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.

@Shagility
I HAVE A DREAM

3 WEEKS
**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
"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
DATA REQUIREMENTS
DATA DRIVEN

REPORT or MODEL DRIVEN

BUSINESS PROCESS DRIVEN
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.
### BEAM TABLE

<table>
<thead>
<tr>
<th>Customer</th>
<th>Product</th>
<th>Order ID</th>
<th>Order Time/Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob James</td>
<td>Blueberry Ripple</td>
<td>123245</td>
<td>01/03/2018:15:45</td>
</tr>
<tr>
<td>Jane Dole</td>
<td>Licorice Swirl</td>
<td>123231</td>
<td>29/02/2018:07:45</td>
</tr>
</tbody>
</table>

### TIMELINE

- **Order Fulfilment Time**
- **Packaging Time**

ORDER ➔ SHIP ➔ DELIVER

### HIERARCHY CHART

- **Year** ➔ **Fiscal Year**
- **Quarter** ➔ **Month** ➔ **Week** ➔ **Date**

### EVENT MATRIX

- **Customer Orders**
- **Product Shipments**
- **Product Returns**
- **Employee Commission**

**Notes:**
- SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies.
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

**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
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
# SASGF

**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 ID</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>Invent.Delivery.DeliveryID</td>
<td></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>[Delivery Date] - [Planned Date] &gt; 7</td>
<td>(Invent.Delivery.DeliveryDate - Invent.Delivery.PlannedDeliveryDate) &gt; 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The delivery is a late delivery</td>
<td>Late Delivery Flag</td>
<td>Result (output)</td>
<td>Y</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

<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>BB413400</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>

### Business Customer Decision Table

<table>
<thead>
<tr>
<th>Party ID</th>
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</tr>
<tr>
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</tr>
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</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>Employee Supplier</td>
<td>Customer</td>
<td>CRM.party.partyType</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| And the customer is linked to an account | Field Filter | Corporate | Individual Charity | Corporate | CRM.party.partyID = CRM.acct.custID | CRM.acct.accountType | rv_hub_Customer
| And the account type is corporate    | Field Filter      | Corporate  | Individual Charity | Corporate | CRM.acct.accountType                                  |                                                                     |       |
| Then the Party is a Business Customer | Result (output)   | Customer   | Business         |                 | rv_sat_Customer.Customer.Type                        |                                                                     |       |
### Business Rule Name: Confidential Record Masking

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

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

<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>

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<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

Stakeholder Input

Requirements

Data Model

ETL

Content

Value?
3 ITERATIONS, 3 WEEKS

- **Week 1**: Prototype to Validate Requirements
- **Week 2**: Identify Final Changes
- **Week 3**: Bugs fixed, final acceptance
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
Focus on the important things first

Quicker delivery

Reduced risk

Solid requirements

Stop at any time

Ability to reprioritise

Reduced rework

Increase in quality

Simplified releases

Improved customer engagement

Reduced rework
http://AgileBI.Guru/speak/sasgf2018
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3. On the sessions page, scroll down to Surveys and select the name of the survey.
4. Complete the survey and click Finish.