

What Business Analysts Need to Know About the Decision Model – Part 1 of 2

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Portions of this article are drawn from the book, The Decision Model: A Business Logic Framework Linking Business and Technology, von Halle & Goldberg, © 2009 Auerbach Publications/Taylor & Francis, LLC. This article consists, in part, of abstracts from the book; directly quoted passages, diagrams and tables are cited, and are copyright © 2009 Auerbach Publications/Taylor & Francis LLC. Reprinted with the permission of the Publisher. Part 1 is based mostly on Chapters 1 and 2.

To appreciate the relevance of this article, RQNG readers need only consider the global economic panic of 2008. What *business decisions* and rules were in place to manage risk? Were they included in business requirements? Who was managing them over time? Most importantly, how do we manage them better in the future?

The good news is that the Decision Model is part of the answer. The business analyst is part of the solution.

What is the Decision Model and Why is the Business Analyst Critical?

The Decision Model brings rigor and sense to the management of *business decisions*. It is the first model of business logic, complete with a well-defined structure and three forms of normalization. Some say the groundbreaking work behind it can "change the game" between business managers and IT professionals and deliver a foundation for a new generation of software. If so, the business analyst is critical. Early adopters and reviewers have stated that the book on the Decision Model has the potential to emerge as a classic reference. But, how did we get here?

A Disruptive Lesson from History

Decades ago, the Relational Model changed the way we store and manage data. With it, we separate and leverage data as an organizational asset, a major contribution to the Information Age.

Today, the Decision Model does the same for business logic, promising similar value. It establishes business logic, like data, as having its own existence, independent of how executed, where executed, and whether or not implemented in automated systems.

There are similarities between a data model and a Decision Model. The most important is that "each model represents a new way of thinking because each focuses on the inherent properties of the modeled asset (i.e., data and business logic)." (Adapted from (von Halle and Goldberg 2009)). Each having its own specific model means that each emerges as a tangible and manageable resource.

Yet, the differences are more intriguing. "The two modeled assets are fundamentally different, serving different purposes and having different characteristics. It stands to reason that their models exhibit

different native structures and different guiding principles.” (Adapted from (von Halle and Goldberg 2009))

So, What Is Business Logic?

To keep it simple, business logic is merely the logic intended by business rule statements, without the need for special grammar. So, a Decision Model represents intended logic behind a business decision that the business wants or needs to manage. Examples include the decision to pay a claim and how much to pay. Perhaps, business logic evaluates diagnosis code, treatment code, provider code, and service cost to arrive at a payment conclusion. So, a Decision Model simply casts business logic into a technology-independent model based on 15 principles, including Decision Model normalization. Why do we need such a model? Consider what we do today.

Justification for the Decision Model

“Many rules of the business are buried in program code or in people’s heads. Sometimes, the business rules executing in program code are not what the business thought they were or even what the business needs them to be. They remain buried, scattered, and resistant to change.

Even when captured separately from models and requirements, the technology for storing business logic ranges from documents, spreadsheets, modeling tools, repository tools, and proprietary software, to home-grown databases. We manage them as a catalog or list of business rule statements, tied in one way or another to related deliverables. We do not manage them in a common model as we manage data today. Learning from history, large-scale success is more likely to come with the introduction and adoption of such a model.” (Adapted from (von Halle and Goldberg 2009))

What Does Business Logic in a Decision Model Look Like?

The elementary structure in a Decision Model is the Rule Family as shown in Table 1.

Table 1 Two Rule Families of Business Logic

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| Conditions | | | | | | | | Conclusion | |
|-----------------------------------|------|--------------------------------|------|--|------|----------------------------------|-----|---|------|
| Person Employment History (ik,ck) | | Person Mortgage Situation (ck) | | Person Miscellaneous Loans Assessment (ck) | | Person Outside Credit Rating(ck) | | Person Likelihood of Defaulting on a Loan | |
| Is | Poor | Is | Poor | is | High | Is | Low | Is | High |
| | | | | | | | | | |

| Conditions | | | | Conclusion | |
|--|--|---|--|---------------------------|--|
| Person's Years at Current Employer(ck) | | Person Number of Jobs in Past Five Years (ck) | | Person Employment History | |
| | | | | | |
| | | | | | |

(Note that the two Rule Families are not fully populated)

Without knowing the details from the book, four characteristics are obvious:

1. Rule Families are two-dimensional, tabular structures depicted as columns and rows.
2. Column headings represent the names of pieces of information. Some are conditions to test and some are conclusions to reach.
3. Rows are instances of business logic consisting of condition and conclusion expressions conforming to the headings. The top Rule Family row concludes that a person with a poor employment history, poor mortgage situation, high miscellaneous loans assessment, and low outside credit rating is highly likely to default on a loan.
4. One Rule Family may connect to another. The two Rule Families above connect visibly to each other because the **condition** label Person Employment History in the top Rule Family is the same as the **conclusion** label in the bottom Rule Family. So, we obtain the value for this piece of information as the conclusion of one Rule Family and we use that value as a condition in another.

The Rule Family table exposes the detailed logic, but a Decision Model diagram shows only the logic's structure or skeleton.

What Does a Decision Model Diagram Look Like?

Figure 1 is a Decision Model diagram. It is for the business decision denoted by the octagon at the top of the figure, called "Determine Policy Renewal Method." There are six Rule Families with connections among them depicted by lines.

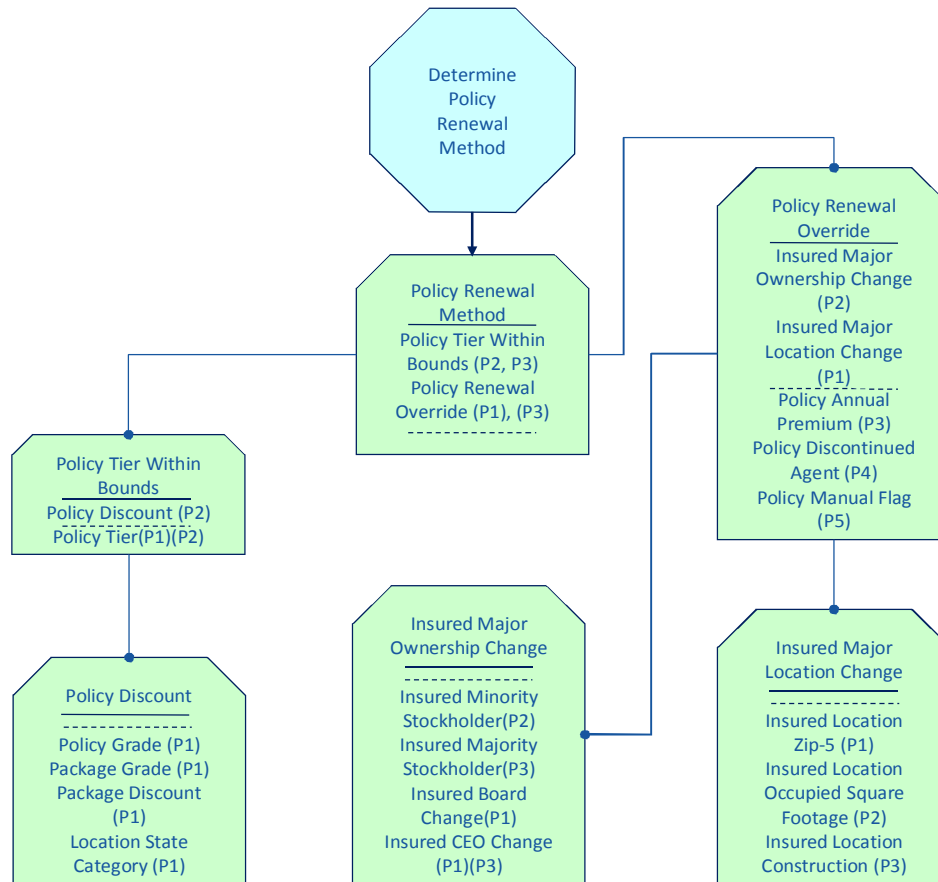


Figure 1 Example of Decision Model Diagram

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To create such a Decision Model, we reduce business logic to atomic form by applying Decision Model principles. The principles guarantee that each atomic piece of business logic belongs in only one Rule Family and Rule Families connect together in only one way. There is little room for error.

This is good news. Delivering a Decision Model is far superior to creating a list of business rule statements in much the same way delivering a data model is superior to creating a list of data elements.

A New Role for Business Analysts

But, business logic is different from data in a strategic way. Business logic is the business’s prescription behind important business decisions in operational transactions or otherwise. It is critical business reasoning. Therefore, business analysts are critical to the delivery of business logic and Decision Models.

So, to round out requirements, we link Decision Models to other deliverables by placing its decision octagon in the appropriate places. We no longer wrestle with one business rule at a time. Each

Decision Model becomes reusable by many deliverables. We can now change business logic independently of business processes and other aspects of automated systems. The Decision Model elevates the management of individual business rules to that of whole business decisions. We can even automate a Decision Model in various ways – as a decision service in an SOA, for example.

Decision Models Emerge as Technology Assets

“The natural connections from the Decision Model to BPM and SOA are so compelling that they elevate the management of business decisions to the status of critical technology assets or services. It even becomes easier to incorporate Decision Models earlier in systems development projects and enterprise architecture projects. Again, an entire Decision Model (even without details) emerges as a fundamental artifact that adds cohesion to enterprise and system architecture in support of business objectives.” (Adapted from (von Halle and Goldberg 2009))

Decision Models Emerge as Business Assets

“Because a Decision Model is a tangible and cohesive deliverable, it can be linked to business motivations which render it an important new business lever for achieving desired ends.” (Adapted from (von Halle and Goldberg 2009))

The Decision Model has the potential to change the way business leaders steer their enterprises through normal and changing times. That’s because it is a tool for business non-technical people for specifying and managing business logic, an asset that defines and changes the complexity of the business itself.

There is one thing the 2008 economic panic has taught us. The quality of a business relates not only to the quality of its business processes and software infrastructure, but also to the quality of its business decisions that drive both of these.

This article is but the beginning of the story. Part 2 explores how the Decision Model simplifies and improves business process models and functional requirements.

RQNG readers interested in purchasing *The Decision Model: A Business Logic Framework Linking Business and Technology* by Barbara von Halle and Larry Goldberg, Knowledge Partners International, Mendham, NJ, USA, can do so through www.TheDecisionModel.com where additional Decision Model information can be found.

The authors will be presenting more information on the Decision Model at BPMInstitute.org's annual [BrainStorm New York '09](#) event. It will be held over November 2-5 at The Westin Times Square and includes BDM/Rules, BPM, SOA and Business Architecture education.

As a Premier Program Partner, KPI has secured discounted rates to attend, including a 1-Day Pass* for only \$99 (a \$795 value) and is making this discount available to RQNG members.

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*Deadlines and restrictions apply.

About Barbara von Halle

Barbara von Halle is Managing Partner of Knowledge Partners International, LLC (KPI). She is co-inventor of the Decision Model and co-author of [The Decision Model: A Business Logic Framework Linking Business and Technology](#) published by Taylor and Francis 2009. She is the fifth recipient of the Outstanding Individual Achievement Award from International DAMA, inducted into the Hall of Fame in 1995. Known as a business rules pioneer, she has consulted in this area for over 10 years. She is an invited keynote speaker at conferences in the US and Europe.

Her first book, [Handbook of Relational Database Design](#) has sold more than 21,000 copies. She was the most popular in Database Programming and Design magazine for many years.

Other book publications include [Business Rules Applied](#) and [The Business Rule Revolution](#). Her recent article in Intelligent Enterprise magazine features case studies from Oregon State, Freddie Mac, Dell Financial Systems, and Pershing LLC.

Barb can be found at www.TheDecisionModel.com where new announcements and materials on the Decision Model appear.

About Laurence Goldberg

Larry Goldberg, is Managing Partner of Knowledge Partners International, LLC (KPI), has over thirty years of experience in building technology based companies on three continents, and in which the focus was rules-based technologies and applications. Commercial applications in which he played a primary architectural role include such diverse domains as healthcare, supply chain, and property & casualty insurance.

Larry is co-author of [The Decision Model: A Business Logic Framework linking Business and Technology](#) (Auerbach, 2009), a co-editor of [The Business Rule Revolution: Running the Business the Right Way](#) (HappyAbout.info 2007), is on the editorial board of www.BPMInstitute.org and is the Editorial Director of the BDM Bulletin, a monthly e-publication of the [BPMInstitute.org](http://www.BPMInstitute.org).

Larry joins Barbara von Halle, his business partner at KPI, in writing the monthly Business Decision Management column in www.Tdan.com. In addition Larry's writings can be read in industry publications such as www.BPtrends.com, www.RequirementsNetwork.com and www.ITMPI.org.

He may be heard, four times a year, as the track chair of the BDM Symposium at the Brainstorm conference, and at many conferences and industry events around the world. He and Barbara von Halle conduct a very popular series of training seminars on Business Decision Management and the Decision Model, both in person and on-line.

Larry can be found at www.TheDecisionModel.com and looks forward to hearing from everyone with and interest in decision management, business rules, BDM, EDM, and BPM.