# Business Use Cases

Lecturer: Ngo Huy Bien
Software Engineering Department
Faculty of Information Technology
VNUHCM - University of Science
Ho Chi Minh City, Vietnam
nhbien@fit.hcmus.edu.vn

## Contents

I. Context Diagram
II. Scenarios (Workflow)
III. Storyboards
IV. Screenshots
V. Quick and Dirty Prototype
VI. Process Flow
VII. Activity Diagram

## Objectives

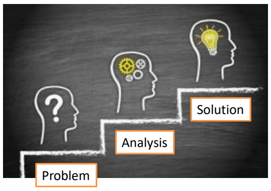
- To *analyze* application software business requirements.
- To *document* application software business requirements.

## References

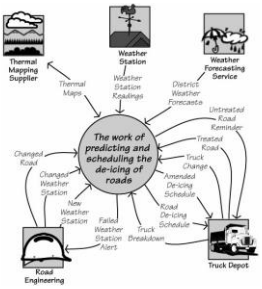
1. Suzanne Robertson and James Robertson (2012). Mastering the Requirements Process. Addison Wesley Professional.
2. Joy Beatty and Anthony Chen (2012). Visual Models For Software Requirements. Microsoft Press.

## Problem Analysis and Specification

- The purpose of software is to *solve problems*.
- How do we *analyze* and *document* problems?

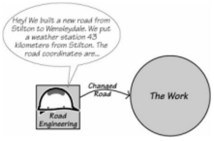


## Context Diagram



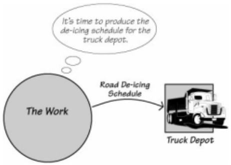
# Business Events

- Any system or piece of work responds to *things that happen* outside it. We call these happenings *business events*.
- A business event takes place *outside* the scope of the work.
- The work learns that it has happened through the arrival of an *incoming flow of information*.
- Business events are *determined using* the flows from the adjacent systems on the context diagram.


Hey! We built a new road from Stilton to Wensleydale. We put a weather station 43 kilometers from Stilton. The road coordinates are...
Changed Road
The Work
Road Engineering

# Time-Triggered Business Events

- A *time-triggered* business event happens when a prearranged time is reached.
- This is based on either
  - a *periodic occurrence* (for example, the end of the month, or 5 P.M. each day),
  - a *fixed time interval* (three hours since the last occurrence), or
  - a certain *amount of time elapsing* since another business event (30 days after sending out an invoice).


It's time to produce the de-icing schedule for the truck depot.
Road De-icing Schedule
The Work
Truck Depot

# Finding Business Events

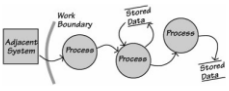
- You need some *knowledge of the work* to figure out the business events.
- Identify *key roles* (aka user types) from key stakeholders.
- Identify *business events* caused by a key role's action.

# Example

- Calling a cab.
- Waiving vs. calling vs. touching.

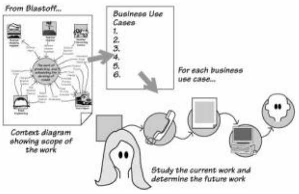
# Business Use Cases

- When a business event happens, the work responds by initiating a *business use case*.
- The business use cases are the work's responses to the business events.
- The work's response to the business event is to continue processing until all active tasks (the processes) have been completed and all data retrieved or stored.
- The business use case is a collection of *identifiable* processes, data that is retrieved and/or stored, output generated, messages sent, or some combination of these.



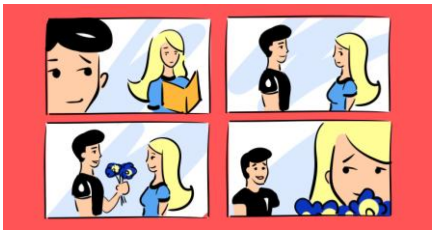
# Determining Business Use Cases

- From the work context diagram, you *determine* the business events and the resulting business use cases.
- The business use cases are studied *until* the analyst understands the desired functionality of the work and the part of that functionality to be performed by the product.


From Blastoff...
Business Use Cases
1.
2.
3.
4.
5.
6.
For each business use case...
Context diagram showing scope of the work
Study the current work and determine the future work

# Scenario (Workflow)

- The *scenario* tells the story of a business use case.

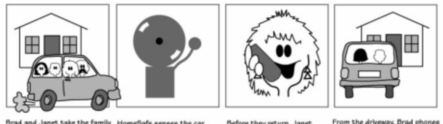


# Documenting Scenario: *Storyboards* [1]

- *Storyboards* are a prototyping technique borrowed from the film and cartoon industries.
- When a cartoonist is planning a cartoon, he sketches a number of linked pictures.
- These pictures identify the story line and guide the cartoonist in how many detailed pictures he needs to draw.

# Building a Storyboard

- *Building a storyboard* means thinking of the proposed functionality as a story and breaking it into a series of steps, or discrete actions.
- Draw each action as a panel of the story.



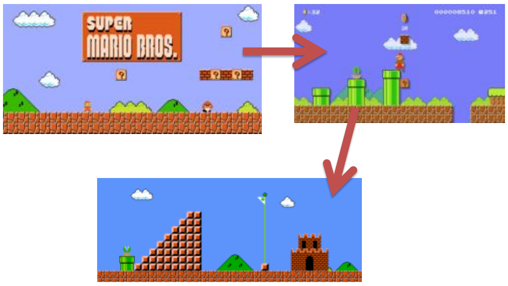
Brad and Janet take the family away for the weekend.

HomeSafe senses the car leaving, locks the doors, and turns on the burglar alarm. It also activates the random lights program. HomeClimate turns down the heating.

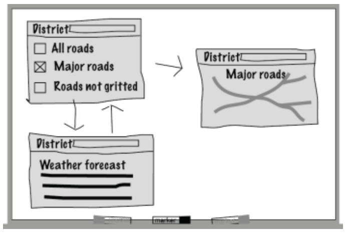
Before they return, Janet phones HomePlate to check the food supplies at home. She asks HomePlate to thaw a frozen chicken.

From the driveway, Brad phones HomeSafe to open the garage door and unset the burglar alarm. HomeMusic plays their favorite homecoming music. HomePlate starts cooking the chicken.

# Documenting Scenario: *Pictures*

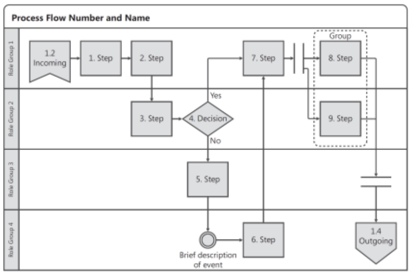


# Documenting Scenario: *Quick and Dirty Prototype*



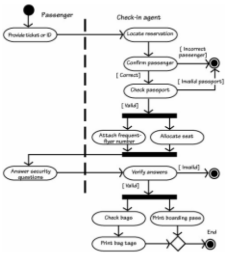
https://balsamiq.com/

# Documenting Scenario: *Process Flow* [2]



https://www.lucidchart.com

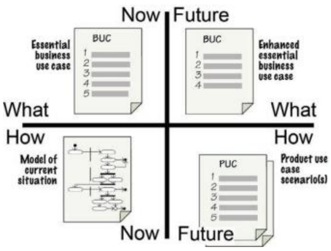
## Documenting Scenario: *Activity Diagram*



DON'T PANIC

See **Software Requirements: 04.1. Unified Modeling Language** for details.

## The Brown Cow Model


Now
Future
BUC
Essential business use case
1
2
3
4
5
BUC
Enhanced essential business use case
1
2
3
4
What
What
How
How
Model of current situation
PUC
Product use case scenario(s)
1
2
3
4
5
Now
Future

## Further Reading

- Tom DeMarco (1979). Structured Analysis and System Specification.
  - Data-flow diagram.
- Stephen M. McMenamin and John F. Palmer (1984). Essential Systems Analysis.
  - Event-partitioning approach.
- Edward Yourdon (1989). Modern Structured Analysis. Prentice Hall.

## Thank You & See You Again