Seven Agile Methods that Help Deliver Visualizations Agilely

(and without resorting to being AdHoc!)
Presenter
Shane Gibson, AgileBI Coach,

Shane has worked in the Business Intelligence and Analytics domain for over 20 years.

He worked for over 10 years in principal presales roles for both SAS and Oracle. In 2008 he founded OptimalBI, currently a 20 person Business Intelligence consultancy based in Wellington, New Zealand.

Shane's focus for the last 4 years has been coaching New Zealand teams on how to deliver BI and Analytics using an AgileBI approach. He started sharing his experience using this approach in 2016 on the AgileBI.Guru website.
FUN FACT #1
New Zealand has one of the highest smart meter adoption rates in the world.

FUN FACT #2
New Zealand had the first commercial SAS customer outside the USA.

FUN FACT #3
Kiwifruit used to be called Chinese Gooseberries.
QUESTION #1
Who has done Agile delivery?

QUESTION #2
Who has delivered data, analytics or content using Agile Delivery?
AGILE IS NOT ADHOC
SILVER BULLET
NO SUSTAINABLE ARCHITECTURE
REQUIRES A LOT OF REWORK
ADHOC
ANTI-PLANNING
UNDISCIPLINED
DOESN'T SCALE
NO DOCUMENTATION
MINIMUM VIABLE PRODUCT
just enough features to satisfy early customers, and to provide feedback for future development
Product development from an IT failures perspective

How the customer explained it
How the project leader understood it
How the business consultant described it
How the analyst designed it
How the programmer wrote it
How the project was documented
How they advertised the open source version
How they applied open source patches

What the beta testers received
What marketing advertised
What operations installed
How it was supported
What the customer really needed
How it performed under load
The disaster recovery plan
How the customer was billed
"Absorb what is useful, discard what is not. Add what is uniquely your own."

- Bruce Lee
1 INFORMATION PRODUCTS
If I had an hour to solve a problem and my life depended on it, I would use the first 55 minutes determining the proper questions to ask.

Albert Einstein
Information Products describe:

1. The business outcome or benefit that will be achieved by using the Information Product;

2. The business questions that will be answered by using the content;

3. The data-driven business processes that are required by the users;

4. The audience (persona’s) that will use it;

5. The visualizations that might be delivered;

6. The interactions and features the users will require.
Description

Brief overview of this Information Product.

Provide visibility of the financial health of the organization to the Senior Leadership Team on a daily basis and at a glance.

Outcomes

List of expected business outcomes which will be achieved using this Information Product.

- Monitoring the financial health of the organization in a more efficient way, reducing costs.
- Improve throughput by reallocating resources in a more effective way, reducing costs.
- Producing customer statements in a more efficient way, reducing cost.
- Increasing revenue by targeting specific customer.
- Forecasting revenue to enable cashflow to be better managed, reducing cost.
- Identifying fraudulent transactions to reduce organizational brand risk.

Business Questions

List of business questions which can be answered using this Information Product.

- How much cash will the organization have in the bank at the end of today?
- What is the total value of the invoices overdue?
- How many invoices are overdue?
BEFORE DELIVERY

Gather
Size
Prioritize

DURING DELIVERY

Estimation
Requirements
Design
As-Built
2 DATA REQUIREMENTS
BUSINESS EVENT ANALYSIS and MODELLING
DATA
MODELLING

BRAIN
STORMING

MODEL
STORMING
Customer orders an ice cream at a store from an employee using a promotion code at 1pm on Friday 23rd Feb 2018 for $4.50
How does this quarter’s sales of ice cream products that we promoted to customers in the north compare with last year’s by store?
AGILE DATA MODELS
The **Data Vault** is a detail oriented, historical tracking and uniquely linked set of normalized tables that support one or more functional areas of business. It is a hybrid approach encompassing the best of breed between 3rd normal form (3NF) and star schema.

1. **Hubs** represent core business concepts.

2. **Satellites** stores all the attributes for a core business concept.

3. **Links** records relationships between core business concepts.

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**Flexible, scalable and adaptable way to structure your data**

- Consistent metadata pattern allowing for quicker implementation
- Allows for iterative development
- Provides a historical view of the data
- Easily adapts to changes within an evolving organization or systems
4 WIREFRAMES
Title

Data Certification

Commentary

Year
Region
Product
Channel

Measure

0
50
100
150
200
01-2015
02-2015
03-2015
04-2015
05-2015
06-2015
07-2015
08-2015
09-2015
10-2015
11-2015
12-2015

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Confirm functional requirements (i.e. Filters)

Identify desired interactions (i.e. drill down vs drill through)

Identify missed data items

Influence design layout
5 BEHAVIOR DRIVEN DEVELOPMENT
Test Driven Development (TDD)
Ensure things are built correctly

Acceptance Test Driven Development (ATDD)
Ensure expectations are met

Behavior Driven Development (BDD)
Ensure the correct things are built
Test Driven Development (TDD)
Write a unit test > write code > code fails test > change code > code passes test > refactor code

Acceptance Test Driven Development (ATDD)
Define user story acceptance criteria

Behavior Driven Development (BDD)
Defining a business rule by way of examples
Acceptance Test
User story

As a Financial Controller
I want a dashboard with key Revenue KPI’s
So that I can monitor the financial health of the organisation
Behavior Test

Business Rules

DECISION TABLES
&
GHERKIN SCRIPTS
**Business Rule Name:** Late Delivery  
**Core Business Event:** Supplier Delivers Product  
**Rule is triggered by:** Delivery in Inventory System

### Late Delivery Decision Table

<table>
<thead>
<tr>
<th>Delivery Reference Number</th>
<th>Planned Delivery Date</th>
<th>Lodgement Date</th>
<th>Planned to Delivered Date Interval</th>
<th>Result</th>
<th>Business Context</th>
<th>Questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>10008769</td>
<td>1/01/17</td>
<td>3/01/17</td>
<td>2</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10005678</td>
<td>1/01/17</td>
<td>8/01/17</td>
<td>7</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10009231</td>
<td>1/01/17</td>
<td>27/12/16</td>
<td>(5)</td>
<td>N</td>
<td>Time interval greater than 7 Days</td>
<td></td>
</tr>
<tr>
<td>10009231</td>
<td>1/01/17</td>
<td>9/01/17</td>
<td>8</td>
<td>Y</td>
<td>Time interval greater than 7 Days</td>
<td></td>
</tr>
<tr>
<td>10008234</td>
<td>1/01/17</td>
<td>31/01/17</td>
<td>30</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rule 1 - Late Delivery

<table>
<thead>
<tr>
<th>Gherkin</th>
<th>Field Description</th>
<th>Field Type</th>
<th>Possible Values</th>
<th>Specified Value</th>
<th>Source and value in format System.tablename.fieldname</th>
<th>Result and Destination in Datavault in format System.tablename.fieldname</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given a delivery in inventory system</td>
<td>Input Parameter</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
<td>Invent.Delivery.DeliveryID</td>
<td></td>
</tr>
<tr>
<td>And the Delivery Date is greater than 7 calendar days from the Planned Delivery Date</td>
<td>Calculated Item</td>
<td>(any valid date)</td>
<td></td>
<td></td>
<td>(Invent.Delivery.DeliveryDate - Invent.Delivery.PlannedDeliveryDate) &gt; 7</td>
<td></td>
</tr>
<tr>
<td>The delivery is a late delivery</td>
<td>Late Delivery Flag</td>
<td>Result (output)</td>
<td>Y N</td>
<td>Y</td>
<td>bv.sat_Delivery.late_delivery_flag</td>
<td></td>
</tr>
</tbody>
</table>
### Business Rule Name: Business Customer

**Core Business Event:** Customer applies for Account

**Rule is triggered by:** New Customer in CRM System

#### Business Customer Decision Table

<table>
<thead>
<tr>
<th>Party ID</th>
<th>Party Instance</th>
<th>Account Type</th>
<th>Account Type</th>
<th>Result</th>
<th>Business Context</th>
<th>Questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB73546</td>
<td>Customer</td>
<td>Y</td>
<td>Corporate</td>
<td>Y</td>
<td>is a business customer</td>
<td></td>
</tr>
<tr>
<td>AC847373</td>
<td>Customer</td>
<td>Y</td>
<td>Individual</td>
<td>N</td>
<td>is a individual</td>
<td></td>
</tr>
<tr>
<td>BB43400</td>
<td>Customer</td>
<td>Y</td>
<td>Charity</td>
<td>N</td>
<td>is a charity</td>
<td></td>
</tr>
<tr>
<td>AV283747</td>
<td>Customer</td>
<td>N</td>
<td>Corporate</td>
<td>N</td>
<td>inactive customer</td>
<td></td>
</tr>
<tr>
<td>CE920020</td>
<td>Employee</td>
<td>N</td>
<td>-</td>
<td>N</td>
<td>is a employee</td>
<td></td>
</tr>
</tbody>
</table>

#### Rule 1 - Business Customer

<table>
<thead>
<tr>
<th>Gherkin</th>
<th>Field Description</th>
<th>Field Type</th>
<th>Possible Values</th>
<th>Specified Value</th>
<th>Source and value in format System.tablename.fieldname</th>
<th>Result and Destination in Datavault in format System.tablename.fieldname</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given a Party Id</td>
<td>Input Parameter</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>CRM.party.partyID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where they are a Customer</td>
<td>Field Filter</td>
<td>Customer</td>
<td>Customer Supplier</td>
<td>Customer</td>
<td>CRM.party.partyType</td>
<td></td>
<td></td>
</tr>
<tr>
<td>And the customer is linked to an account</td>
<td>Join Filter</td>
<td>Corporate</td>
<td>Individual Charity</td>
<td>Corporate</td>
<td>CRM.party.partyID = CRM.acct.custID</td>
<td>CRM.acct.acctType</td>
<td></td>
</tr>
</tbody>
</table>

Then the Party is a Business Customer

|----------------|----------|----------|-----------------|----------------------|
**Business Rule Name:** Confidential Record Masking  
**Core Business Event:** Customer applies for Account  
**Rule is triggered by:** New Customer in CRM System

### Confidential Record Masking Decision Table

<table>
<thead>
<tr>
<th>Customer Record</th>
<th>Confidential</th>
<th>Current Customer</th>
<th>Result</th>
<th>Business Context</th>
<th>Questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB73646</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>do NOT mask customer details</td>
<td></td>
</tr>
<tr>
<td>AC847373</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>do NOT mask customer details</td>
<td></td>
</tr>
<tr>
<td>BB43400</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>mask customer details</td>
<td></td>
</tr>
<tr>
<td>CE920020</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>do NOT mask customer details</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>N</td>
<td>do NOT mask customer details</td>
<td></td>
</tr>
</tbody>
</table>

### Rule 1 - Late lodgement for claim

<table>
<thead>
<tr>
<th>Gherkin</th>
<th>Field Description</th>
<th>Field Type</th>
<th>Possible Values</th>
<th>Specified Value</th>
<th>Source and value in format</th>
<th>Result and Destination in Datavault in format</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given a valid Customer Number</td>
<td>Input Parameter</td>
<td>n/a</td>
<td>n/a</td>
<td>CRM.cust.custID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>And Confidential Flag is Y</td>
<td>Field Filter</td>
<td>Y, N</td>
<td>Y</td>
<td>CRM.cust.cust_conf_flag</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>And Current Flag is Y</td>
<td>Field Filter</td>
<td>Y, N</td>
<td>Y</td>
<td>CRM.cust.cust_curr_flag</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Then display a hash # for the fields</td>
<td>Result (output)</td>
<td>{any valid value}</td>
<td>Y</td>
<td></td>
<td>bv.sat_Customer.******</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MULTIPLE ITERATIONS
Limited Stakeholder Interaction

Analysis

Design

Development

Test

Release

User Program
3 ITERATIONS, 3 WEEKS

week 1
Prototype to Validate Requirements

week 2
Identify Final Changes

week 3
Bugs fixed final acceptance

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7 T SKILLS BALANCE TEAMS
The World’s Best Lineup

SI’s DREAM TEAM (AND ITS COACH) COME FROM FOUR CLUBS AND SEVEN COUNTRIES. ILLUSTRATION BY CHRIS WHETZEL.
ETL DEVELOPER

Skill Depth

- Facilitation
- Business Event Modelling
- Requirements Discovery
- Data Vault Modelling
- Business Rule Identification
- Data Profiling and Analysis
- Code Development
- Content and Viz Development
- Testing
- Documentation
- Architecture
BUSINESS ANALYST

Skill Depth

Facilitation
Business Event Modelling
Requirements Discovery
Data Vault Modelling
Business Rule Identification
Data Profiling and Analysis
Code Development
Content and Viz Development
Testing
Documentation
Architecture
Focus on the important things first

Quicker delivery

Reduced risk

Solid requirements

Ability to reprioritise

Stop at any time

Reduced rework

Increase in quality

Simplified releases

Improved customer engagement

Reduced rework
http://AgileBI.Guru/speak/sasgf2018
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