



Establish and Maintain Sensible Business with Decision Table

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Let's take a look at the following cases:

1. Buying a contract phone is more expensive than a full price phone.
2. Buying a CPU/Motherboard combo is more expensive than buying them separately.
3. The discount for frequent flyers who made an early reservation is less than frequent flyers who made a late reservation.

Weird? Absurd business logic is generally introduced due to the increasing complexity of business operations. In order to make the business rational, it is important to apply strategic decision-making skills. [Decision table](#) can help here.

Case Study - Airline Discount

Airfare is a very complicated system. There are so many factors, along with many possible combinations of these factors that may affect the fare. Without a thoughtful analysis of all the factors, it is difficult to implement a pricing structure that is beneficial to both the customer and to the airline. As an airline, QAL is facing this problem.

QAL has long been documenting and managing its airfare pricing structure with document files. Updates were made to the documents for any change to the policy.

The operation manager of QAL thinks that there must be certain rules conflicting with each other. He wants to study the current policy but he finds it hardly possible because the document that records the policy has become a very long one with regulations and rules listing in a mess. Let's take a look at the document:

Airfare

1. Infant passengers under two years old are offered a discount of 80% on domestic flights
2. Infant passengers under two years old are offered a discount of 70% on international flights.
3. Youth passengers (between two and sixteen) are offered a discount of 10%, for any kind of destination.
4. Frequent flyer enjoys a discount of 20%.
5. For international flights, passengers are offered 15% discount if they travel during off-seasons.

6. There would be no discount for international flights, except that when the passenger is an infant passenger or when travelling during off-season.
7. Passengers who make reservation five months before their journey are offered a discount of 10%.
8. Frequent flyer enjoys a discount a 15% by making reservation five months before their journey.
9. The amount of discount is accumulated.
10. The maximum amount of discount for infant passengers is 80%
11. The maximum amount of discount for non-infant passengers is 20%
- ...

In order to find out the problem policy, he decided to represent the rules in the form of a decision table. Here is the decision table he developed:

	◀ Rules ▶								+
Conditions	1	2	3	4	5	6	7	8	
C1. Infant passengers (age: < 2)	Y	Y							
C2. Youth passengers (age: 2 to 16)			Y	Y					
C3. Frequent flyers					Y	Y			
C4. Domestic flights	Y								
C5. International flighers		Y						Y	
C6. Early reservation				Y		Y	Y		
C7. Off-season traveling								Y	
Actions	1	2	3	4	5	6	7	8	
A1. Offer 10% discounts			X				X		
A2. Offer 15% discounts						X		X	
A3. Offer 20% discounts				X	X				
A4. Offer 70% discounts		X							
A5. Offer 80% discounts	X								

By studying the fifth and the sixth rule, he discovered that frequent flyer who made an early reservation will receive a 15% discount while frequent flyer who made late reservation will receive 5% more, which does not make sense at all. So he managed to refine the policy, review the change he made by comparing the rules and finally updated the information system for this change.

Try it out

1. Download the [decision table sample project](#).
2. Start Visual Paradigm and open the downloaded project file.

- Open the decision table.

	Rules							
Conditions	1	2	3	4	5	6	7	8
C1. Infant passengers (age: < 2)	Y	Y						
C2. Youth passengers (age: 2 to 16)			Y	Y				
C3. Frequent flyers					Y	Y		
C4. Domestic flights	Y							
C5. International flighers		Y						Y
C6. Early reservation				Y		Y	Y	
C7. Off-season traveling								Y
Actions	1	2	3	4	5	6	7	8
A1. Offer 10% discounts			X				X	
A2. Offer 15% discounts						X		X
A3. Offer 20% discounts				X	X			
A4. Offer 70% discounts		X						
A5. Offer 80% discounts	X							

- Press on the column header of rule 5. Drag to rule 6 to perform a multiple selection.

	Rules							
Conditions	1	2	3	4	5	6	7	8
C1. Infant passengers (age: < 2)	Y	Y						
C2. Youth passengers (age: 2 to 16)			Y	Y				
C3. Frequent flyers					Y	Y		
C4. Domestic flights	Y							
C5. International flighers		Y						Y
C6. Early reservation				Y		Y	Y	
C7. Off-season traveling								Y
Actions	1	2	3	4	5	6	7	8
A1. Offer 10% discounts			X				X	
A2. Offer 15% discounts						X		X
A3. Offer 20% discounts				X	X			
A4. Offer 70% discounts		X						
A5. Offer 80% discounts	X							

- By studying these business rules, you can easily find the problem - Frequent flyers who make an early reservation enjoy less discount than frequent flyers who make late reservation.

6. Let's correct the business decisions by updating the business actions. Offer 15% discounts to general frequent flyers and 20% for frequent flyers who make an early reservation.

	← Rules →							
Conditions	1	2	3	4	5	6	7	8
C1. Infant passengers (age: < 2)	Y	Y						
C2. Youth passengers (age: 2 to 16)			Y	Y				
C3. Frequent flyers					Y	Y		
C4. Domestic flights	Y							
C5. International flighers		Y						Y
C6. Early reservation				Y		Y	Y	
C7. Off-season traveling								Y
Actions	1	2	3	4	5	6	7	8
A1. Offer 10% discounts			X				X	
A2. Offer 15% discounts					X			X
A3. Offer 20% discounts				X		X		
A4. Offer 70% discounts		X						
A5. Offer 80% discounts	X							

Conclusion

Decision table helps to convert complex business rules into easy-to-read format. Readers can look-up and think over the business decisions without difficulties. When multiple rules are placed adjacent to each other, conditions and actions can be easily compared, non-sense rules can be figured out and rectified easily and accurately.

Resources

1. [Airfare-Decision-Table.vpp](#)

Related Links

- [Tutorial - Business Logic Discovery with Decision Table](#)
- [Tutorial - Align Business Goal and Business Logic with Decision Table](#)
- [Tutorial - Decision Table in Action](#)
- [Article - Decision Table Explained](#)



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