

The Decision Model #1: Linking Business Leaders and Technology

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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. Reprinted with permission of the Publisher.

Abstract

This is the first in a three-part series introducing the Decision Model. “The Decision Model gives a specific form, function, and tangible visual representation to business logic as expressed by business people. As such, business leaders use the Decision Model to expose and manage that logic as a strategic instrument of business agility. It is useful in normal changing times as well as in tumultuous crises.”(Adapted from (von Halle and Goldberg 2009)) [Details on how to utilize the Decision Model in normal through chaotic times are found in Chapter 3 of the book]. The Decision Model is emerging as a new business asset of high business value. The audience for this article includes business leaders, business architects, requirements analysts, use case modelers, business process modelers, and agile developers. The second article explains how the Decision Model revolutionizes today’s business processes and requirements management. The third article reveals how the Decision Model dramatically improves the testing process.

Why is this article important?

The Relational Model changed the way we manage, leverage, and store data. The discovery of this technology-independent model of data brought about the information revolution. It did so by enabling us to separate data and realize and leverage its considerable value as an organizational asset. Today, the Decision Model does the same for business logic, and promises similar, if not greater, value from our technology assets and business processes.

The Decision Model recognizes that business logic has its own existence, independent of how executed, where executed, and whether or not it’s implemented in automated systems. It has a recognizable structure different from other model structures. Decision Model normalization principles minimize redundancies and anomalies in the business logic. Details of the Decision Model and commentaries on its place in the world of business and IT are provided in the book [The Decision Model: A Business Logic Framework Linking Business and Technology](#) (von Halle and Goldberg 2009). 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, and Reprinted with the permission of the Publisher.

“The Decision Model results from proposition that business logic has its own existence, independent of how executed, where executed, and whether or not it’s implemented in automated systems. Taking this one step further, the Decision Model reveals that business logic, by itself, has a recognizable structure different from other model structures.” (Adapted from (von Halle and Goldberg 2009)) This

allows it to be separated from other concerns and managed in its own right. Moreover, Decision Model normalization principles minimize redundancies and anomalies in the business logic. To understand how the Decision Model represents business logic in this way, read the [Decision Model Primer](#).

The Compelling World of the Decision Model

Despite best intentions, a gap continues to exist between business leaders and IT specialists because our areas of expertise, not to mention vocabulary, are different. Over the years, IT specialists have become more business-oriented and business leaders have become more technology savvy. But, there remains a translation and automation gap between business thinking and its computerization.

The Decision Model is a new technique that closes that gap because it is a universal and rigorous representation of logical business thinking. The Decision Model can be initiated by business people and understood unambiguously by IT people.

More importantly, from a pure business perspective, an entire Decision Model can be tuned to specific business metrics as a means for achieving those objectives. Further, the Decision Model's effectiveness can be measured against actual business performance. And most importantly, under-performing Decision Models can be tweaked by business leaders themselves to better steer the business where those leaders want or need it to go. That is, the Decision Model is a tool by which business leaders gain better control of the business's most important logic that guides its most important operations, computerized or otherwise.

What Is Business Logic?

"For the purpose of this article, business logic is simply the business thinking behind the way important business decisions are to be made. Examples of business decisions include the decision to grant an education loan or to pay a claim. The business logic behind the former includes evaluation of a student's academic and financial status and behind the latter a claim's eligibility for payment. So, business logic is the underpinning of an organization's identity, integrity, innovation, and intelligence. Representing the "rules of the business," it operates perhaps thousands of times a day in service to customers and partners. Business logic drives the present and future thinking and behavior of the company. (von Halle and Goldberg 2009)

Justification for the Decision Model

"Historically, business logic has been taken for granted. It operates in enterprises today without a great deal of thought given to it, hidden from sight. It could even be thought of as a liability rather than the powerful asset it ought to be. That's because it is invisible, unknown, incomplete, and possibly incorrect. To improve the state of important business logic, the Decision Model separates it from other concerns and delivers it as an asset in its own right in a very specific representation for its easy maintenance and automation." (von Halle and Goldberg 2009)

Business Decisions and The Decision Model

A Decision Model, by definition, represents all of the business logic or business rules behind only one business decision. "Why are business decisions so important? Taylor and Raden state that

“organizations are perceived through the lens of the decisions they make” (Taylor and Raden, 2007). However, not all business decisions are equal in value. Some are of high value, others of less value. Some are automated, others may never be automated. Any one of these business decisions, taken by itself within the context of one transaction, may seem to have a low value. However, a new realization is that the high volume of these operational decisions, taken as a group, has a huge cumulative effect on an organization’s health. Other business decisions of low volume but of a strategic nature also can have a huge impact on an organization’s health. (A formula for determining the value of a business decision is provided in Chapter 3 of the book).

This means that there is an emerging business focus on how to better manage and automate business decisions. The practice of managing smart, agile decisions is called Business Decision Management (BDM or Enterprise Decision Management, EDM). Not only does BDM focus on the business value of business decision (and their Decision Models), BDM also advances Business Process Management (BPM) and Service-Oriented Architecture (SOA) by promoting business decisions to the status of a visible asset worthy of management.” (von Halle and Goldberg 2009) (The topics of BDM and SOA are covered in detail in Chapter 3, 5 and 15 in the book). The remainder of this article focuses on how a Decision Model links business leadership and technology.

Linking Business Motivations to Decision Models

“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. This means that the development and maintenance of Decision Models can be prioritized based on their anticipated impact on business performance. Also, appropriate automation technology can be selected based on the anticipated business value of each Decision Model and the nature of its business logic.

In general practice, we correlate specific business directions to an entire Decision Model first to justify its development and second to monitor its performance. The business directions may be high-level strategies, intermediate tactics, or specific measurable objectives. Each of these business directions, especially measurable objectives, can be evaluated over time using pre-defined metrics. Such metrics may include measurements of actual business performance in revenue, profit, customer satisfaction or size of work queues, for example. From these metrics, business experts can ascertain if the Decision Model is performing as expected. If not, business experts can make appropriate changes in the business logic within the Decision Model, as needed, and put the new business logic into play. (Adapted from (von Halle and Goldberg 2009))

To best understand how the Decision Model serves as a business lever, let’s take a quick glance at what a Decision Model looks like.

Quick Glance at a Decision Model

Figure 1 is from the Decision Model Primer and represents a sample Decision Model.

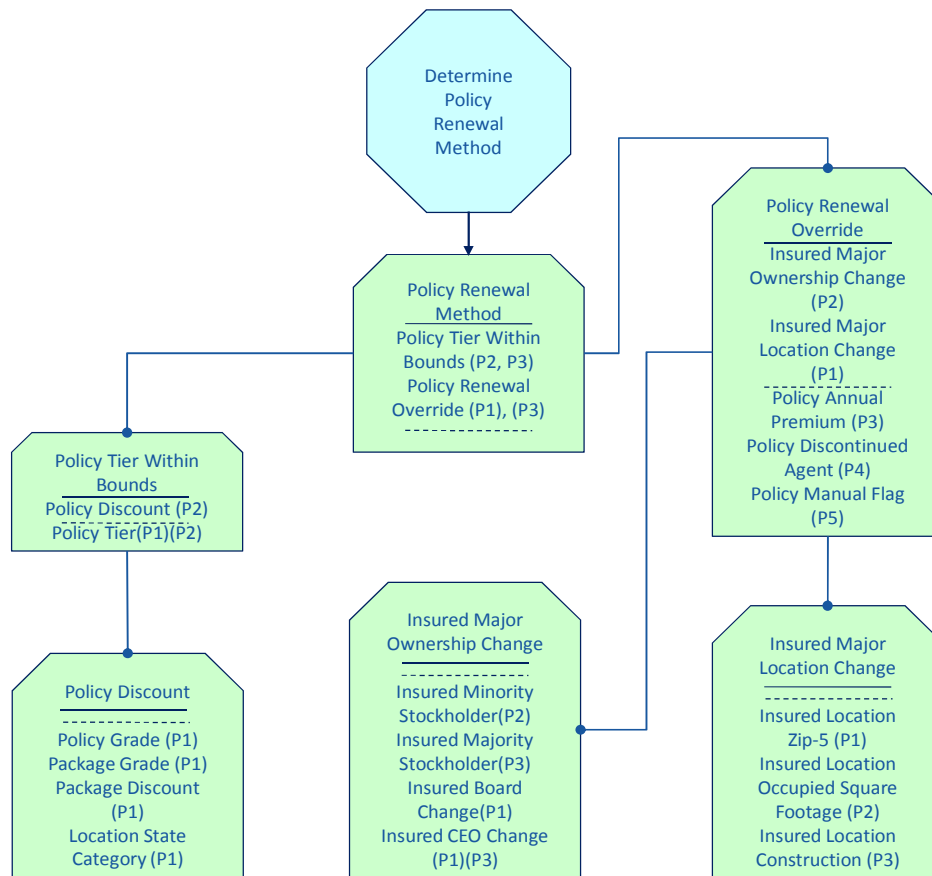


Figure 1 Example of Decision Model Notation

Source: The Decision Model (von Halle & Goldberg) © 2009 Auerbach Publications/Taylor & Francis LLC. Reprinted with the permission of the Publisher.)

As you can see, this Decision Model stands behind (and hence, is linked to) the business decision denoted by the octagon at the top of the figure which is called “Determine Policy Renewal Method”. This diagram shows the structure of the business logic for making this decision because the words inside the icons represent criteria (information) that is used in the business logic. This diagram does not reveal the detailed business logic statements themselves which are organized behind the icons shown here.

In this diagram, the business logic is organized into six groups because the diagram contains six icons. Obviously, there are (logical) dependencies among these groups as indicated by the lines connecting them. To create such a Decision Model, business logic and business rules are reduced to an atomic state following the principles of the Decision Model. (Details on the principles of the Decision Model are in chapters 9, 10, 11 of the book. Details on how to reduce business logic to an atomic state and cast it into a Decision Model structure are provided in the [Decision Model Primer](#) and in various chapters of the book.) From here, there is one and only one place in a Decision Model to put each atomic business logic statement. The benefit is that this leaves little or no room for error.

Another benefit is that an entire Decision Model can be linked to other kinds of models (e.g., business process models, use case models) simply by placing the decision octagon in the appropriate place in those models. The presence of the Decision Model octagon somewhere in another model indicates that there is business logic guiding the other model and that the business logic is represented and maintained totally independently of other models. This renders any Decision Model reusable by many different kinds of models. A Decision Model can also be automated in various ways – one way being a decision service in an SOA.

This means that business leaders can interface with the business logic through its Decision Model. The Decision Model is correlated to the many places in the enterprise that it provides guidance for its business decision. Changes to the business logic in a Decision Model can then be made to its (perhaps many) implementations. Not only that, but changes can be made to Decision Models and their implementation, independent of changes to business processes or other aspects of automated systems. The independence of business logic through Decision Models elevates that logic and whole business decisions to the status of a tangible, valuable business asset.

The Elevation of Business Decisions and Decision Models to Business and Technology Assets

“Early experience with the Decision Model confirms that the business decision and Decision Model are assets that gain high business management attention. As such, it is easier to incorporate them earlier in business-driven projects, such as BPM, process improvements, and business transformation efforts. That’s because business people easily recognize that it is difficult to find much business value in an individual business rule or business logic statement, but there is much value in evaluating and managing the performance of entire business decisions. Therefore, Decision Models (even without exposing their detailed business logic) emerge as the fundamental asset that drives the business toward its objectives.

At the same time, 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))

How Are Organizations Getting Started with Decision Models?

The introduction of the Decision Model changes the way we think, manage, automate, and leverage the most important business thinking from business leaders. The significance of that change and the value to the business means introducing new roles, new deliverables, new skills, and new technology into progressive organizations. The most successful way that we have done so is to define and follow a maturity model focused on the process of managing business decisions, called the Business Decision Maturity Model (BDMM). The BDMM can be used by organizations to determine the maturity level they are at, the level they need to achieve, and a plan for doing so.

The BDMM measures the quality of the Business Decision Management process, where the goal is that a good-quality process delivers high-quality business logic behind business decisions. Improving the quality and agility of business decisions improves the performance of the business itself. To date, the only way to do so in a rigorous manner is with the Decision Model.

The Business Decision Maturity Model

The high-level, diagrammatic summary of the BDMM is shown in Figure 2.

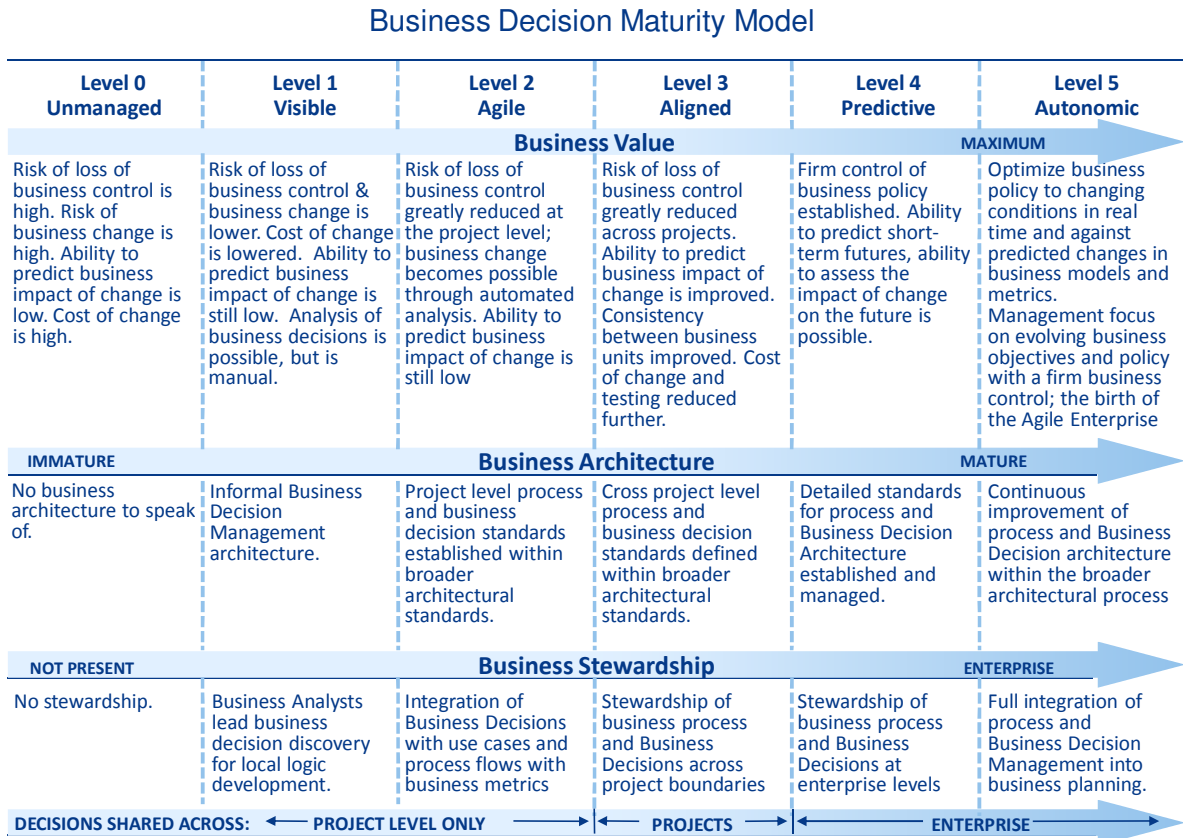


Figure 2 The Business Decision Maturity Model

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“It is important to note that, even though the BDMM defines the maturity of the BDM process, the titles for each given level of the BDMM (Unmanaged, Visible, Agile, Aligned, Predictive, and Autonomic) refer to the qualities anticipated in the Decision Models created at each level, and not the qualities of the process.

Unique Features of the BDMM

The BDMM has two unique features, which are based on actual practice. First, unique among maturity models, the BDMM incorporates a business value vector indicating the business consequence of each

level within the model. That's because business decisions are tied directly to the business value they deliver. Second, the BDMM is adaptable for use with an architecture maturity model. Thus, if the organization is already using an architecture maturity model, the BDDM can serve as an adjunct for assessing close alignment between BDM maturity and architectural maturity. [Details on the Decision Model and Enterprise Architecture are in chapter 14 of the book].

The Characteristics of the BDMM Vectors

The BDMM can be applied to any organization or project of any size, complexity, and maturity. It provides three vectors for each level:

- **Business Value.** The Business Value vector identifies the relevant business consequence of a particular level of maturity in the Business Decision Management Process. This is helpful when building a roadmap to, and weighing the risk/reward of, the investment in developing a given level of maturity. Determining the optimum level for a given organization is an important use of the BDMM. This vector is therefore the starting point for assessing the current or target maturity of BDM. That is, organizations use this vector to select a BDMM level. From here, the other vectors define characteristics and measurement criteria for achieving that level. Each organization may customize a set of characteristics and criteria to measure the actual business value earned from a given level of maturity relative to the benefits suggested by the model.
- **Business Architecture.** The Business Architecture vector describes the maturity of the Business Decision Management Process within the Business Architecture. This vector can be customized to align with the organization's business architecture practice. It may use baseline characteristics for architecture maturity as found in architecture maturity models. These characteristics would then need to be modified specifically for Business Decision maturity purposes.
- **Business Governance.** The Business Governance vector describes the maturity of the business governance of the Business Decision Management Process and is measured against the characteristics specified for this vector. This is a separate set of characteristics for stewardship or governance in architectural maturity models.

Assessing the BDMM Level

A BDMM assessment is carried out by referring to the BDMM diagram and details, and scoring each of the Business Architecture and Business Governance characteristics to determine the extent of that compliance. The assessment is based on two separate judgments:

- A qualitative judgment, which is the extent to which the organization has developed processes and practices that match the characteristics of the specific level being assessed.
- A quantitative judgment, which is calculated by the breadth of implementation across the prescribed level of the organization.

These two judgments are maintained separately, and are not combined in a single score. The qualitative assessment is critical in all levels, but the quantitative judgment is more important the higher the level in the BDMM. The risk of proceeding to level 3 before a sufficient number of projects, given the size of

the organization, have demonstrated a level 2 proficiency would be a high risk. Similarly, a sufficient quantitative score for a level 3 would be a prerequisite to attempt a level 4 without significant risk. Finally, from level 4 to 5 it is presumed that the organization would be widely acculturated to Decision Management, and would be at a relatively high quantitative score.

Let's look at the cultural characteristics of each level.

Level 0: None

At this level there is no awareness of business decisions as a manageable asset, and business logic is not formally managed or separated from code, documents, or individual knowledge.

Level 1: Visible

The general goal of level 1 is to gain visibility (hence the label Visible) of business decisions and their business logic through the delivery of Decision Models. Such visibility allows stakeholders to know the content of the business logic behind the business decisions. Generally, at level 1 the visibility is relatively localized to specific areas of the organization, or even more typically, to a given project.

Level 2: Agile

The overall goal for level 2 is to achieve agility, meaning that business decisions are not just known through Decision Models, but can be changed rapidly. This means that business decisions and their Decision Models are implemented in technology, where the business logic of the business decisions has been externalized and exposed such that the business analyst, or even business user, is able to rapidly change it. Typically, a Business Rule Management System is most appropriate. The business decisions at level 2 are normally localized to a project.

Level 3: Aligned

The overall goal for level 3 is alignment of business decisions and their Decision Models across projects, and prospectively, across business silos. This enables the reuse of business decisions and Decision Models, and—more importantly—positions the organization for higher-quality business processes as business decisions become aligned across the processes. There is significant business change implied between level 2 and level 3, as the governance processes cross organizational boundaries and become more challenging. The alignment may commence at a project-to-project alignment of business decisions, and may progress to a wider scope. The benefits of level 3 become greater the more widely spread the alignment.

Level 4: Predictive

The overall goal of level 4 is to be able to predict changes in the business environment and develop business decisions and corresponding Decision Models ahead-of-time in response to anticipated or hypothesized business events and conditions. In some cases, the anticipated Decision Models can be populated with detailed business logic. In other cases, in anticipation of chaotic or disruptive events, only the structure of anticipated Decision Models may be known or only partially populated.

Level 5: Autonomic

The overall goal of level 5 is for time- and business-critical business decisions and Decision Models to respond to changing events without human intervention, therefore at the “speed of business,” not

human speed, based on algorithms and predictive models that control the business decision logic in Decision Models. This level is called autonomic, and ensures that the response of the business is both based on careful advance planning and instant adjustment. This is the evolution envisaged by Taylor and Raden in *Smart (Enough) Systems* (Taylor and Raden 2007).

Summary

The Decision Model has the potential to change the way business leaders steer their enterprises through normal and changing times. It has characteristics similar to the Relational Model for data, but its impact will be different. That's because it is a tool for non-technical business people for specifying and managing business logic, an asset that defines and can change the complexity of the business itself.

We are entering an age where the quality of a business is related not only to the quality of its business processes and software infrastructure, but also to the quality of the business decisions that drive both of these.

“Practice proves that the business decision is the asset that the business really needs and wants to manage. Business rules and business logic statements are simply the details by which the business does so. The business decision and the idea that it can be modeled in its right elevate the Business Rule Management process to that of Business Decision Management. The BDMM, as a maturity model, can be used by any organization or project of any size, complexity, and maturity, to chart its course in BDM. The BDMM and the Decision Model are tools that are simple to use, by design.” (Adapted from (von Halle and Goldberg 2009))

But that is only the beginning of the story. The Decision Model also plays a very significant role in several other areas of business and technology practices: the next article in this series explores how the Decision Model simplifies and improves business process and the development of functional requirements. The third and final article in the series demonstrates how the Decision Model can improve the testing of requirements in business systems.

To learn more about the Decision Model, readers can order the book at www.TheDecisionModel.com.

Works Cited

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