Taking the Mystery Out of Term – Fact Modeling
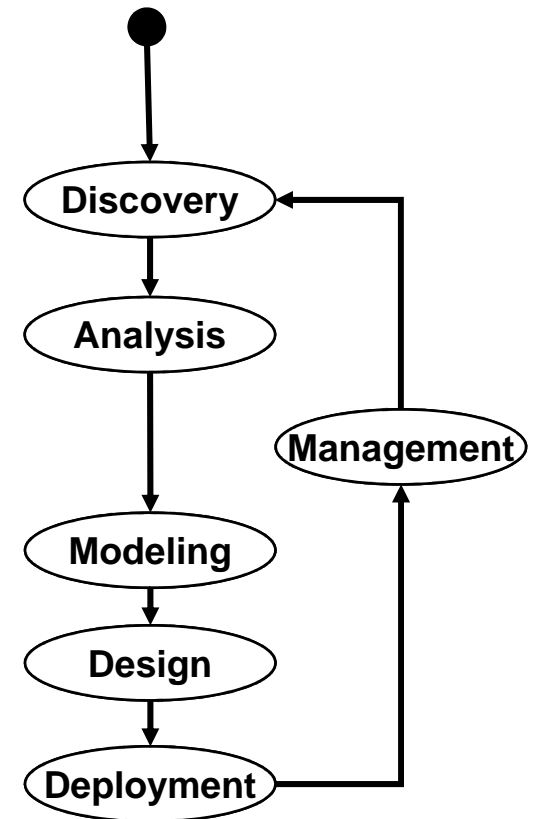
Oscar Chappel
Principal Consultant, Lead Business Policy Architect
ILOG, Professional Services

Agenda

- Business Rule Definitions
- Business Rule Sources
- Business Rule Characteristics
- Business Rule Templates
- Discovering Business Terms
- Discovering Business Facts
- Discovering Enforcement Rules
- Fact Modeling
- Business Rule Design

Many Definitions

- Declarations of **policies** or **conditions** that must be satisfied (OMG Analysis and Design Reference Model 1992)
- Units of business knowledge (Odell 1998)
- Statement that **defines** or **constrains** some aspect of the business. It is intended to assert business structure or to control or influence behavior of the business (GUIDE Business Rules Project 1995)
- A statement that can control or affect both the execution of a business process as well as the structure of the resources in the business. (Business Modeling with UML 2000)
- 10 Definitions on Pages 183 &184 of *"Principles of the Business Rule Approach"* (Ron Ross 2003)

Business rules are declarative, natural language statements that describe the way business people want their business to operate.

Business Rule Discovery

- **Business Rules are found in:**
  - Business Standard Operating Procedures (SOPs)
  - Laws/Regulations
  - Contract Terms and Conditions
  - Service Level Agreements
  - "Tribal Knowledge" aka "This is how we always do it"

Business Rules may be stated in an "IF … Then" format, but often aren't.

Business Rule Characteristics

- **Business Rules are expressed in natural language therefore they are almost always . . .**
  - Verbose
  - Ambiguous
  - Duplicative
  - Contradictory

- ## Through Term – Fact Analysis, we …

  - Eliminate Verbosity

  - Resolve Ambiguity

  - Eliminate Duplication

  - Resolve Contradictions

Term – Fact Analysis is the foundation for Business Rule Analysis

- Is there a difference between a business rule and a business policy?

  - An appendectomy must be performed in an OR.

  - The minimum uninsured motorist coverage in the state of FL is $2,000.00.

  - Destination storage in transit (DSIT) charges may be discounted a maximum of 15%.

Business Rule (Policy) Templates

Rejector: <Subject> must/must not <fact> [if/when <condition statement>] <start date> <end date>

Permission Statement: <Subject> may/need not <fact> [if/when/while <condition statement>] <start date> <end date>

Computation Rule: <Subject> = <mathematical formula> [if/when/while <condition statement>] <start date> <end date>

Derivation Rule: <Subject> must/must not be taken to mean <logical expression> [if/while/when <condition statement>] <start date> <end date>

Inference Rule: <Subject> must/must not be considered to be a <term> [if/while/when <condition statement>] <start date> <end date>

Imprint Rule: <Term> must/must not be set to <term/value> [if/when/while <condition statement>] <start date> <end date>

Presentation Rule: <Subject> must/must not be displayed in <media> <display manner> [if/when/while <condition statement>] <start date> <end date>

State Mandate: <Subject> mandates <mandate> [if/when/while <condition statement>] <start date> <end date>

System Rule (Policy) Templates

Rule Toggle: <Rule name> must/must not be enforced [if/when/while <condition statement>] <start date> <end date>

Process Toggle: <Subject> must/must not be enabled/disabled [if/when/while <condition statement>] <start date> <end date>

Data Toggle: <Data item> must/must not be created/deleted [if/when/while <condition statement>] <start date> <end date>

Imprint Rule: <Term> must/must not be set to <term/value> [if/when/while <condition statement>] <start date> <end date>

Presentation Rule: <Subject> must/must not be displayed in <media> <display manner> [if/when/while <condition statement>] <start date> <end date>

Process Trigger: <subject> must/must not be executed if/when/while <condition statement> <start date> <end date>

Rule Trigger: <Rule name> must/must not be fired if/when/while <condition statement> <start date> <end date>

What are Terms?

- **Terms are nouns that are used in daily business operations.**

- **Terms may describe:**
  - meaningful business concepts (Classes)
  - characteristics of business entities (Attributes)
  - the way business objects behave (Methods)

Examples:

Contract, Insurance Policy, Coverage, Insured, Deductible

Terms are the words of the **Business Vocabulary**

- Facts are combinations of terms that describe what business people know about their business.

- Facts may describe

  - the relationships between terms

  - interactions between terms (collaboration)

  - the meaningful combinations of the terms in the vocabulary.

Examples:

An Insurance Policy may contain many Coverages.
A Coverage describes the amount of protection against loss.
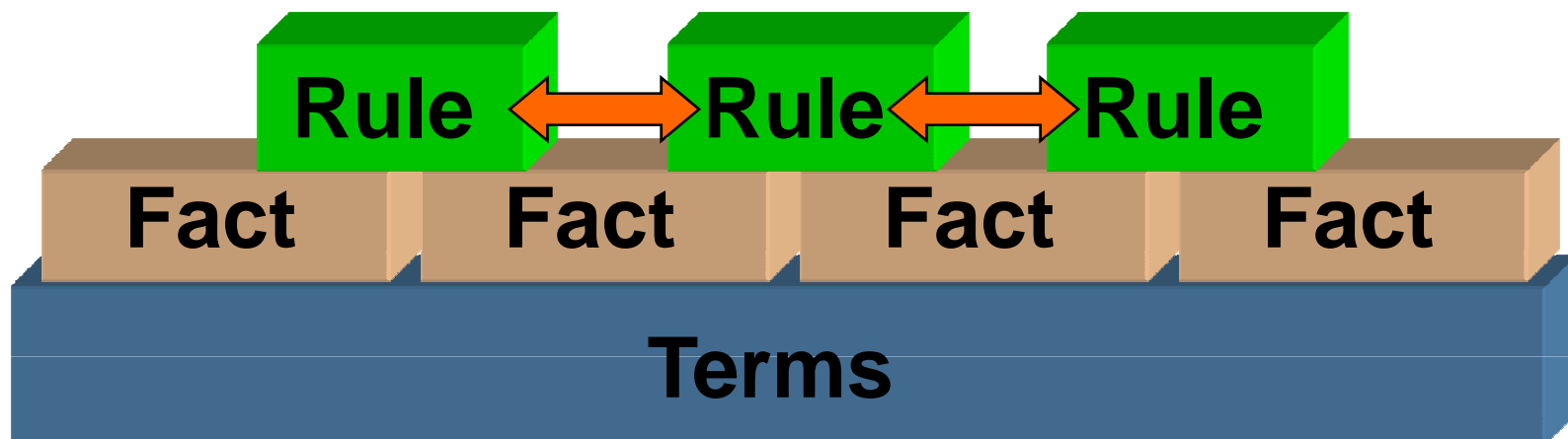**A Deductible is the amount the Insured must pay when a loss occurs.**

Facts are the **Business Knowledge**

What are Rules?

- **Three Rule Classifications**
  - Business Rules (Statement of business policy)
  - System Rules (Statement of system operations policy)
  - Enforcement Rules

- **Business Rules control the way a Business operates.**

- **System Rules control the way a System operates.**

- **Enforcement Rules are software that enforces Business and System Rules.**

Terms, Facts, and Rules

Term – A word or phrase that has meaning to business people.

Fact – A collection of terms that describe what business people know about their business. Facts are built on terms.
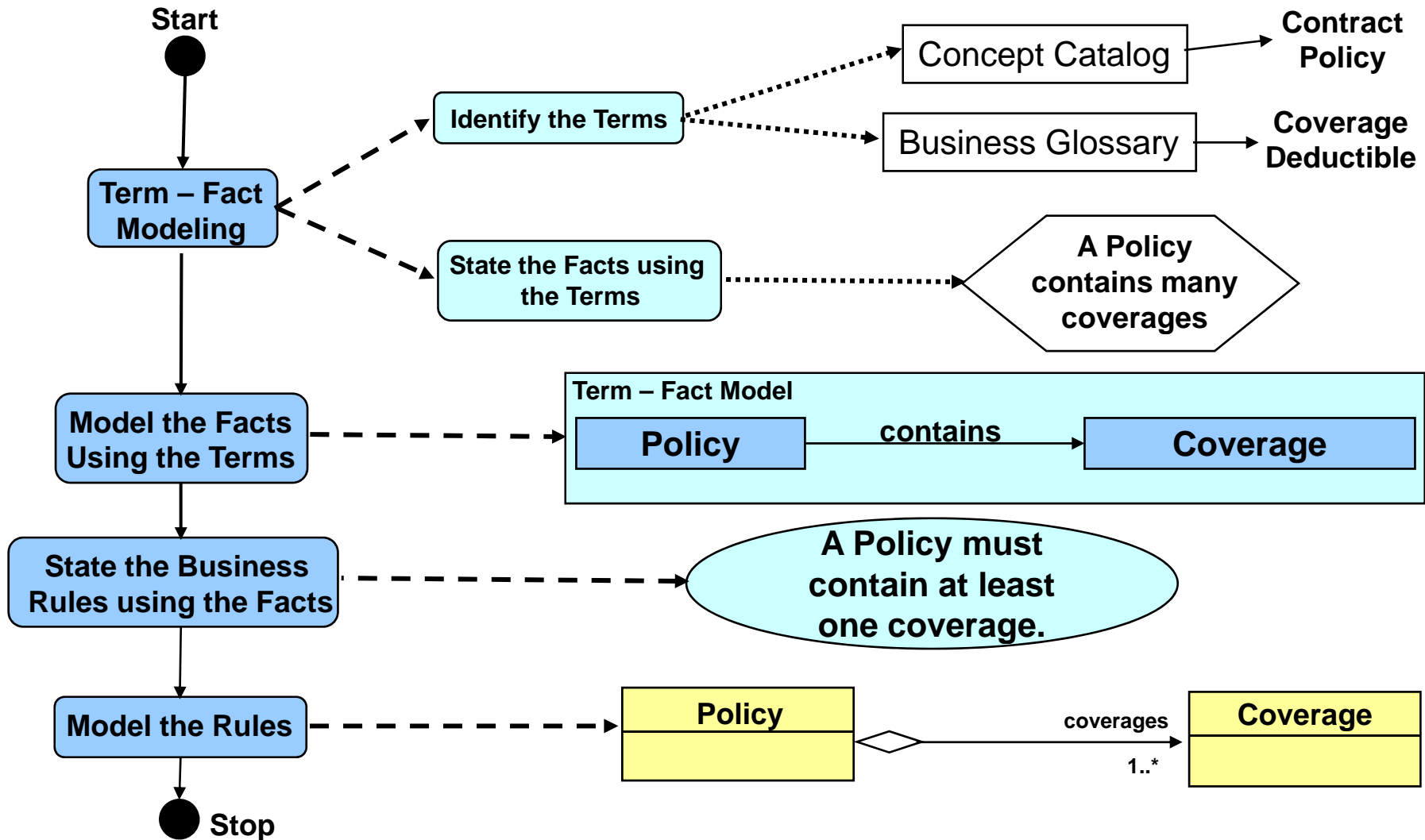
Rule – Uses facts to describe how business people want their business to operate. Rules may interact with other rules.
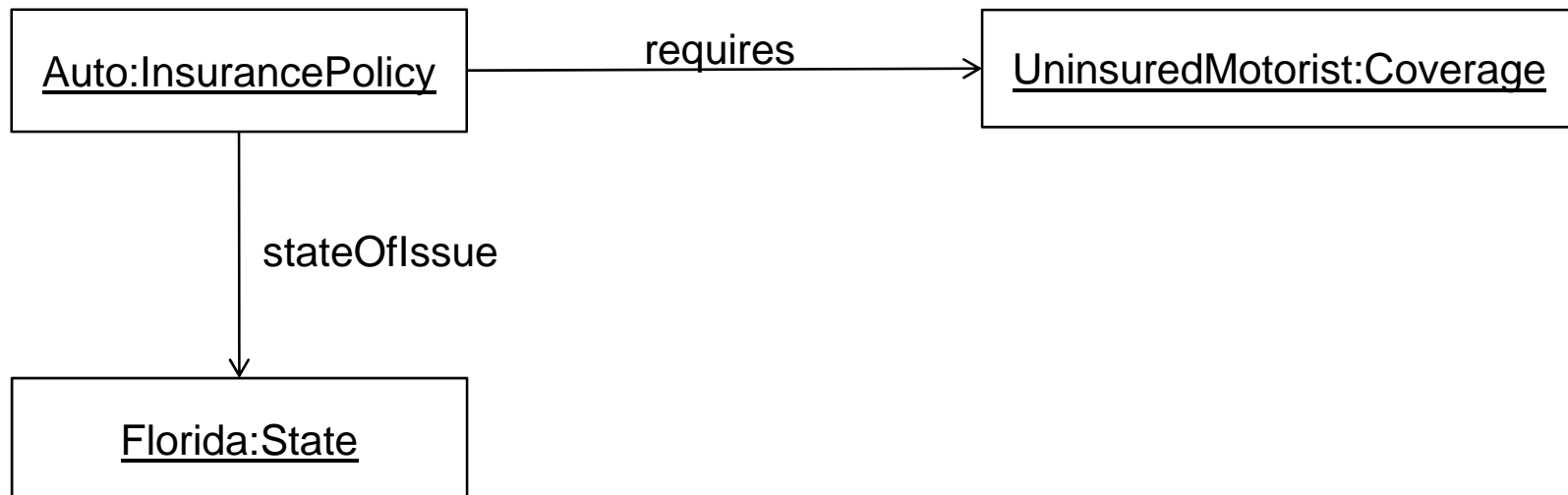
Business Rule Modeling

Start

Term – Fact Modeling

Identify the Terms

Concept Catalog → **Contract Policy**

Business Glossary → **Coverage Deductible**

State the Facts using the Terms

A Policy contains many coverages

Model the Facts Using the Terms

Term – Fact Model

Policy — contains → **Coverage**

State the Business Rules using the Facts

A Policy must contain at least one coverage.

Model the Rules

Policy ◇— coverages 1..* → **Coverage**

Stop

- ## Use the UML Object Model to Represent Business Policies

Every auto policy issued in FL must contain uninsured motorist coverage.

- ## Business Rules describe…

  - Business Policies

  - the way business people want the business to operate.

  - "what should be true" at any given point in time.

- ## Business Rules are…

  - Declarative, atomic statements

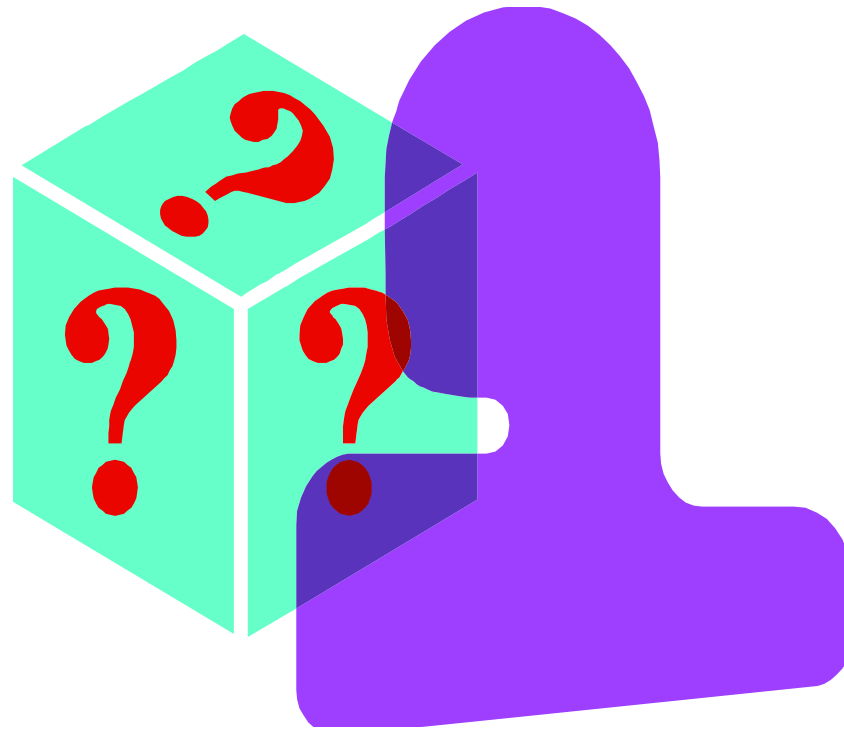 - Defined independently of the responsibility for who, where, when, or how of their enforcement

- "A Business Rule is distinct from any enforcement defined for it. A Business Rule and its enforcement are separate concerns." (article 4.5 of the Business Rules Manifesto)
- Business Rule enforcement can have many, different results
  - Admonishment
  - Warning
  - Reject

Summary

- Business Policies and Rules

- Rule Discovery

- Business Rule Templates

- Terms

- Facts

- Rules

- Modeling Terms, Facts, Rules with UML

- Enforcing Business Policies

Questions?

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