

# Playing by the Rules

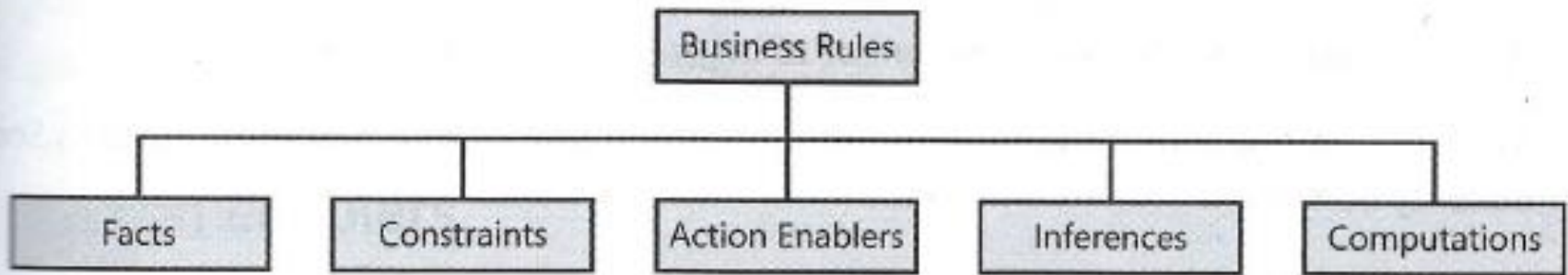
Chapter 9

# Business Rules Influence Various Types of SW Requirements

**TABLE 9-1** How business rules can influence various types of software requirements

Requirement type	Illustration of business rules' influence	Example
Business requirement	Government regulations can lead to necessary business objectives for a project.	<i>The Chemical Tracking System must enable compliance with all federal and state chemical usage and disposal reporting regulations within five months.</i>
User requirement	Privacy policies dictate which users can and cannot perform certain tasks with the system.	<i>Only laboratory managers are allowed to generate chemical exposure reports for anyone other than themselves.</i>
Functional requirement	Company policy is that all vendors must be registered and approved before an invoice will be paid.	<i>If an invoice is received from an unregistered vendor, the Supplier System shall email the vendor editable PDF versions of the supplier intake form and the W-9 form.</i>
Quality attribute	Regulations from government agencies, such as OSHA and EPA, can dictate safety requirements, which must be enforced through system functionality.	<i>The system must maintain safety training records, which it must check to ensure that users are properly trained before they can request a hazardous chemical.</i>

# Business Rule Taxonomy



**FIGURE 9-1** A simple business rule taxonomy.

# Roles and Permissions Matrix

Roles and Permissions Matrix	Employee	Administrator	Circulation Staff	Library Aide	Non-Employee	Volunteer	Patron
<b>System Operations</b>							
Log in to library system		X	X	X			
Set up new staff members		X					
Print hold pick list		X	X	X			
<b>Patron Records</b>							
View a patron record		X	X				
Edit a patron record		X	X				
View your own patron record		X	X	X		X	X
Issue a library card		X	X				
Accept a fine payment		X	X				
<b>Item Operations</b>							
Search the library catalog		X	X	X		X	X
Check out an item		X	X				
Check in an item		X	X	X		X	
Route an item to another branch		X	X	X		X	
Put an item on hold		X	X	X		X	X

**FIGURE 9-2** Constraining business rules sometimes can be represented in a roles and permissions matrix.

# Computation Business Rule Organized in a Table

**TABLE 9-2** Using a table to represent computational business rules

<b>ID</b>	<b>Number of units purchased</b>	<b>Percent discount</b>
DISC-1	1 through 5	0
DISC-2	6 through 10	10
DISC-3	11 through 20	20
DISC-4	More than 20	30

# Make Business Rules Atomic

Avoid complex rules: “DVDs can be checked out for one week, and you may renew it up to two times for three days each, but only if another patron hasn’t placed a hold on it”

**TABLE 9-4** Some sample business rules catalog entries

ID	Rule definition	Type of rule	Static or dynamic	Source
ORDER-5	If the customer ordered a book by an author who has written multiple books, then offer the author’s other books to the customer before completing the order.	Action enabler	Static	Marketing policy XX
ACCESS-8	All website images must include alternative text to be used by electronic reading devices to meet accessibility requirements for visually impaired users.	Constraint	Static	ADA Standards for Accessible Design
DISCOUNT-13	A discount is calculated based on the size of the current order, as defined in Table BR-060.	Computation	Dynamic	Corporate pricing policy XX

# Tables are Useful

Instead of a list:

**Expired.Notify.Before** *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the container's current owner one week before the date the container expires.*

**Expired.Notify.Date** *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the container's current owner on the date the container expires.*

**Expired.Notify.After** *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the container's current owner one week after the date the container expires.*

**Expired.Notify.Manager** *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the manager of the container's current owner two weeks after the date the container expires.*

Use a table:

**Expired.Notify** *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the individuals shown in the following table at the times indicated.*

<b>Requirement ID</b>	<b>Who to notify</b>	<b>When to notify</b>
<i>.Before</i>	<i>Container's current owner</i>	<i>One week before expiration date</i>
<i>.Date</i>	<i>Container's current owner</i>	<i>On expiration date</i>
<i>.After</i>	<i>Container's current owner</i>	<i>One week after expiration date</i>
<i>.Manager</i>	<i>Manager of container's current owner</i>	<i>Two weeks after expiration date</i>

# Documenting Business Rules

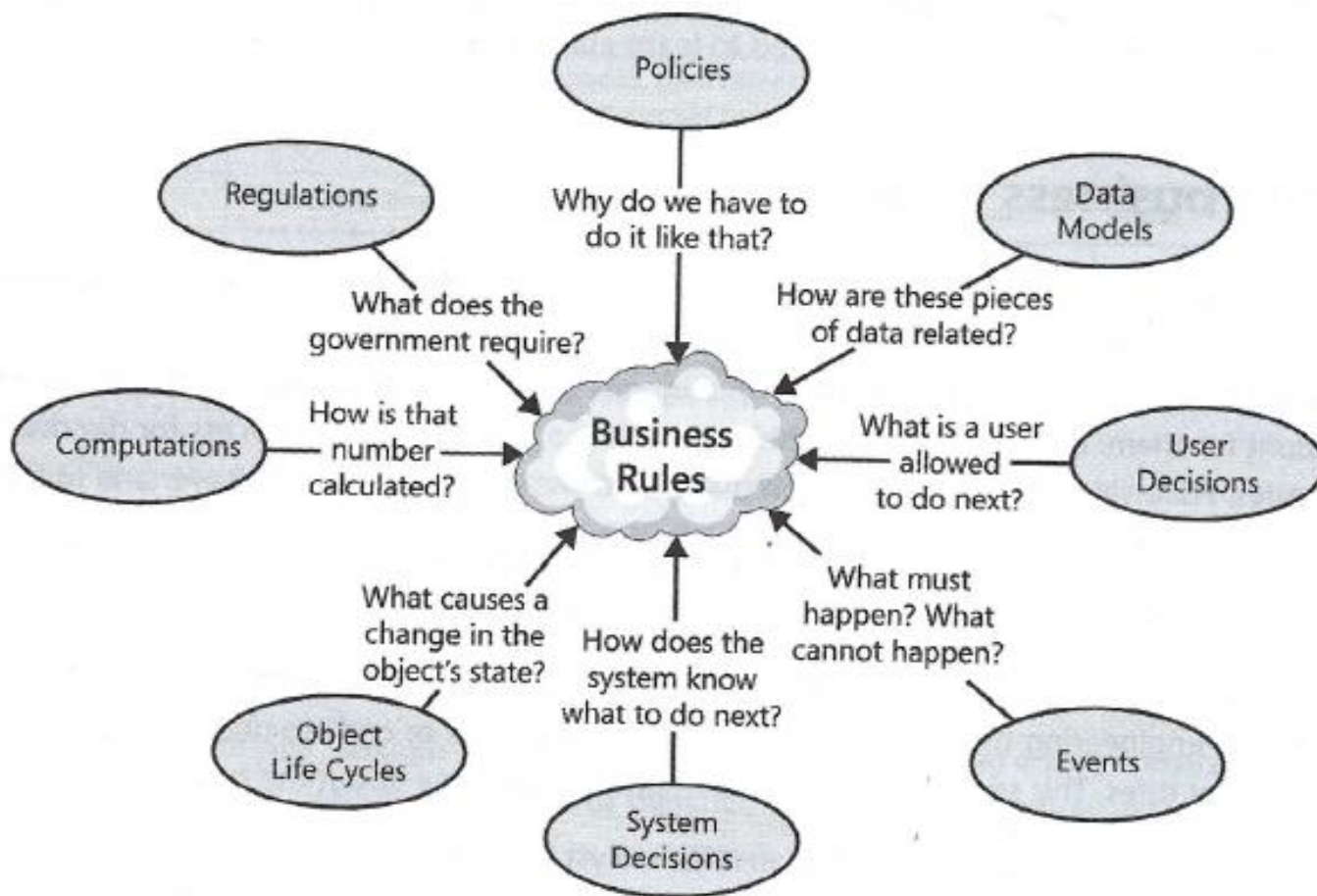
**TABLE 9-4** Some sample business rules catalog entries

ID	Rule definition	Type of rule	Static or dynamic	Source
ORDER-5	If the customer ordered a book by an author who has written multiple books, then offer the author's other books to the customer before completing the order.	Action enabler	Static	Marketing policy XX
ACCESS-8	All website images must include alternative text to be used by electronic reading devices to meet accessibility requirements for visually impaired users.	Constraint	Static	ADA Standards for Accessible Design
DISCOUNT-13	A discount is calculated based on the size of the current order, as defined in Table BR-060.	Computation	Dynamic	Corporate pricing policy XX

Tech's template is the same.



# Sources of Business Rules



**FIGURE 9-3** Discovering business rules by asking questions from different perspectives.