REDUCE AMBIGUITY, GET BUY-IN, INCREASE QUALITY

¡THREE AMIGOS!

WHO WE ARE…

M. Jeff Wilson

Jeff is a software developer, published author, certified scrum master and SAFe® 4 Program Consultant, and lifelong learner. He has 35 years of working with teams in the telecommunications, insurance, traffic engineering, retail, and other industries to develop and deliver solutions and improve processes.

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Danny James

Danny is a software engineer who has a passion for the integration and delivery of complex enterprise solutions. He has 20 years experience in software and hardware testing/quality assurance, automation, and DevOps.

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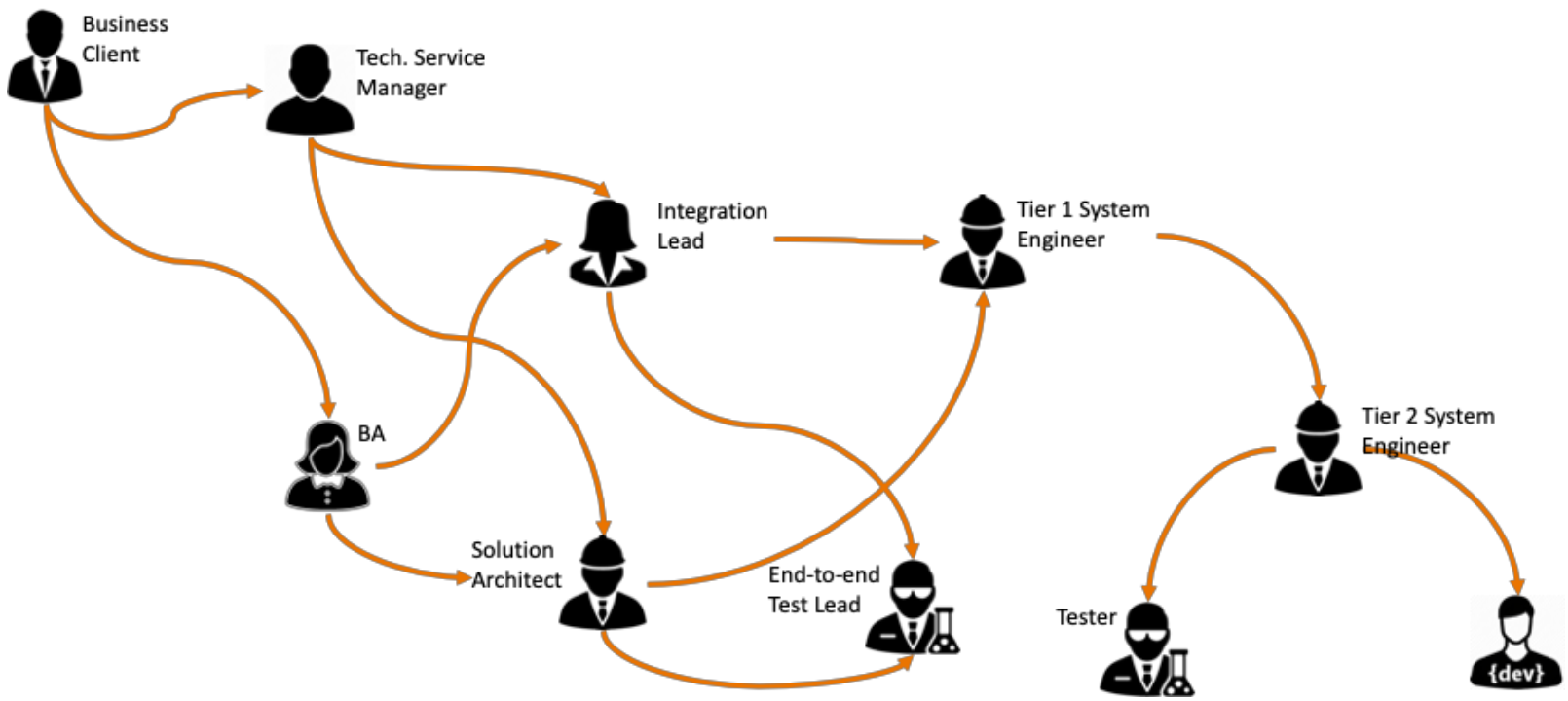
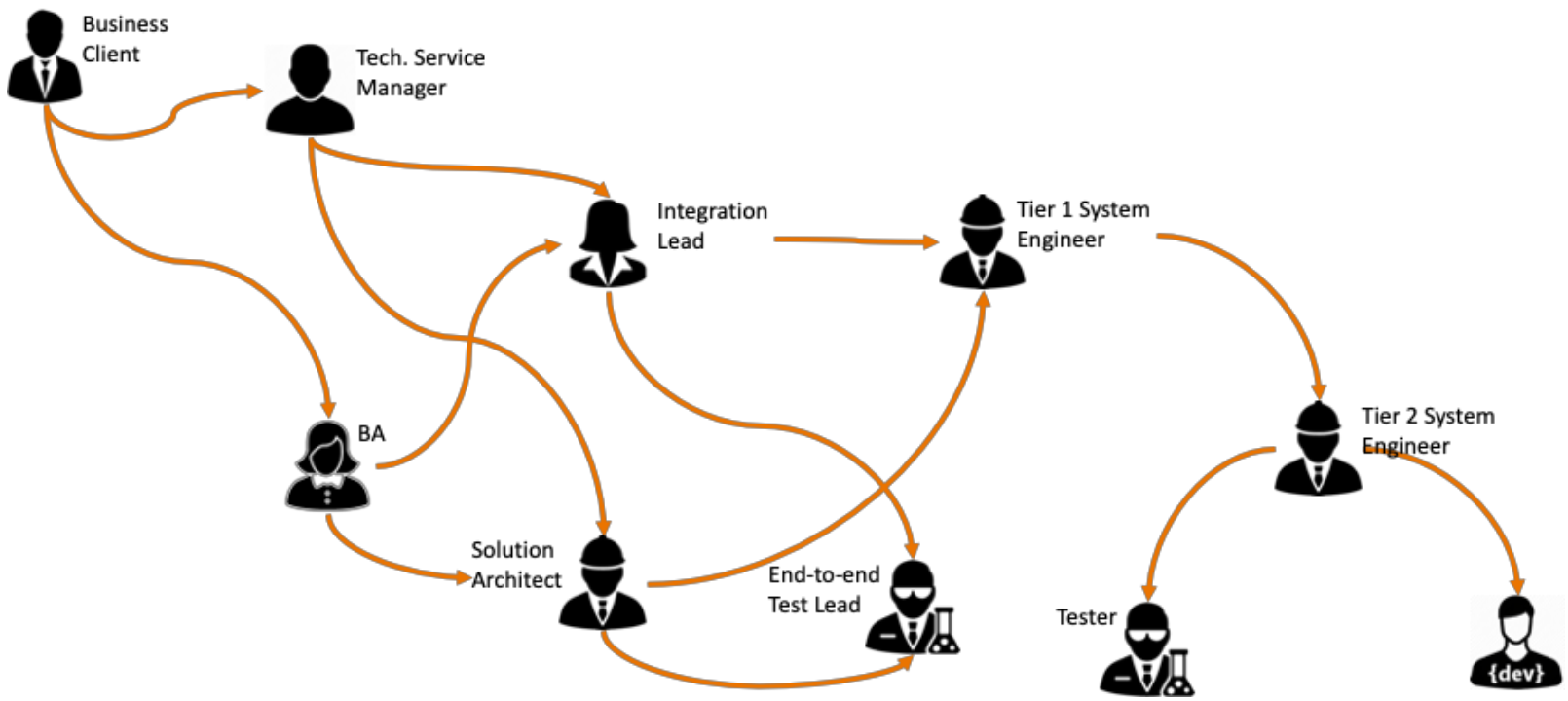
RETROSPECTIVES

- Client did not get what they expected
- Disconnect between dev & QA
- More use-cases found during development
- Requirements too technical for business
- Hard to test
- Team interrupted with defects from last sprint

GIANT CORPORATION IT PROCESS



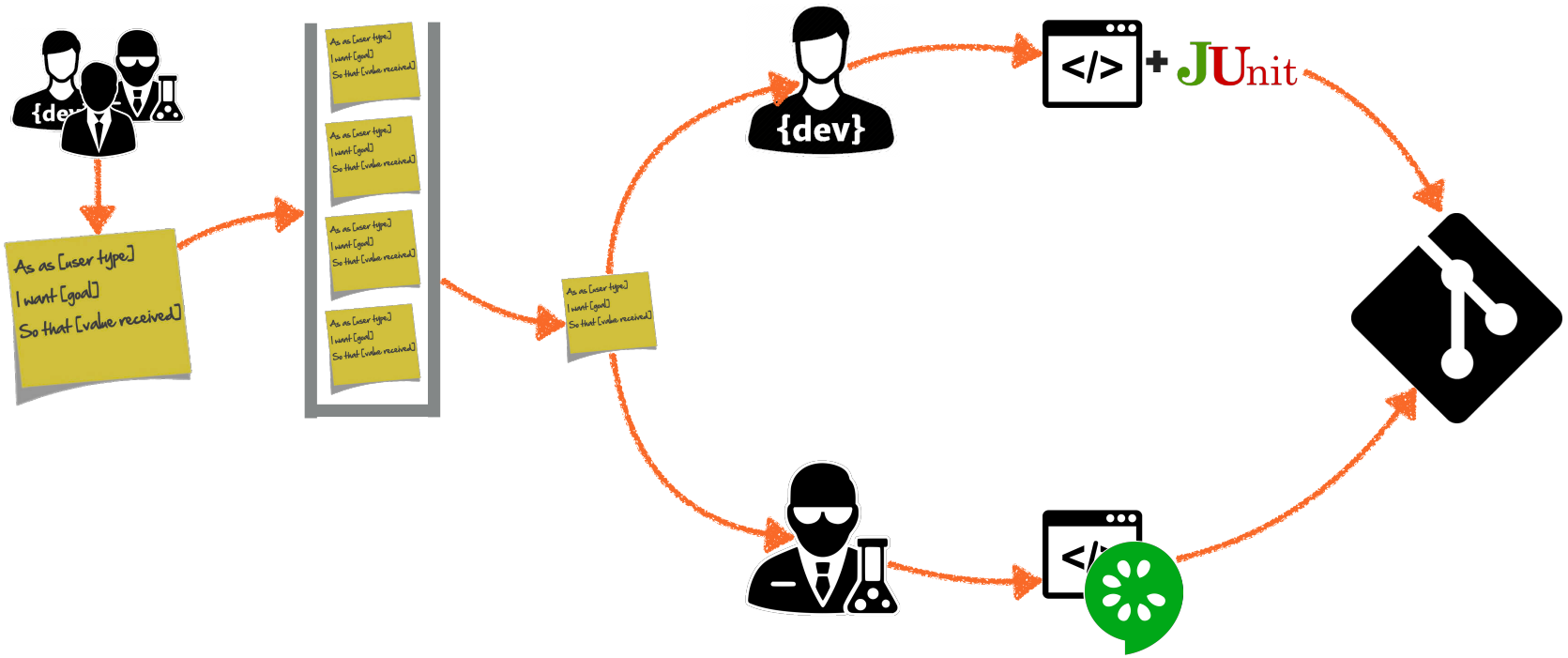
GIANT CORPORATION IT PROCESS (AKA, THE TELEPHONE GAME)



BEHAVIOR DRIVEN DEVELOPMENT TO THE RESCUE

- Describe behavior from perspective of users
- Just-in-time
- Via examples
- Documented in Gherkin
- Automated by Cucumber

BDD PROCESS OVERVIEW



CUCUMBER IS A TESTING FRAMEWORK.

Pretty much everyone ever

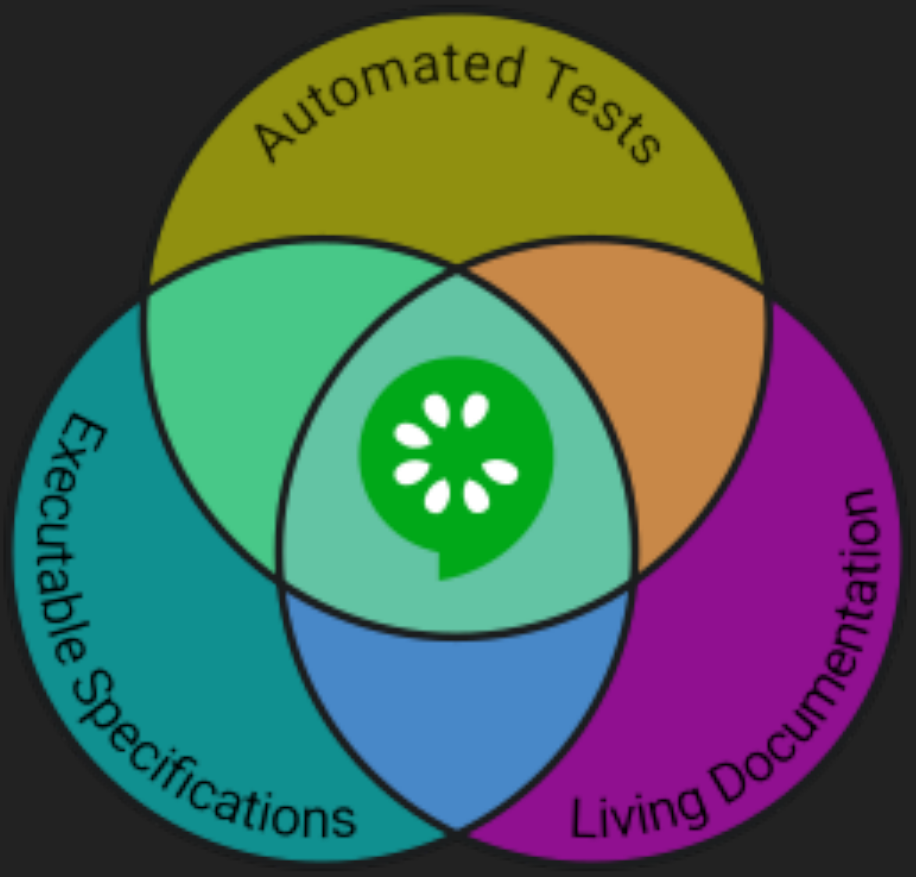
FALSE

CUCUMBER ➡ COLLABORATION TOOL

“The idea was to combine automated acceptance tests, functional requirements and software documentation into one format that would be understandable by non-technical people as well as testing tools.”

- Aslak Hellesøy, creator of Cucumber

https://cucumber.io/blog/the-worlds-most-misunderstood-collaboration-tool/



"... THE PURPOSE OF A USER STORY IS TO ENCOURAGE COLLABORATION.

A USER STORY IS A PROMISE TO HAVE A FUTURE CONVERSATION."

William Lazzaro & Charles Suschek

HAVING CONVERSATIONS

Three Amigos (aka, Specification Workshop)

- Collaborative requirements
- Collaborative tests
- “Ready for dev” consensus
- Shared understanding and engagement
- Executable documentation

REQUIRED ROLES

One to request (business)

- Presents a problem to solve

One to suggest (development)

- Explores design & implementation options

One to protest (QA)

- Challenges the options, highlights ambiguities/inconsistencies

> "ONE TO REQUEST, ONE TO SUGGEST, AND ONE TO PROTEST."
>
> – John Ferguson Smart

WHAT DOES A CONVERSATION LOOK LIKE?

- Timeboxed (typically about an hour)
- One or two iterations ahead
- Business gives context, requirements, initial scenarios
- Dev identifies feasibility, integration points
- QA challenges, looks for test data, mocks

SAMPLE QUESTIONS FOR THREE AMIGOS

- Is a range inclusive or exclusive?
- Is there a way a user can game the system?
- What could possibly fail or go wrong?
- Is there anything that could frustrate the user?
- Is there any ambiguity in the story?

STORY

Credit for flights up to 90 days before joining Frequent Flyer program

As the Frequent Flyer sales manager, I want to offer customers frequent flyer mileage credits for any flights taken in the 90 days prior to joining, so that prospective frequent flyer members will have an additional incentive to join.

- What questions do you ask as a **Developer**?

EXAMPLE

STORY

Credit for flights up to 90 days before joining Frequent Flyer program

As the Frequent Flyer sales manager, I want to offer customers frequent flyer mileage credits for any flights taken in the 90 days prior to joining, so that prospective frequent flyer members will have an additional incentive to join.

- What questions do you ask as a **Developer**
- What questions do you ask as **Quality Assurance**?

EXAMPLE

STORY

Credit for flights up to 90 days before joining Frequent Flyer program

As the Frequent Flyer sales manager, I want to offer customers frequent flyer mileage credits for any flights taken in the 90 days prior to joining, so that prospective frequent flyer members will have an additional incentive to join.

- How do we measure "90 days prior"? Calendar days or hours? What about the customer's timezone?
- How would we know what flights the customer has taken?
- For round trips, do both legs count?
- What about a single leg that spans the 90 day window?
- What if the customer flew enough to qualify for Silver level?
- Does he get credit for flights purchased for family members?
- Is there anyway the customer can "game" the system?

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WHAT ABOUT THE CUSTOMER'S TIMEZONE?

Examples:

- Customer sends his application at 12:00 PM MT
- Customer sends his application at 1:00 AM ET (11:00 PM MT the day **before**)
- Customer sends his application at 11:00 PM AKT (1:00 AM MT the **next** day)

WHAT ABOUT THE CUSTOMERS TIMEZONE?

```
Scenario Outline: Determine Frequent Flyer Program join date
  The received-date is converted to US Mountain Time, respecting Daylight
  Savings time. The calendar day in MT is used as the customer's join date.

  Given Bill submitted his application for the Frequent Flyer program
  When the application is received on <received-date>
  Then his Join-Date should be <join-date>

  Examples:
    | received-date            | join-date   |
    | 2019-Apr-01 12:00 PM MDT | 2019-Apr-01 |
    | 2019-Jan-01 01:00 AM EST | 2018-Dec-31 |
    | 2019-Feb-28 11:00 PM AKT | 2019-Mar-01 |
```

Now let’s work an example interactively…

CONTEXT

- Dynamo Circuits (DC) is opening a network of electric car charging stations.
- Access and payment will be made via a smart phone app.
- The user will pay per minute their car is connected to the charger and charging.
- Once complete, the user will pay a penalty fee for every 5 mins their vehicle is left on the charger.
- The charger notifies the user (via the app) with progress and an estimated time to full charge.

USER STORY

Earn credits for future charges when car is promptly disconnected after charging is complete.

As the manager of DC Charging Stations, I want to provide incentive to disconnect and move the car when charging is complete or almost complete, so that the customers don't have to wait for an empty charger.

Acceptance Criteria:

- Credit the customer's account with 5 minutes of free future charging if the customer disconnects promptly when charging completes or is almost complete.

Let’s have a conversation…

EXAMPLE GHERKIN

```
Scenario Outline: Disconnect while the car is still charging
  If the car is not fully charged when disconnected, the customer is
  awarded with 5 minutes of free charging if his current session was at
  least 10 minutes. A customer cannot have more than 1 credit on his
  account at the same time.

  Given my car had been charging for <minutes> minutes
  And my account had <existing> minutes credits
  And my car was not fully charged
  When I disconnect my car from the charger
  Then my account should have <total> minutes of charging.

  Examples:
    | minutes | existing | total |
    | 10:00   |        0 |     5 |
    |  9:59   |        0 |     0 |
    | 10:00   |        5 |    10 |
```

EXAMPLE JAVA TEST FIXTURE CODE

```java
public class ChargingSessionSteps {
  private final Account account =
    Account.getTestAccount();
  private final Clock clock = Clock.systemUTC();

  private Duration chargingDuration;
  private ChargeSession session;
  private Instant now;

  @Given("my car had been charging for {int}:{int}
minutes")
  public void createChargingSessionWithDuration(int
      minutes, int seconds) {
    chargingDuration = Duration.ofMinutes(minutes)
      .plusSeconds(seconds);
    now = clock.instant();

    // Create a charging session
    session = new ChargeSession(account);
    session.setChargeStartTime(
      now.minus(chargingDuration));
  }

  @Given("my account had {int} minutes credits")
  public void setAcctCreditMinutes(int existingCredits) {
    account.setCreditMinutes(existingCredits);
  }

  @Given("my car was not fully charged")
  public void setBatteryPercentTo99() {
    session.setBatteryPercent(0.99);
  }

  @When("I disconnect my car from the charger")
  public void setDisconnectTimeAndCommitSession() {
    session.setDisconnectTime(now);
    session.commit();
  }

  @Then("my account should have {int} minutes of
charging.")
  public void verifyAcctCreditMinutes(int expected) {
    assertThat(session.getCreditMinutes(), is(expected));
  }
}
```

PITFALLS

- Too many people in the Three Amigos session.
- Three Amigos conversation is held without one of the primary roles.
- Product Owner writes all scenarios and reviews with team.
- Tester writes gherkin after stories are “baselined”.
- Gherkin is written by developers or testers after code is complete.

ITS ABOUT THE CONVERSATION

"Having conversations

is more important than

Capturing conversations

is more important than

Automating conversations."

"Because if you're not having conversations, you're not doing BDD."

– Liz Keogh

QUESTIONS?

THANK YOU!

M. Jeff Wilson

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