International Institute of Business Analysis™

BABOK® v3 Demystified Webinar Series

Chapter:	Chennai IIBA® Chapter
Date & Time:	29-Dec-16 | 6:30 to 7:30 PM IST
Topic:	Decision Modelling
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Example of a decision: should I have another Wine?

- Organising Information:
  - How much money I have
  - How much money a wine costs
  - How drunk am I?
  - Do I have to drive?
  - How fat am I?
  - How much do I like the people in the pub?
  - How much do I like the people at home?

Decisions and Decision Making

- Decision = choice made from available alternatives
- Decision Making = process of identifying problems and opportunities and resolving them
- Programmed Decisions
  - Situations occurred often enough to enable decision rules to be developed and applied in the future
  - Made in response to recurring organizational problems
- Non-programmed Decisions – in response to unique, poorly defined and largely unstructured, and have important consequences to the organization

Certainty, Risk, Uncertainty, Ambiguity

- **Certainty**
  - All the information the decision maker needs is fully available
- **Risk**
  - Decision has clear-cut goals
  - Good information is available
  - Future outcomes associated with each alternative are subject to chance
- **Uncertainty**
  - People know which goals they wish to achieve
  - Information about alternatives and future events is incomplete
  - People may have to come up with creative approaches to alternatives
- **Ambiguity**
  - By far the most difficult decision situation
  - Goals to be achieved or the problem to be solved is unclear
  - Alternatives are difficult to define
  - Information about outcomes is unavailable

Decision Modelling

- Decision models show how data and knowledge are combined to make a specific decision
- Decision models can be used for both straightforward and complex decisions
- Straightforward decision models use a single decision table or decision tree to show how a set of business rules that operate on a common set of data elements combine to create a decision
- Complex decision models break down decisions into their individual components so that each piece of the decision can be separately described and the model can show how those pieces combine to make an overall decision

Types of Models and Notations

- Decision tables represent all the rules required to make an atomic decision
- Decision trees are common in some industries, but are generally used much less often than decision tables
- Complex decisions require the combination of multiple simple decisions into a network
- All of these approaches involve three key elements:

  -Decision

  -information

  -knowledge

Decision tables

- A decision table is a compact, tabular representation of a set of these rules
- When all the conditions in a particular rule evaluate to true for a set of input data, the outcome or action specified for that rule is selected
- Decision tables generally contain one or more condition columns that map to specific data elements, as well as one or more action or outcome columns
- If all the cells in a rule are either blank or evaluate to true, the rule is true and the result specified in the action or outcome column occurs

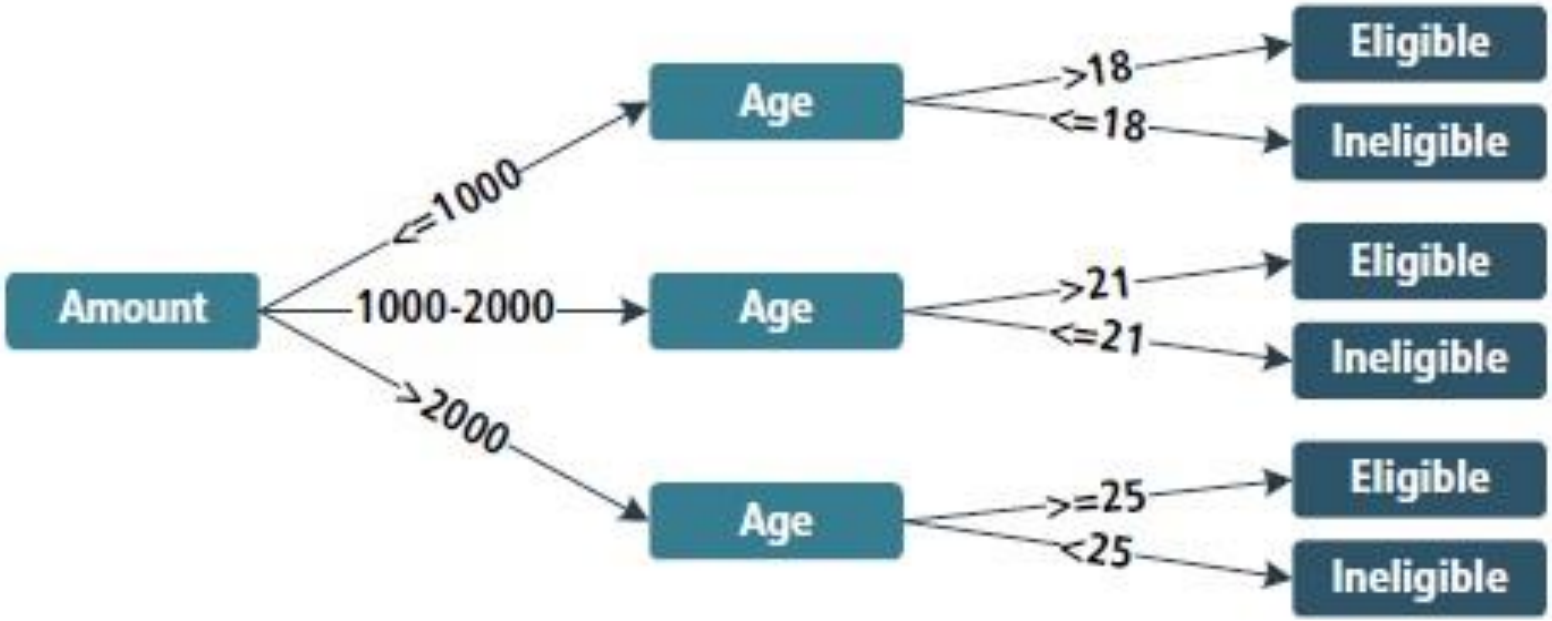
Decision tables

Eligibility Rules		
Loan Amount	**Age**	**Eligibility**
<=1000	>18	Eligible
	<=18	Ineligible
1000–2000	>21	Eligible
	<=21	Ineligible
>2000	>=25	Eligible
	<25	Ineligible

Decision trees

- Decision trees are also used to represent a set of business rules.
- Each path on a decision tree leaf node is a single rule.
- Each level in the tree represents a specific data element; the downstream branches represent the different conditions that must be true to continue down that branch.
- Decision trees can be very effective for representing certain kinds of rule sets, especially those relating to customer segmentation.

Decision trees



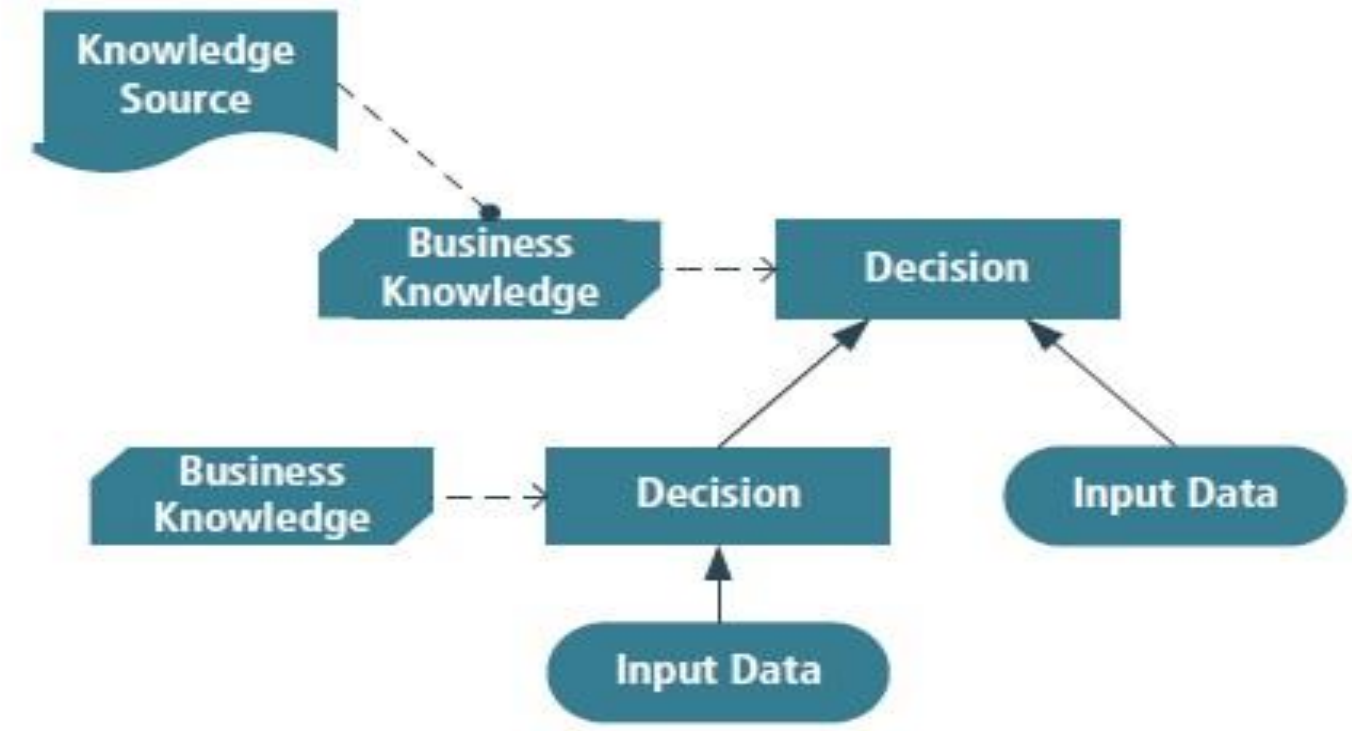
Decision Requirements Diagrams

- A decision requirements diagram is a visual representation of the information, knowledge, and decision making involved in a more complex business decision.

- Decision requirements diagrams contain the following elements:
  - **Decisions:** shown as rectangles. Each decision takes a set of inputs and selects from a defined set of possible outputs by applying business rules and other decision logic.
  - **Input Data**: shown as ovals, representing data that must be passed as an input to a decision on the diagram.
  - **Business Knowledge Models**: shown as a rectangle with the corners cut-off, representing sets of business rules, decision tables, decision trees, or even predictive analytic models

Decision Requirements Diagrams

- **Knowledge Sources**: shown as a document, representing the original source documents or people from which the necessary decision logic can be or has been derived.



Strengths

- Decision models are easy to share with stakeholders, facilitate a shared understanding, and support impact analysis
- Multiple perspectives can be shared and combined, especially when a diagram is used
- Simplifies complex decision making by removing business rules management from the process
- Assists with managing large numbers of rules in decision tables by grouping rules by decision. This also helps with reuse
- These models work for rules-based automation, data mining, and predictive analytics, as well as for manual decisions or business intelligence projects.

Limitations

- Adds a second diagram style when modelling business processes that contain decisions. This may add unnecessary complexity if the decision is simple and tightly coupled with the process

- Defining decision models may allow an organization to think it has a standard way of making decisions when it does not. May lock an organization into a current-state decision-making approach

Limitations

- Cuts across organizational boundaries, which can make it difficult to acquire any necessary sign-off
- May not address behavioural business rules in a direct fashion
- Business terminology must be clearly defined and shared definitions developed to avoid data quality issues affecting automated decisions

About Fhyzics

Fhyzics, a leader in Business Analysis Services and Training, is an Endorsed Education Provider [EEP™] of International Institute of Business Analysis [IIBA®], Canada.

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Next Webinar: Financial Analysis

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Presented By
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