
Chapter 9

Playing by the rules

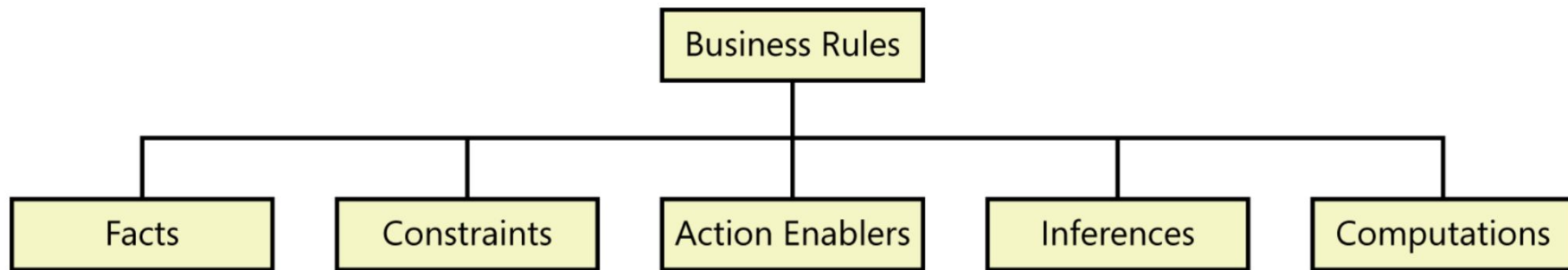
Objectives

- A business rules taxonomy
- Documenting business rules
- Business rules and requirements

A business rules taxonomy

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A business rules taxonomy



A business rules taxonomy

➤ Facts

- Is the simply statements **that are true about the business** at a **specified point in time**.
- Examples of facts include the following:
 - Every chemical container has a unique bar code identifier.
 - Every order has a shipping charge.
 - Nonrefundable airline tickets incur a fee when the purchaser changes the itinerary.
 - ...
- **Focus on facts** that are **in scope** for the project.

➤ Constraints

- Is a statement that restricts the actions that **the system or its users** are allowed to perform.
- A constraining business rule might say that certain actions **must** or **must not** or **may not** be performed, or that **only certain people or roles** can perform particular actions.
- Constraints types:
 - *Organizational policies*
 - *Government regulations*
 - *Industry standards*

➤ Constraints Examples:

Organizational policies

- A loan applicant who is less than 18 years old must have a parent or a legal guardian as cosigner on the loan.
- A library patron may have a maximum of 10 items on hold at any time.

A business rules taxonomy

➤ Constraints Examples:

Constraining business rules sometimes can be represented in a *roles and permissions matrix*

Roles and Permissions Matrix	Employee	Administrator	Circulation Staff	Library Aide	Non-Employee	Volunteer	Patron
System Operations							
Log in to library system		X	X	X			
Set up new staff members		X					
Print hold pick list		X	X	X			
Patron Records							
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				
Item Operations							
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

➤ Action enablers

- A rule that triggers some activity if specific conditions are true is an action enabler.
- A statement in the form:

"If <some condition is true or some event takes place>, then <something happens>"

- Examples:
 - *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.*
 - ***After** a customer places a book into the shopping cart, **display** related books that other customers also bought when they bought this one.*

➤ Inferences

- Inferences are often written in the “if/then” pattern also found in action-enabling business rules, but the “then” clause of an inference simply *provides a piece of knowledge, not an action to be taken*.
- Sometimes called *inferred knowledge* or a *derived fact*, an inference creates a new fact from other facts.
- Examples:
 - *If a payment is not received within 30 calendar days after it is due, **then** the account is delinquent.*

➤ Computations

- Defines computations that transform existing data into new data by using specific mathematical formulas or algorithms.

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

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

➤ **A library Member:**

“How long can I check out a DVD for?”

➤ **The librarian:**

“You can check out a DVD or Blu-ray Disc 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.”

- These business rules are called **atomic** because they **can't be decomposed further**.
- Will have many atomic business rules, and *the functional requirements will depend on various combinations of them*.

TABLE 9-3 Some atomic business rules for a library

ID	Rule
Video.Media.Types	DVD discs and Blu-ray Discs are video items.
Video.Checkout.Duration	Video items may be checked out for one week at a time.
Renewal.Video.Times	Video items may be renewed up to two times.
Renewal.Video.Duration	Renewing a checked-out video item extends the due date by three days.
Renewal.HeldItem	A patron may not renew an item that another patron has on hold.

Documenting business rules

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

Business rules and requirements

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As an illustration, consider the following rules:

★ **Rule #1 (action enabler):**

“If the expiration date for a chemical container has been reached, then notify the person who currently possesses that container.”

★ **Rule #2 (fact):**

“A container of a chemical that can form explosive decomposition products expires one year after its manufacture date.”

The BA might derive some functional requirements for that feature such as the following:

➤ **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.

Business rules and requirements

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.*

Requirement ID	Who to notify	When to notify
<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>