
Discovering System Use Cases Through Business Process Analysis

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About Today's Seminar

- **Your input**
 - Polls
 - Questions
- **This session will be recorded**

Introductions

- Boston University Corporate Education Center
- Today's speaker: Dr. Martin J. Schedlbauer

Agenda

- **In this presentation we will show you how to:**
 - develop business process workflows
 - derive system use cases from business use cases
 - link use cases to requirements
- **The presentation concludes with a question-and-answer session**

The Issue: Requirements

- **Business Analysts are counted upon to uncover requirements from the stakeholders**
- **This is frequently done through**
 - Interviews (one-on-one and group)
 - Observation
- **This assumes that users know what they need the system to do and how they want the system to work**
- **In practice, users do not often know what they want or how the system will fit into their business context**

Defining Requirements

- **Commonly, requirements are either:**
 - Written as individual narratives and catalogued in a list, or
 - Organized into use cases
- **Use cases provide context to the requirements**

Basic Use Case Analysis

- A use case is an interaction that a prospective user has with a system
- The prospective user is referred to as the *actor*
- Most actors are human users, but they can also be remote systems
- Each use case represents a goal that the actor intends to achieve by using the system
- Example:
 - The cashier intends to record the sale of items
 - The students intends to post an assignment

Use Case Diagram

- A use case diagram provides a visualization of the actors and their initiated use cases



- The diagrams can also show relationships between the use cases (inclusion, extension, generalization) and the actors (role map)

Common Pitfalls

- **Use cases are not necessarily**
 - interactions with user interfaces
 - screen flows
 - commands on the menu or tool bar
- **How do find the actors and the use cases?**
 - Who do you ask?
 - How do you ask?

Let's Consider an Example

- **Suppose you are asked to build a Point-of-Sale (POS) system for a coffee chain**
 - What are the requirements for such a system?
 - What are the use cases?
 - Who would you ask for input?
 - Who are the prospective users?

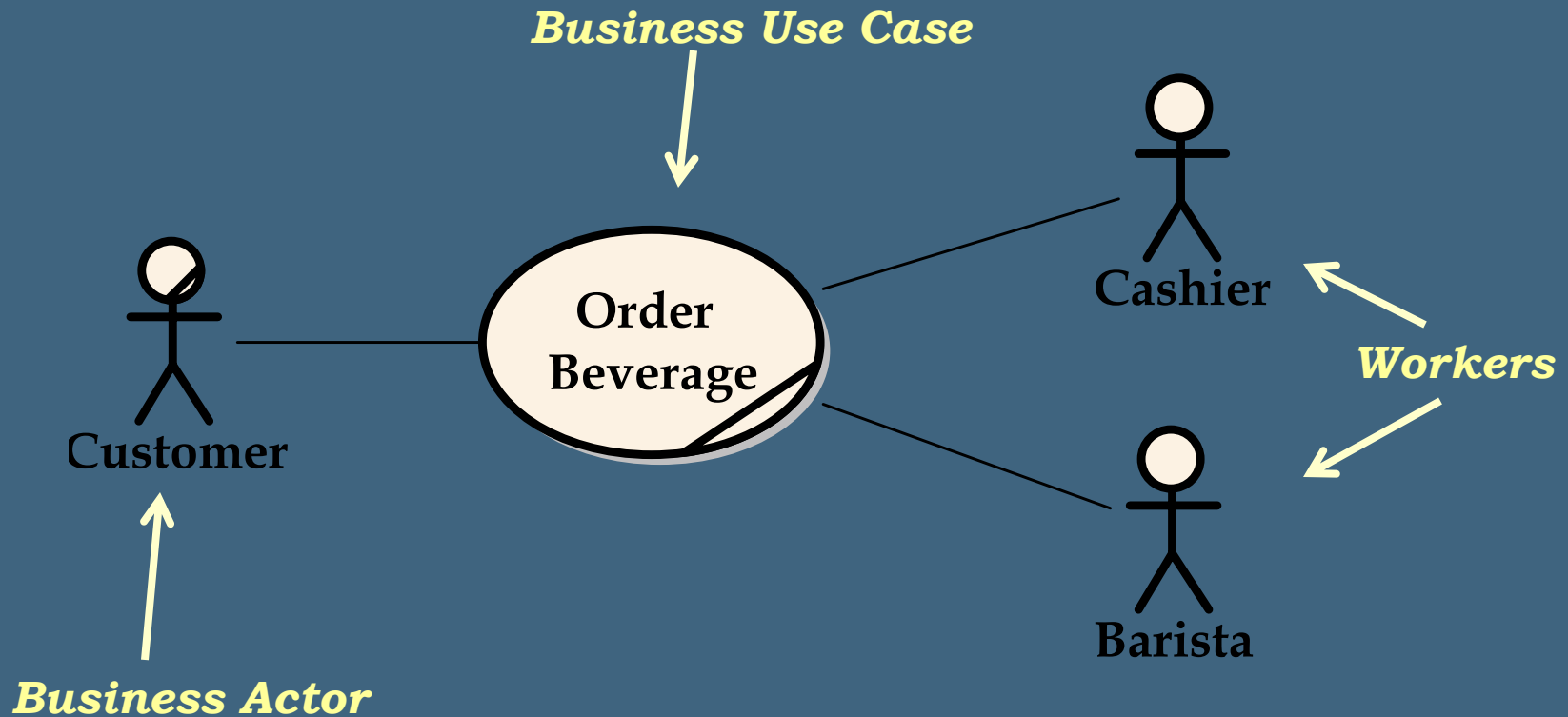
Model Business Processes

- A better approach might be to model the relevant business processes
- **Ask:**
 - Who interacts with the coffee shop?
 - What are they trying to achieve?
- **Answer (among many others):**
 - Customers are trying to purchase a beverage
- **Model the business process of how a customer is served a beverage**
- This is also sometimes called a *business use case*

Business vs. System Use Case

- A **business use case** documents an interaction with the organization
 - Can have many participants
 - Business Actor vs. Worker
 - Last minutes, hours, or days
 - Involves manual and automated steps
- A **system use case** documents an interaction by a **user (actor)** with an IT system
 - Involves the actor and the system
 - Lasts a short time
 - Is an interactive transaction

Business Use Case Diagram



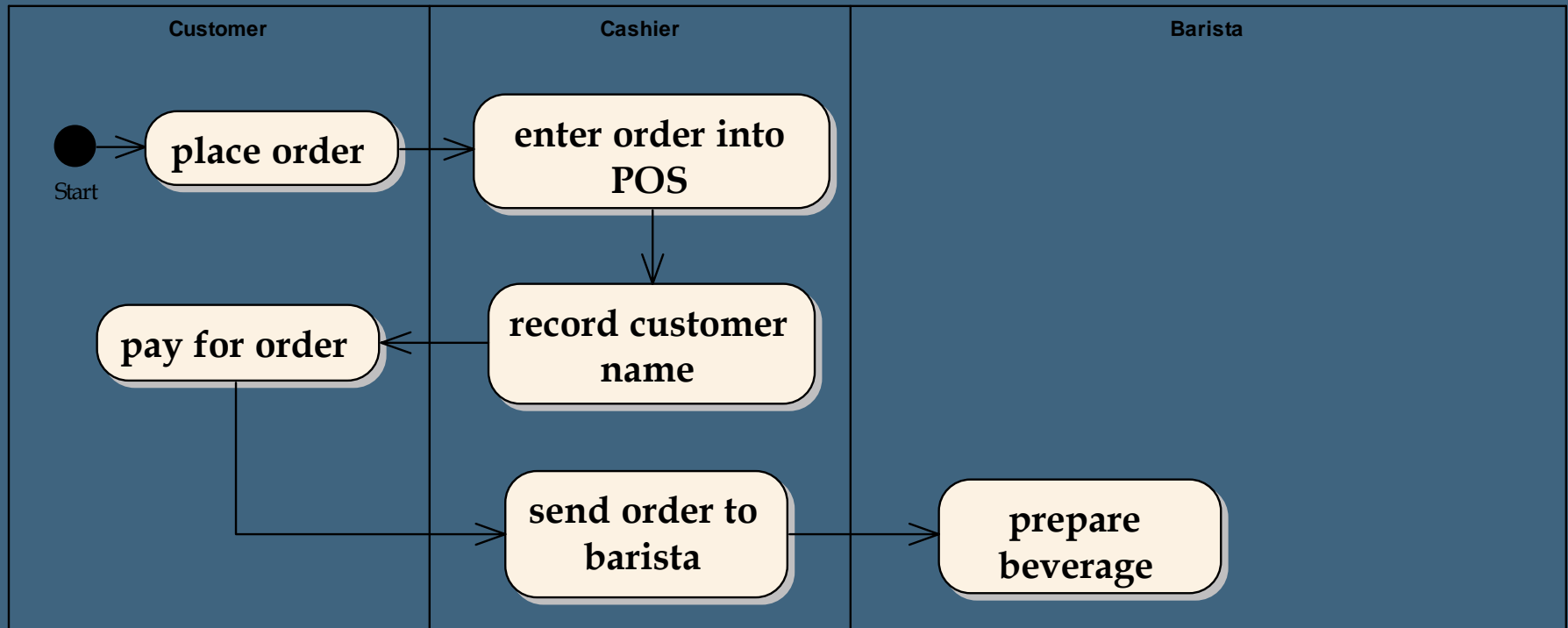
Business Use Case Model

- **The business use case model consists of:**
 - Business use case diagram
 - Process narratives
 - Workflow diagram
 - Business rules

Business Process Narrative

1. This process starts when the customer places an order
2. The cashier enters the beverage order into the point-of-sale system (POS)
3. The cashier asks for the customer's name and notes it on the order
4. The customer pays for the order
5. The cashier records the payment
6. The cashier communicates the order details to the barista (person making the beverage)
7. The barista prepares the beverage order
8. Upon completion of the order, the barista places the beverage on the pick-up counter and calls the customer's name
9. The process ends when the customer picks up the beverage

Business Process Diagram



- Above diagram is a UML Activity Diagram with partitions
- Not complete...

Dealing with Subflows

- Business processes can have alternate and exception flows
- These subflows are documented separately so as to keep the main flow easy to read
- This is beyond the scope of this presentation

Extracting System Use Cases

- A **business use case** documents an interaction by an *ultimate stakeholder* with the organization
- A **system use case** documents an interaction by a *user (actor)* with the IT system
- When it is difficult to find use cases or if the **granularity is not obvious, derive system use cases from business use cases:**
 - A system use case is an activity within a business process that can and should be automated by an IT system
 - Different activities within a business process may be automated by different IT systems

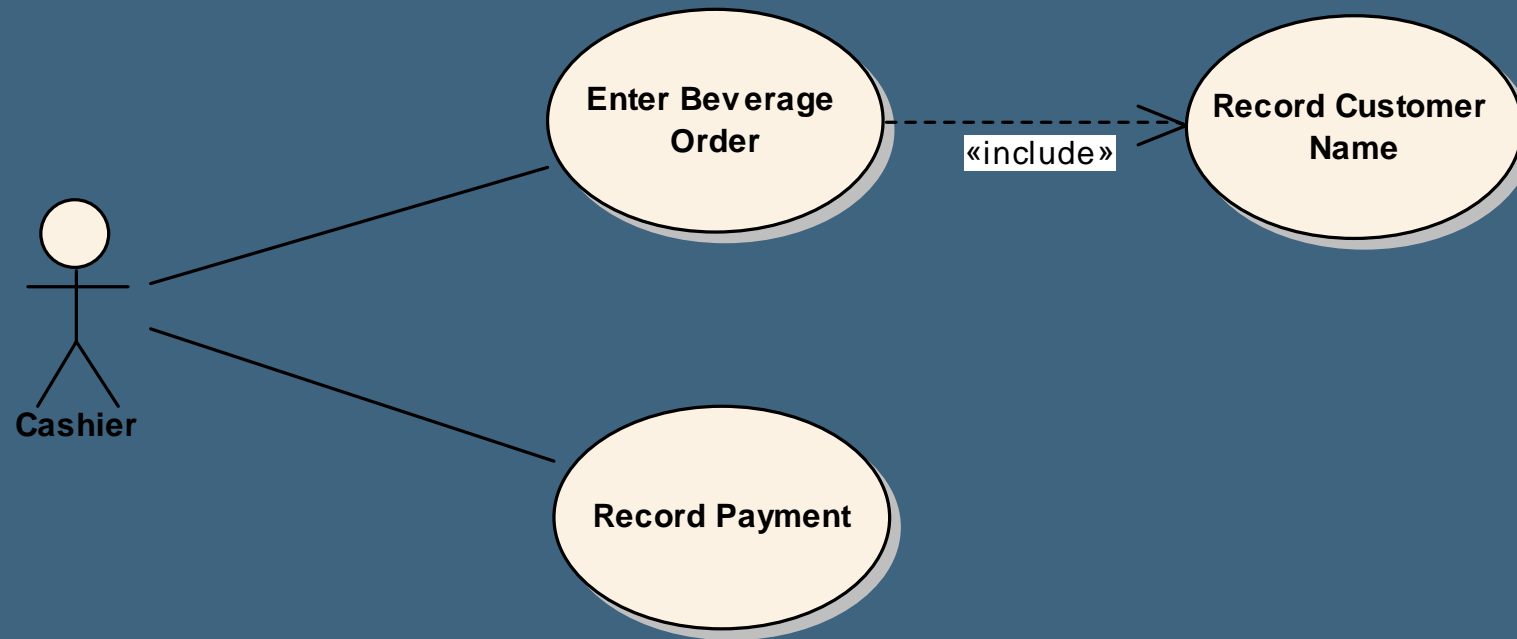
Example

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Identified System Use Cases

- **From the previous workflow, we can extract several potential system use cases:**
 - Enter beverage order
 - Note name of customer on order
 - This is probably an inclusion use case
 - Record payment
- **Each of the above system is use case must be further analyzed:**
 - Narrative
 - Activity Diagram
 - Functional and non-functional requirement

Use Case Diagram



Validation with Stakeholders

- For each identified system use case
 - Define the main course of events
 - For each step in the main course, identify alternate or exception flows
 - Document each subflow
 - For each step, identify applicable business rules or requirements; link the step to the external requirements
 - If the use case has many subflows, create an activity diagram to visualize the use case flows
 - Review the use case with the subject matter experts
 - Create screen flows or storyboard to illustrate the interactive behavior

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The Benefit

- System use cases that are identified through business use cases (processes) are more likely to fit into the workflow of a business
- This is requirements analysis in context of the business
- Also presents an opportunity to redesign the processes before the system is built
- Makes it more likely that the system supports the business processes

Upcoming Events and Q&A

- Thank you for attending today's webinar!
- Upcoming courses and events:
 - BA118 - Write Effective Use Cases
 - Waltham, MA – November 5 - 6, 2007
 - University of Houston, Houston, TX - November 26 - 27, 2007
 - Boston, MA - December 6 – 7, 2007
- For more information, visit us at: www.BUtrain.com