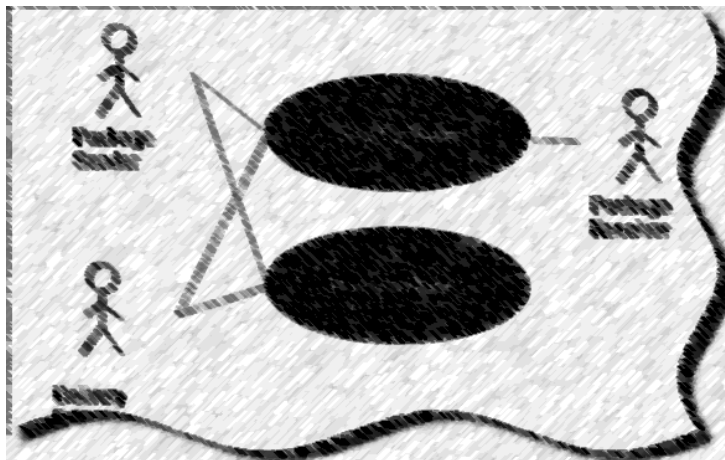


## CREATING AHA MOMENTS THROUGH VISUALS

Kathy O'Brien  
Joe Ferrara



A screenshot of a mobile application form titled "Delivery Attempt Data Entry". The form contains the following fields and options:

- Order #: 0123245
- Order Date: 1/15/2015
- Customer Name: Kathy
- Address: 123 Main Street, Lansdale, PA 19446
- Delivery Attempt: Radio buttons for Attempt 1, Attempt 2, and Attempt 3.
- Status: A dropdown menu currently showing "Failed".
- Buttons: "Save" and "Cancel".

# Learning Objectives

1. Learn how to better incorporate visual techniques into your requirements
2. Learn when to use each technique to best express your requirements
3. Learn about tools that could help with the creation of these visuals



# Agenda

Review Learning Objectives

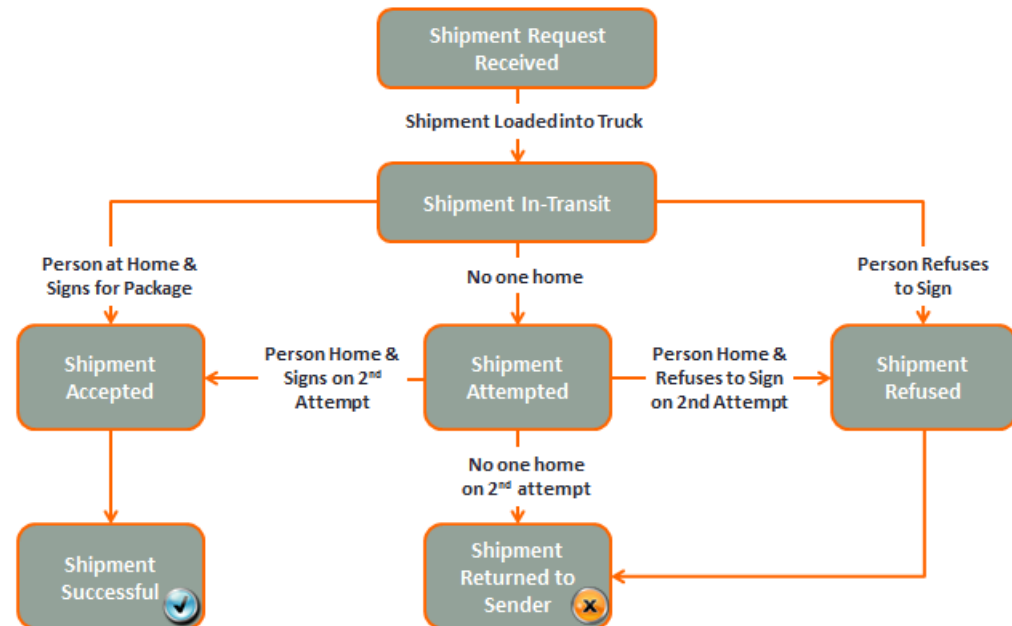
Review 8 Visual Techniques (with Examples)  
for Business Analysts

Helpful Tools to enable the use of the  
Techniques

Tying Visual to Textual Requirements

# Why Get Visual?

The Shipping Status starts as “Shipment Request Received”. Once it is loaded on the truck, the Shipping Status is set to “Shipment in-Transit”. From the “Shipment in-Transit” state the status can go 3 ways. First, if the person is home and signs for the package it goes to “Shipment Accepted”. From “Shipment Accepted” it then goes to “Shipment Successful” which is the final state. The second state it can go from the “Shipment in-Transit” state is to “Shipment Attempted” if no one is home blah blah blah ....



## 8 Visual BA Techniques

1. Business Process Model (BPM)
2. Use Case Model
3. SIPOC
4. Generic Diagram
5. Prototype
6. State Diagrams
7. Context Diagram
8. Mind Map

# Business Process Model

**What:** A diagram that shows the sequence of activities in a process and the roles that perform them

**Why:** To understand activities of a process, the sequence and decision points between them, and touch points between the roles performing the activities and decisions.

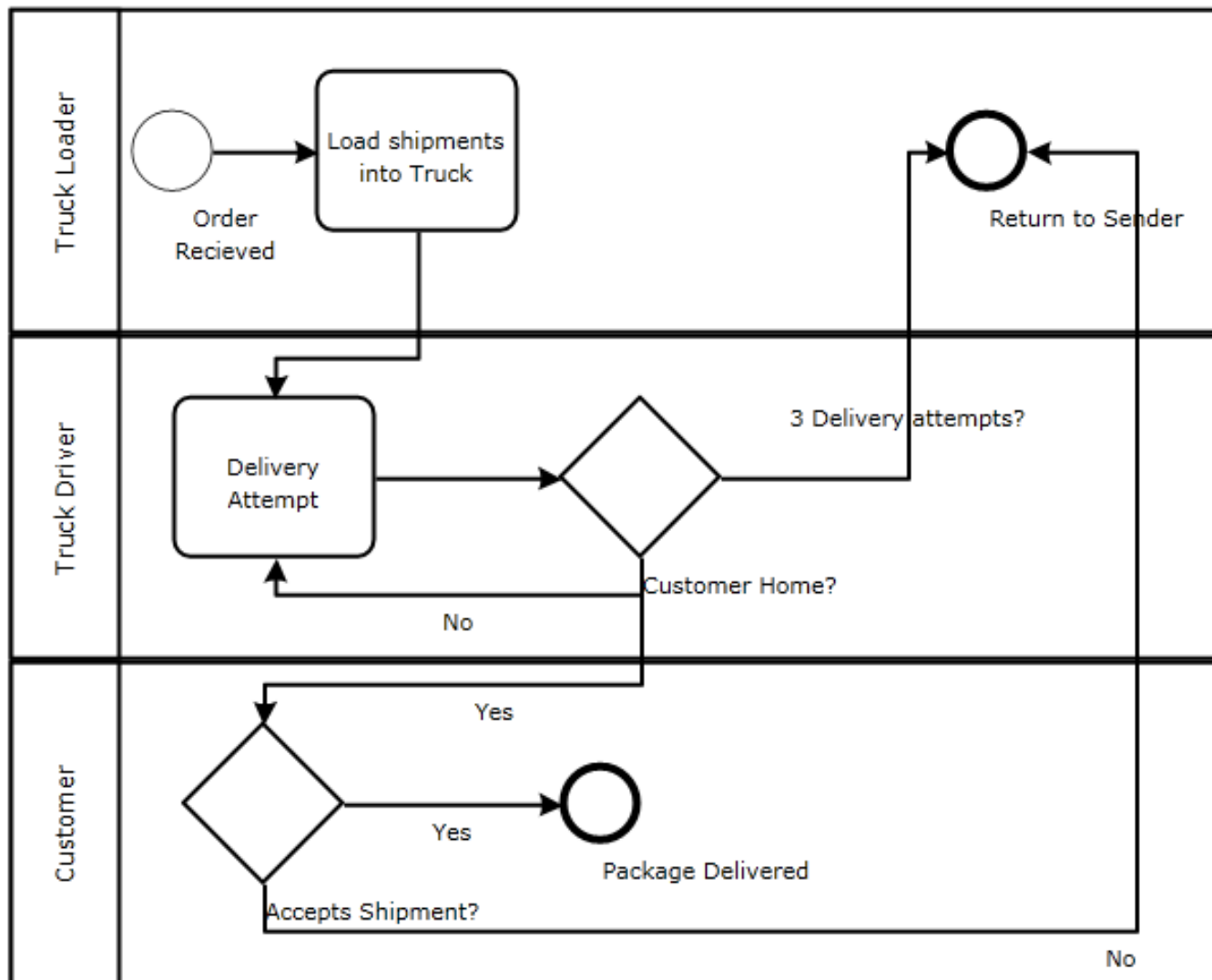
**When:**

- Project with many stakeholder and handoffs
- Business Re-Engineering or significant change to a business process (not necessarily system centric)
- Project that will require significant end user training

**How:**

- Determine level of detail (may be driven by time constraints)
- Define Roles (swim lanes)
- Define Activities & Decision Points
- Connect activities

# Business Process Model – Shipment Example



# Use Case Model

**What is it:** A diagram showing the functional scope of the system, the participants (actors) of the system, and the relationship between each.

**Why:** To define the scope and the interactions across the system boundaries.

**When:**

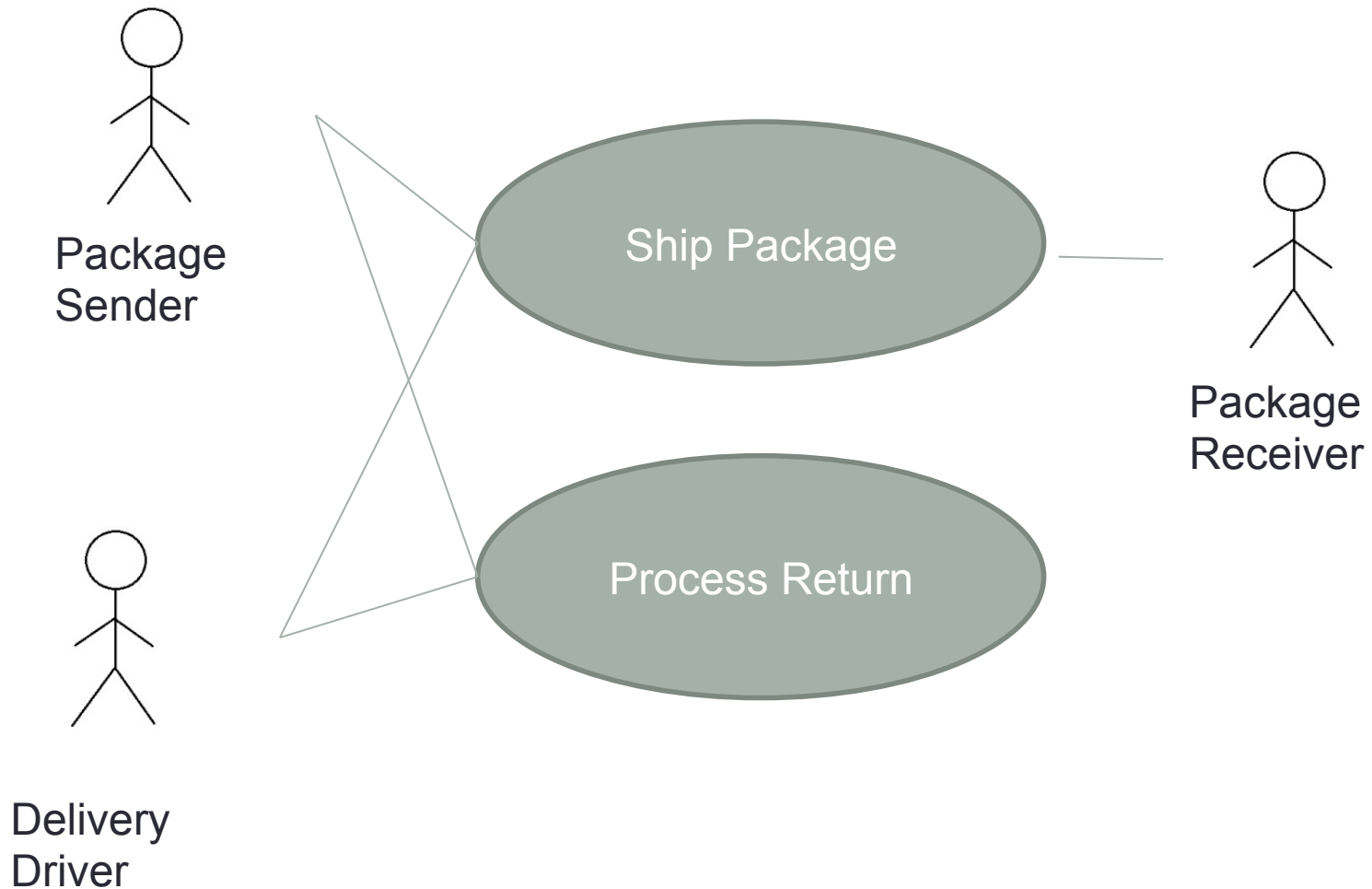
- System Scoping/Functional Decomposition
- Top level use case to connect the detailed use cases
- Determine stakeholders of the system and their use of the system

**How:**

- Represent the use cases as an ellipse
- Represent the actors as stick figures
- Connect the actors to the use cases



# Use Case Model – Shipment System



# SIPOC

**What is it:** A visual overview of a process that shows **S**uppliers, **I**nputs, **P**rocess, **O**utputs, and **C**ustomers. This is primarily a SIGMA tool.

**Why:** To define the scope of a project and/or process which includes stakeholder and boundaries

**When:**

- Using six sigma methodology or stakeholder familiar with this methodology
- Project with many stakeholder and handoffs
- Scope processes (shows inputs/starting point and outputs)

**How:**

- Define list of Suppliers
- Define list of Inputs
- Define Steps of Process
- Define Outputs/Outcomes of the process
- Define end Customers of the process

# SIPOC – Shipment Example

Suppliers	Inputs	Process	Outputs	Customers
Package Sender	Package Received to Delivery Warehouse	<ol style="list-style-type: none"><li>1. Load Package into Truck</li><li>2. 3 Delivery Attempts</li><li>3. Delivery Successful</li></ol>	<ul style="list-style-type: none"><li>• Delivered or Returned package</li><li>• Delivery Status</li></ul>	Package Receiver

# Generic Diagram

**What is it:** Any graphical representation that helps clarify requirements.

**Why:** To visualize a complex concept and help crystalize it for the stakeholders

**When:**

- To clarify a requirement during scoping
- Clarify a grouping of textual requirements
- When a team is struggling to come to a common understanding
- When working with visual learners

**How:** JUST MAKE A VISUAL! Be Creative!

# Generic Diagram– Shipment Example



Source: <http://vertsys.com/vsi/parcellogic/parcellogic.htm>

# Prototype

**What is it:** A visual mock-up of a user interface that allows stakeholders to experience the solution. These visuals can range from a low-fidelity wireframe through a high-fidelity functional prototype

**Why:** To show how a business process will be enabled by a tool and what it will generally look like.

**When:**

- Functional Requirements (not appropriate for business requirements)
- System oriented stakeholders
- When early and rapid feedback is desirable or working in a JAD session
- When user experience is highly valued (ex. External Websites)

**How:**

- Identify fidelity level
- Identify functions to prototype
- For each function, define the main screen and the UI elements on the screen (buttons, links, data fields, etc)
- Iterate through the business function and connect various prototypes to show a system flow

# Prototype – Shipment Example

Delivery Attempt Data Entry

Order #

Order Date

Customer Name

Address

Delivery Attempt:  Attempt 1  
 Attempt 2  
 Attempt 3

Status

# State Diagram

**What is it:** A graphical representation of an entity's lifecycle (ex. Shipment Status)

**Why:** Drive understanding of states and their associated transitions through a process for key entities

**When:**

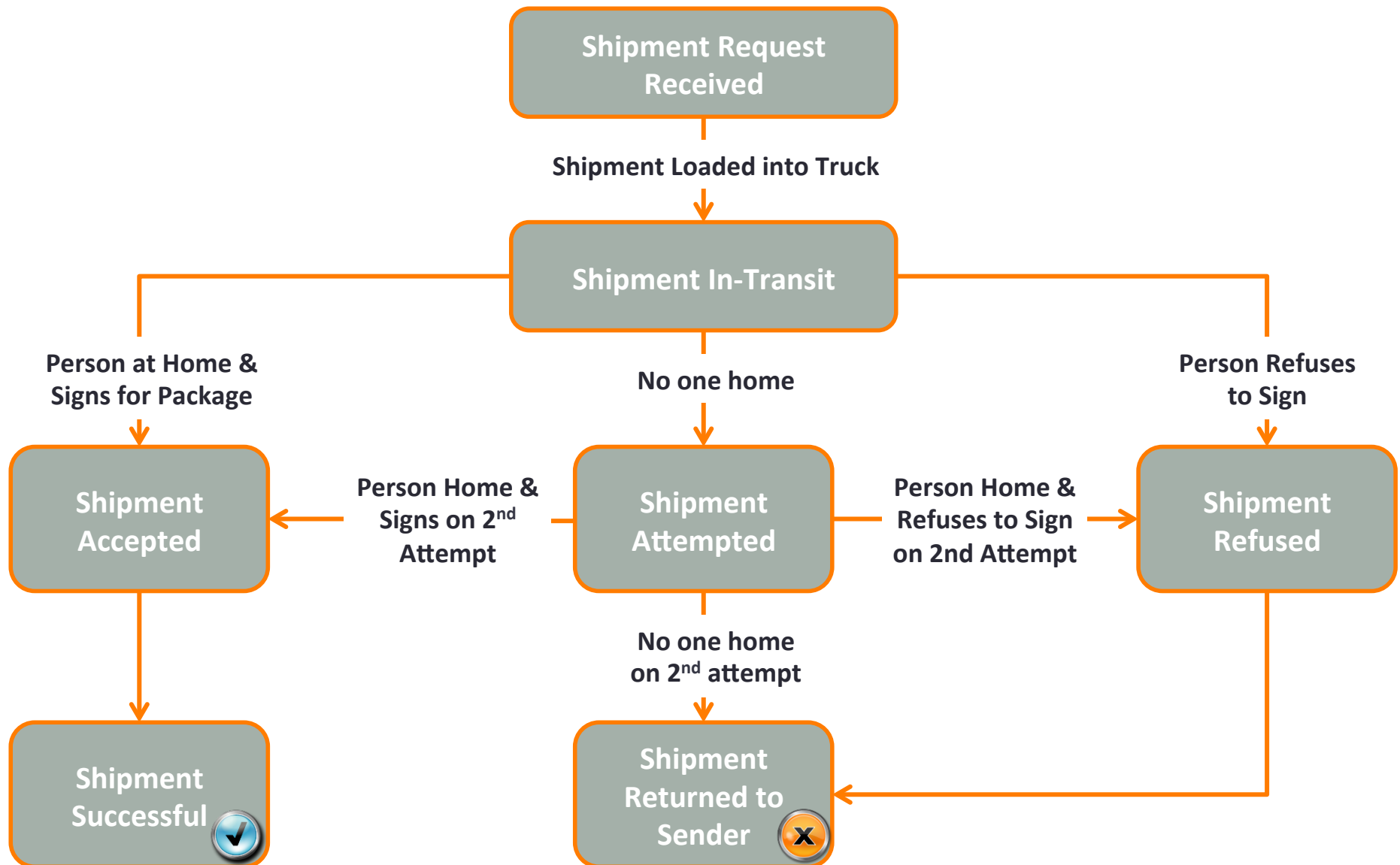
- A project that has a large workflow aspect
- Stakeholders that are data oriented

**How:**

- Define states of the entity
- Ordering States
- Draw Transition lines
- Define triggers for transitions and place them on transition line



# State Diagram - Shipment Status Example



# Context Diagram

**What is it:** A diagram that shows information flowing between the system and its external entities (people or systems)

**Why:** To define the scope of a project and the integration points external to the system boundaries

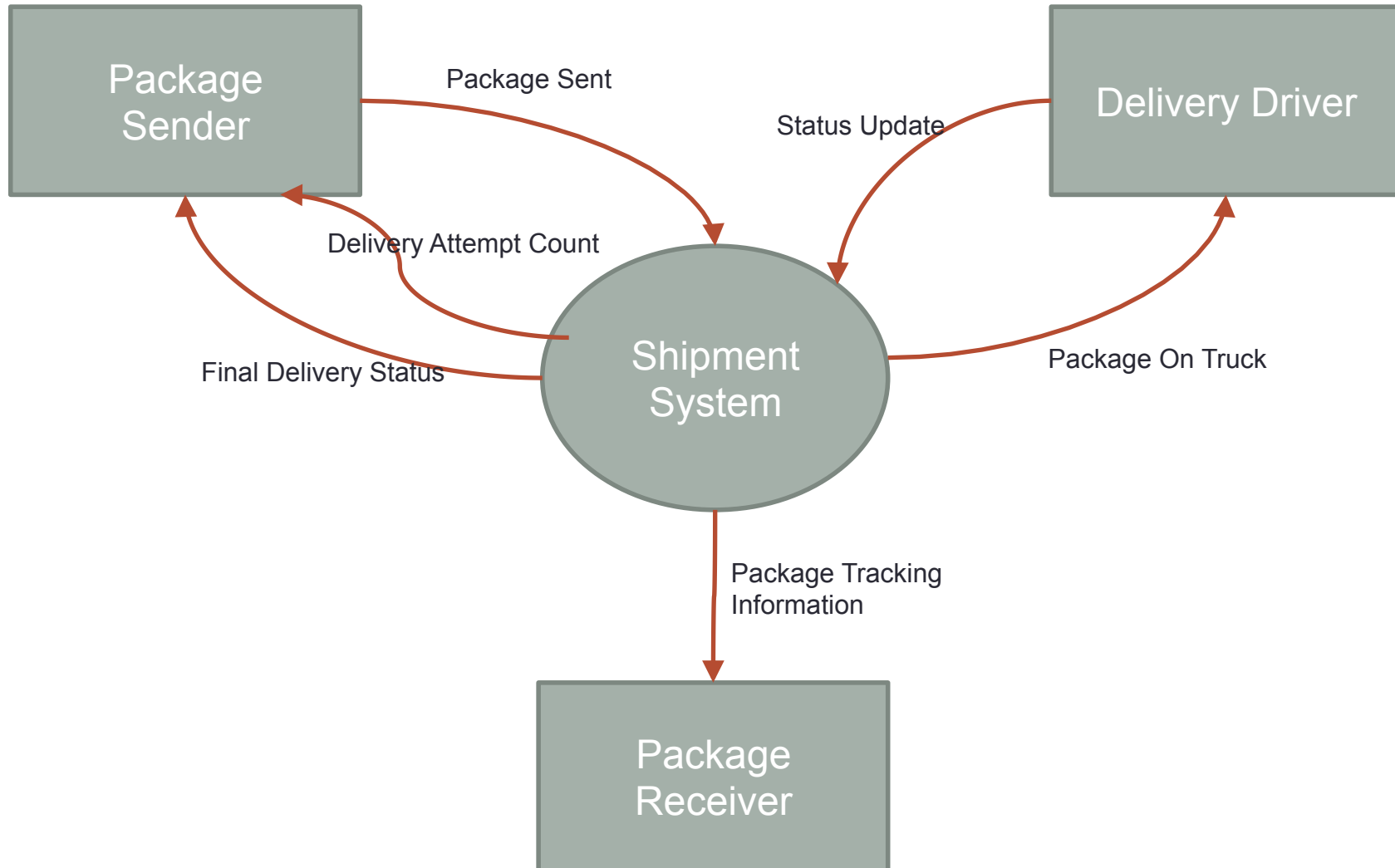
**When:**

- Project with a lot of touch points and data
- One page diagram of a complicated architecture
- Stakeholders that are data oriented

**How:**

- Draw the main system of scope in the center
- Draw the external entities it interacts with
- Draw lines to and from the external entities
- Label lines with inputs and outputs

# Context Diagram – Shipment Example



# Mind Map

**What is it:** Graphical technique for rapidly gathering information during elicitation.

**Why:** Allow people to associate ideas to a central concept in a visually organized way

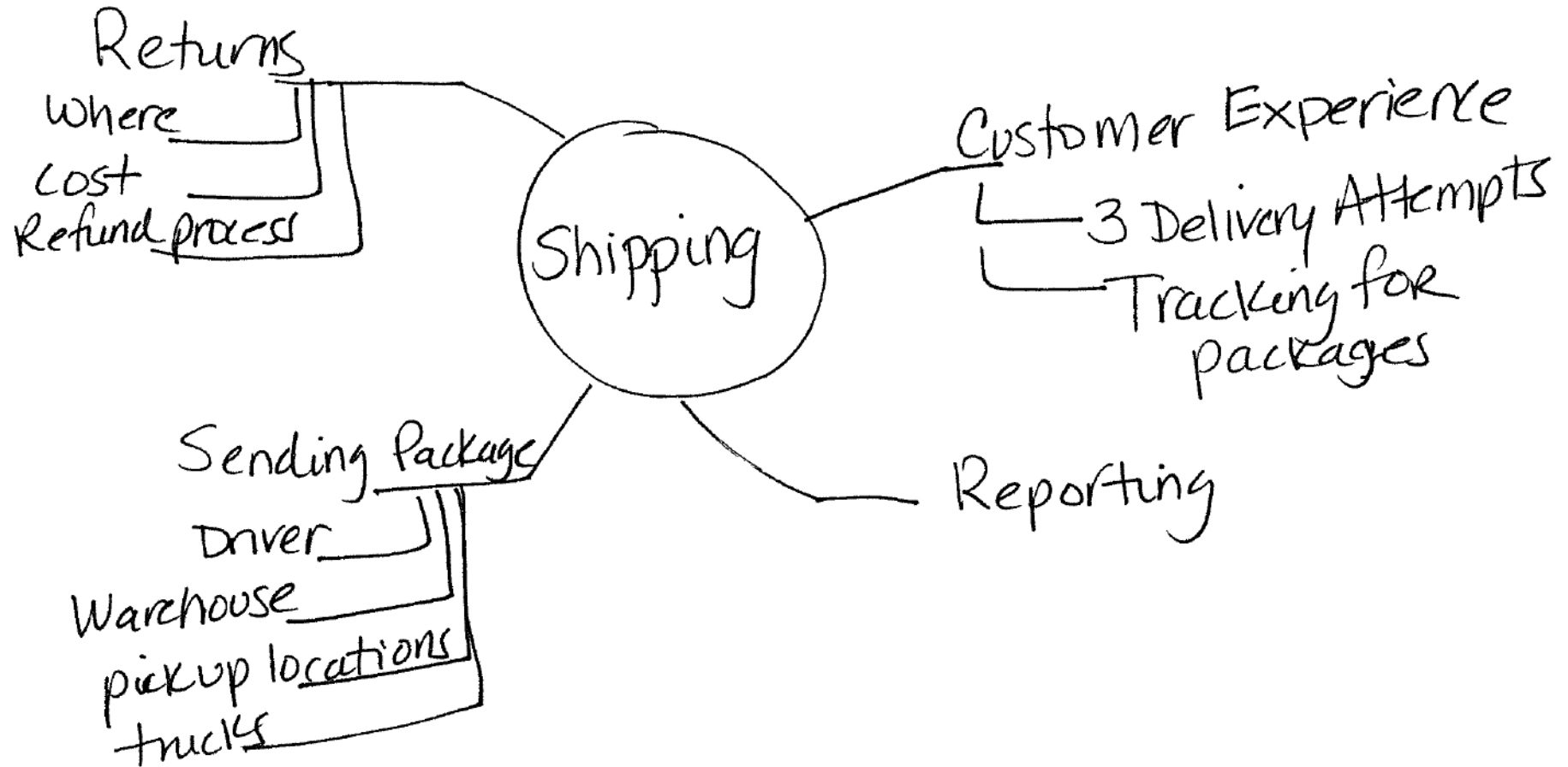
**When:**

- Brainstorming for new concepts
- Align disparate stakeholders on a concept
- Scoping a new feature
- Large group of stakeholders with many ideas

**How:**

- Start with a central concept in the center concept
- Major ideas are connected to the center concept
- Branches off each major idea
- Put ALL ideas on the mind map during brainstorming
- Reconcile mind map upon completion

# Mind Map– Shipment Example



# Helpful Tools

Technique	Basic Tools	Advanced Tools
Business Process Model	<b>PowerPoint, Visio</b>	<b>Blueprint</b> , SmartDraw, ARIS, Lucidchart, Visible Analyst
Use Case Model	PowerPoint	<b>Blueprint</b> , RavenFlow, CaseComplete
SIPOC	<b>Word</b> , PowerPoint, Excel	
Generic Diagram	<b>PowerPoint, Visio</b> , Whiteboard, Paper	<b>Blueprint</b>
Prototype	<b>PowerPoint</b> , Visio	<b>Blueprint</b> , iRise, Axure
State Diagrams	<b>PowerPoint</b> , Visio	<b>Blueprint</b>
Context Diagram	<b>PowerPoint</b> , Visio	<b>Blueprint</b> , Visible Analyst
Mind Map	Whiteboard, Sticky Notes	<b>MindManager</b> , Plethora of Others

**Does anyone have a favorite tool they want to share about?**

Note: Tools in bold are ones we have used

# Tying Visual to Textual Requirements

- Tips for building a requirements package with textual requirements and visual techniques
  - Requirements planning should be done to determine everything that is included in this package up front
  - Determine approach to the package (ex. Will you write all visual diagrams as textual requirements as well or only the details of the diagram)
  - Consider time constraints when determining which visuals to use and the level of detail
  - Be as consistent as possible across sections of the package
  - Ensure all stakeholders understand the techniques and how they are being used
  - Ensure the package is understood correctly across all groups and systems (ex. Testers needs to tie to test cases)
  - Leverage visuals to set the framework for each requirements section and provide context for the textual requirements
  - Visuals can be included to provide additional detail or elaboration of particular textual requirements.

# References

- The Software Requirements Memory Jogger, By: Ellen Gottesdiener
- Business Analysis Body of Knowledge (BABOK), IIBA
- Requirements Modeling Made Easy Quick Reference Card, Requirements Quest, Roxanne Miller
- Visual Models for Software Requirements by Joy Beatty.