions that drive claims process performance. Decision Management ensures that
the right claims are approved, that policies are applied correctly and consistently, that the most effective routing is made and that the right actions are taken.

“Our business rules were locked up in code and this led to a lack of agility. Changes we needed urgently were taking 12-plus weeks to implement.”

VP Business Systems Implementation

Decision Discovery is the first step in applying Decision Management and involves identifying the high value decisions that will provide the biggest pay-off. A claims process contains a number of critical decisions as shown in the example flow.

Figure 1: Example Claims Flow

With next generation claims systems, each of these decisions is handled differently from the past: as shown in the table on the following page:
<table>
<thead>
<tr>
<th>Decision</th>
<th>Today</th>
<th>Next Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is Claim Valid?</td>
<td>Data validation rules are coded into the user interface that captures claims. Any changes in rules have to be routed to IT.</td>
<td>The validation rules for the large number of parameters and multiple products are managed by business owners based on published terms and conditions. Changes are made by those who understand the rules.</td>
</tr>
<tr>
<td>Is Claim Approved?</td>
<td>Relatively few claims are auto-adjudicated, most are routed to representatives. Only simple approvals are handled and these are hard to change.</td>
<td>Up to 90% or more of claims are automatically approved and the remainder is routed to a representative. The rules are managed by experts and come from a large range of sources (parent company, regulations, policies, offers, coverages) to ensure completeness.</td>
</tr>
<tr>
<td>Assign Claim</td>
<td>Simple routing rules can be defined as part of the workflow to, for instance, route claims related to certain products to certain experts.</td>
<td>Claims are intelligently routed to one of the many potential agents or representatives who could review them. Some specialize in particular kinds of claims; others might cover a particular region. Managers constantly update these rules to manage workloads and skill sets.</td>
</tr>
<tr>
<td>Risk of Fraud?</td>
<td>Either no checking is done at this decision point or it is both simplistic and deterministic, such as refusing claims from known fraudsters.</td>
<td>Every claim is assessed to see if the risk for that claim is high enough to route for review. An analytic risk score is combined with the value of the customer and the value of the claim. Analytics enhance the rules to catch more potential fraud and manage risk.</td>
</tr>
<tr>
<td>Adjust Claim</td>
<td>Claims adjustment is a manual process handled by expert staff with policy manuals and guidelines.</td>
<td>Each claims is automatically adjusted with all rules applied before being routed for payment. Where judgment is called for, a claims adjuster is engaged to provide the additional judgment or expertise required before the automated system continues processing.</td>
</tr>
<tr>
<td>Accounting and Reserving</td>
<td>Similarly to recovery, this step is a largely manual one. Reserving is manual and conducted no more than quarterly.</td>
<td>The rules for accounting change constantly as agents and accounts change, each with their own rules. These rules are managed by those who own the accounts ensuring they stay up to date. Reserving becomes a precise exercise driven by actual transactions rather than an exercise in averages and reserves are updated more often.</td>
</tr>
<tr>
<td>Identify subrogation opportunity</td>
<td>Claims portfolios are analyzed monthly or less, and often by a third party, to find undeclared subrogation opportunities.</td>
<td>A model predicts how likely a particular claim is to have subrogation opportunities and is combined with rules that identify those claims that should be automatically reviewed. Claims are routed to the right person in the subrogation department automatically.</td>
</tr>
</tbody>
</table>
Graphical decision models make it easier to communicate and collaborate on requirements and outcomes. Staff can then focus on value-add activities that require their expertise, adding further value.

**Figure 2: Claims Decision Requirements Model**

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Source: DecisionsFirst Modeler
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Decision modeling using the new industry Decision Model and Notation (DMN) standard provides a framework that teams across an organization can use. It provides a common language between business analysts, architects, business owners, IT professionals and analytic teams. Decisions are more easily tied to performance measures and to the business goals. This makes it easier to focus teams where they will have the highest impact and to measure results.

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The Decision Model and Notation (DMN) Standard was approved in 2015 by the Object Management Group. Decision Management Solutions is a submitter of the DMN standard along with Escape Velocity, FICO, IBM and Oracle and co-authors KU Leuven, Knowledge Partners International, Model Systems and TIBCO. 
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Decision Services - Smarter Claims Management

A Decision Service is a modular software service built on a company’s existing systems, using its data and know-how. The business owns these Decision Services, so they remain explicit, visible and flexible. Decision Services are components or services that answer business questions for other services – is this claim valid or should this claim be approved, for example.

A Decision Service is built on standard Service Oriented Architecture (SOA) components for ease of integration. It literally takes the business know-how out of departmental silos, legacy systems and policy manuals and makes it available to all aspects of the business, both within and beyond the claims process. Critical decisions are implemented in a modular way and the business owns the logic within these modules.

Decision Services enable insurers to bring company strategy and values directly to the front line, while maintaining and enhancing business agility. Decision Services capture valuable expertise and tribal knowledge and apply it to the appropriate business problem – increasingly important as baby boomers age and retire. Decision Services help ensure compliance by allowing the in-house experts to direct actions on the front line according to the regulations and policies that are supposed to be applied. Decision Services allow front line decisions to be made “on the spot”.

Smarter Claims Systems

- Decisions are explicit and modeled accordingly.
- Rules are written to be understandable by the business, not buried in software code.
- The business owns the ongoing maintenance of the logic.
- Analytic insight is integrated.

Decision service development is done by a cross functional team of business, IT and analytics experts. An initial decision is typically deployed first with a set of rapid iterations expanding the number of decisions included and reducing the transactions requiring manual review. Subsequent process and organizational alignments are added as the benefits of the Decision Service become known across the company and create new opportunities. Business owners continue to use and revise the business logic as business conditions change.
A large insurance group, serving 50 million customers worldwide, implemented a business rules management system (BRMS). Before, it took an average of eight calls to get the right data from the customer to process a claim. After the BRMS implementation, the average is now one call with a decision in seven minutes. The company experienced a game-changing cultural impact as well. Claims business people are making changes to rules services directly on their own, with no IT involvement after an initial transition period, reducing IT costs by 20%. The insurer created a Center of Excellence for business rules management, where a set of co-located teams of IT, rules and subject matter experts get together in a mutually supportive environment to develop new decision services.

Building in Business Expertise

Business expertise, policies, regulations and analytic insight must all be built into claims management with Decision Services. Expertise, policies and regulations are managed using business rules and these business rules become the core of any Decision Service. Business rules are statements of the actions that should be taken when certain business conditions are true. Business rules capture the policies and practices of a business organization. These business rules are in a language the business and IT can both understand.

Figure 3: Decision Model and Decision Table Integration

Source: DecisionsFirst Modeler Enterprise Edition and JBoss Drools
Business rules represent the detailed decision logic of a decision requirements model. Each group of business rules implement a specific decision in the model. These groups of business rules are the core building blocks of Decision Services. They are “atomic” - each can be reused and managed separately. This reuse is captured in a decision requirements model by business analysts and fully supported by a BRMS. Business rules are declarative – they describe the what (the desired business outcome), not the how. Business rules are applied by the BRMS in the relevant business context, not in a rigid sequence. Business rules are maintained in a repository that is updated by both business and technical users, linking from their decision requirements model to the relevant business rules in the BRMS repository.

One of the reasons for managing business rules, and using those business rules to make decisions, is that decision changes are driven by numerous business factors. Insurers sometimes have little or no control over the details of these changes or the deadlines for making these changes. They must sometimes comply very rapidly. Business rules are ideal for this kind of change cycle because they can be changed independently and it is easy to verify them against new policies, regulations, etc.

Some organizations have their IT department manage the business rules and some have business users take direct control. Others have a blended approach to suit their organization. Most insurers steadily increase business ownership of the rules.

A leading provider of prescription benefit programs built a new claims system in a Service-Oriented Architecture based on a BRMS. The BRMS enables the business users, in this case the senior pharmacists, to work with a business analyst to define, test, create, and maintain business rules, improving collaboration between the business and IT. The business rules are used throughout the claims process for validation such as member, claim and clinical data verification; pend management; claim segmentation and assignment; adjudication; payment and settlement; overrides; notification triggers; and automation of regulatory guidelines that vary from state to state, including Health Insurance Portability and Accountability Act (HIPAA) compliance. The company achieved speed-to-market gains of over 70%, reduction in claims processing time and costs by 30% and an increase in pass-through rate by over 80%.

**Building in Analytic Insight**

Business rules are not the only kind of company know-how that needs to be applied in claims management. Applying analytic insight to claims decisions allows these insights to be applied directly into day to day operations for maximum effectiveness. To do this, the tools and techniques of data mining and predictive analytics come into play. Data mining and analytics are used to improve the business rules. Data mining techniques can also analyze historical data to make predictions. These techniques turn uncertainty about the future into a usable probability.
Many insurers are already successfully gaining insights from analytics efforts, but there remains an insight-to-action gap. For example, analytics might show that customer renewal dates are dropping, but there is a gap between this insight and influencing the behavior of agents or customer service representatives. The analytical insights might take weeks or longer to ripple through CSR scripts, training and policy changes. Furthermore, decision-making is manual and unmanaged, meaning decisions are not measured and evaluated for continuous improvement.

**Figure 4: The Insight to Action Gap**

[Diagram showing the insight-to-action gap]

The value proposition of analytics is almost always to improve decision-making. Read our white paper, *Framing Analytic Requirements*, for more information.

Next generation claim systems with Decision Management systematically implement analytical insights directly in operational systems, closing the insight-to-action gap. Analytics uses historical data not only for reporting but for predicting and driving new and more effective behavior across the company. This derived insight is quickly implemented into Decision Services and delivered to the operational system.

**Figure 5: Closing the Insight to Action Gap with Decision Management**

[Diagram showing the process of closing the insight-to-action gap]

A decision requirements model shows exactly where and how an analytic will improve the decision, allowing analytic insight to be applied directly where it will make the most difference. The model shows how policies and regulations,
represented as business rules, and analytic insight that must be combined and balanced to make an effective decision.

To illustrate why there is so much advantage to Decision Management, consider an operational renewal decision to retain a customer. A retention decision for a specific customer will be made once every year or two. But it is one of thousands, maybe hundreds of thousands, of similar decisions made within that timeframe. These operational decisions determine the actions the company takes in regard to one of its most valuable business assets—a portfolio of customers worth millions in customer lifetime value. The value of each decision is multiplied by the number of customers in the portfolio. The cumulative bottom-line impact of such high-volume decisions is huge.

The claims department of a $1BN writer of commercial and personal auto insurer implemented predictive analytics to target process change in fraud and subrogation, achieving an impressive 1100% increase in fast track rate, 33% higher returns subrogation returns with subrogation recovery up by $10M/year.

**Building in Continuous Improvement**

It is often said that nothing in business can be improved if it cannot be measured and decisions are no exception. Decision Analysis—the application of performance management techniques and technologies to the monitoring of decisions—is critical. Too often, corporate measures and performance indicators are not tied to the decisions that impact them. Decision Management links how specific decisions create or destroy value to the business and individual performance metrics being tracked.

In addition to mapping decisions to Key Performance Indicators and so understanding their impact on the business, Decision Management also monitors the performance, throughput and basic statistics of decisions. How many decisions are made to approve, reject or refer, for instance, is a measure of decision effectiveness. Too many referrals will increase the burden on the staff doing manual reviews. Too many rejections, thanks to false positives for instance, will impact customer service or sales. Similarly, decisions that take too long or that cost too much may have a negative overall impact. Tracking and reporting on this information will help the business owners understand and thus manage their decisions more effectively.

To manage changing circumstances, insurers can constantly challenge the way a decision is made to see if the approach being used remains valid. Improving decisions over time, given changing business constraints, ensures that optimal decision making becomes the norm.
Getting to ROI

Insurers that have adopted a Decision Management approach, implemented business rules and begun applying data mining and analytics have seen a significant return on their investment:

- 70% speed-to-market gains
- 30% reduction in claims processing time
- 80% increase in pass-through rate
- Claims decisions from days to minutes
- 20% IT cost reduction
- 1100% increase in fast track rate
- 33% higher returns subrogation returns
- Reduced fraud costs by millions annually
- Detecting fraud before payment
- 60% of claims handled automatically

Decision Management puts business know-how, tribal knowledge, expertise and historical data to work in claims management to ensure that consistent, accurate decisions are made automatically throughout the process. Insurers are achieving significant speed-to-market gains, claims decisions have gone from taking days to taking minutes, fraud costs are being reduced by millions annually and fraud detection is happening before payment. These next generation claims systems use a decision-centric approach to replace the largely manual decision points in the claims process with agile Decision Services.

Insurers have used workflow, business process management, webforms, integration and analytics to improve the efficiency of claims processes. They have eliminated duplicate data-entry, reduced delays and increased their understanding of their claims. This work provides the foundation for a new generation of claims systems with Decision Management.

One of the world’s leading employee benefits providers uses a BRMS to automate the rules that govern their core business functions. A central component of their Service Oriented Architecture (SOA), the BRMS is the basis for more than 150 decision services and manages thousands of rules. Applications range from claims and workflow routing to document generation and customer acquisition. The use of business rules and a BRMS was critical to a major initiative to make it easier for customers to do business with them.
Decision Management is firmly established as a best practice in insurance as well as in credit and retail marketing. Best practices have emerged across these industries as all share similar business challenges such as complex claims approvals, fraud detection and consumerization, and similar IT challenges with legacy systems. For example:

- Putting more and more rules into the hands of business users improves agility and accuracy. Business users can own their applications and make changes rapidly, safely and effectively.
- It is critical to adopt a “test and learn” mentality to keep challenging how decisions are made and to develop new approaches that improve over the existing ones.
- Data mining and analytic insight are most valuable when they can be applied to the handling of individual transactions and customers through embedding them in Decision Services.
- Detecting fraud before payment is dramatically more effective and a combination of business rules written by experts and adaptive analytic models is very effective.
- Legacy systems can be modernized without expensive rip and replace projects.
- Processes can be simplified and made more agile if decisions are externalized and managed as distinct Decision Services.

Decision Management is a critical component in building next generation systems for claims and beyond.
A Note on Decision Modeling

There is an emerging consensus that a Decision Requirements Model is the best way to specify decision-making. Decision Requirements Models can and should be developed in an industry standard way using the Object Management Group’s Decision Model and Notation standard. Adopting this industry standard gives users access to a broad community and a vehicle for sharing expertise more widely.

Today business analysts use a variety of techniques to accurately describe the requirements for an information system. However, current requirements approaches don’t tackle the decision-making that is increasingly important in information systems.

A detailed description of how to do decision modeling is described in our free white paper, Decision Modeling with DMN, available in the white paper section of our website.

- A Decision Requirements Model provides the needed structure for the implementation of a Business Rules Management Systems (BRMS), supporting iteration and agile development.
- Framing data mining and predictive analytics projects with a Decision Requirements Model links analytics to business results and helps ensure successful deployment.
- Understanding the decisions relevant to a dashboard or decision support environment structures knowledge and puts a premium on taking action.
- Decision Requirements Models are a common language across business, IT and analytic organizations improving collaboration, increasing reuse, and easing implementation.

Decision modeling is a new technique in the International Institute of Business Analysts (IIBA) Business Analyst Body of Knowledge or BABOK® v3.
For More Information

- Object Management Group. *Decision Model and Notation (DMN) Specification 1.0 Submission*
- Decision Management Solutions (2015), *Decision Modeling with DMN*.
- Decision Management Solutions (2015), *Framing Analytic Requirements*.
- DecisionsFirst Modeler, [www.decisionsfirst.com](http://www.decisionsfirst.com).

Contact Us

If you have any questions about Decision Management Solutions or would like to discuss engaging us we would love to hear from you. Emails works best but feel free to use any of the methods below.

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