



# SAS® GLOBAL FORUM 2018

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## USERS PROGRAM

April 8 - 11 | Denver, CO  
Colorado Convention Center

**#SASGF**

# 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

USER



## 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?

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# AGILE IS NOT ADHOC

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# SILVER BULLET

NO SUSTAINABLE ARCHITECTURE

UNDISCIPLINED

**DOESN'T SCALE**

REQUIRES A LOT OF REWORK

**ADHOC**

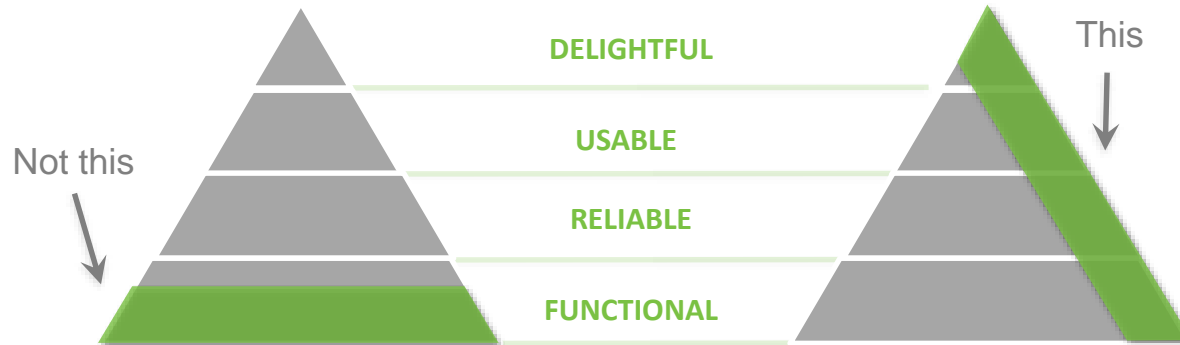
ANTI-PLANNING

NO DOCUMENTATION



# MINIMUM VIABLE PRODUCT

just enough features to satisfy early customers, and to provide feedback for future development



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### 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



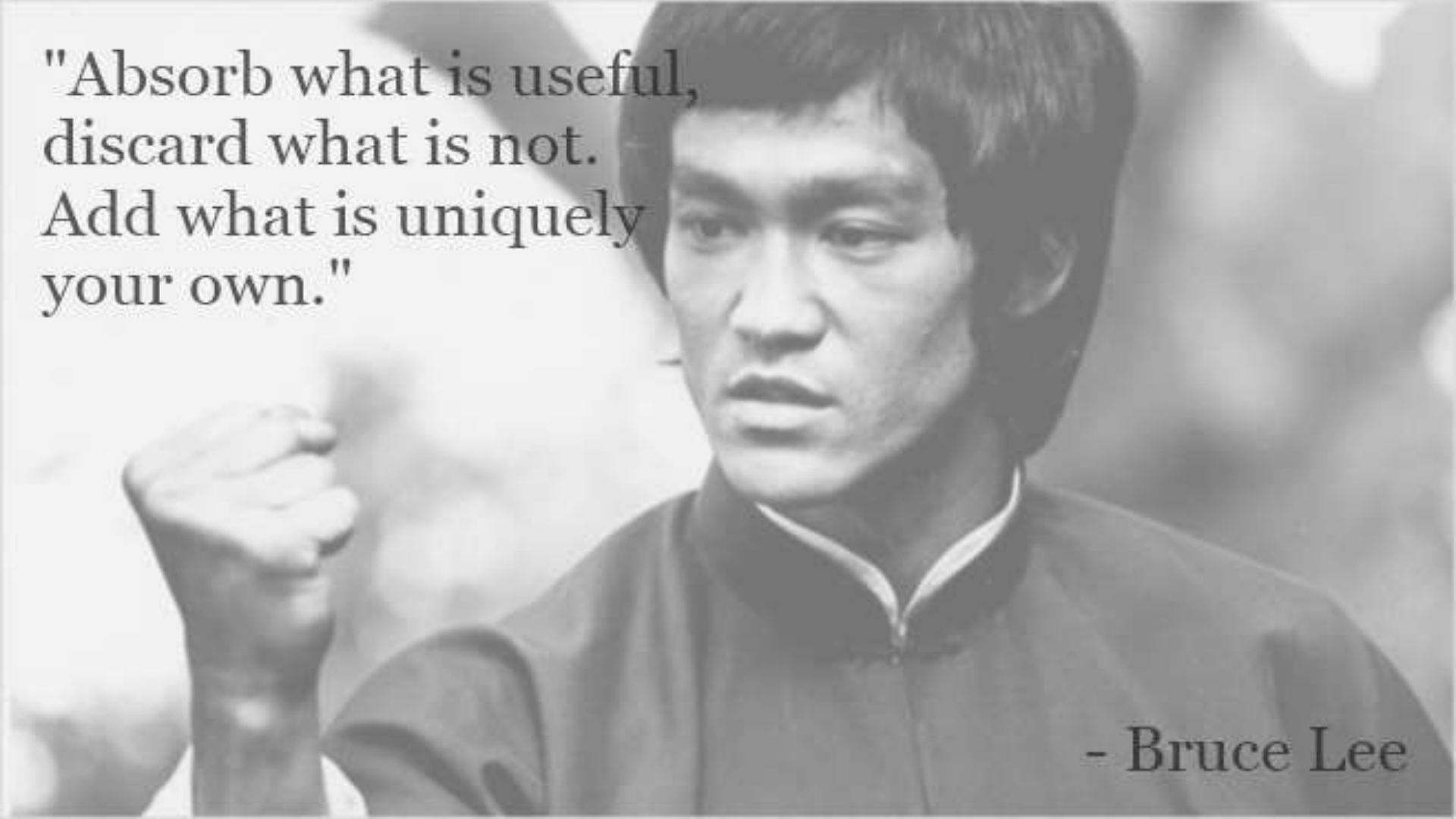
How the customer was billed







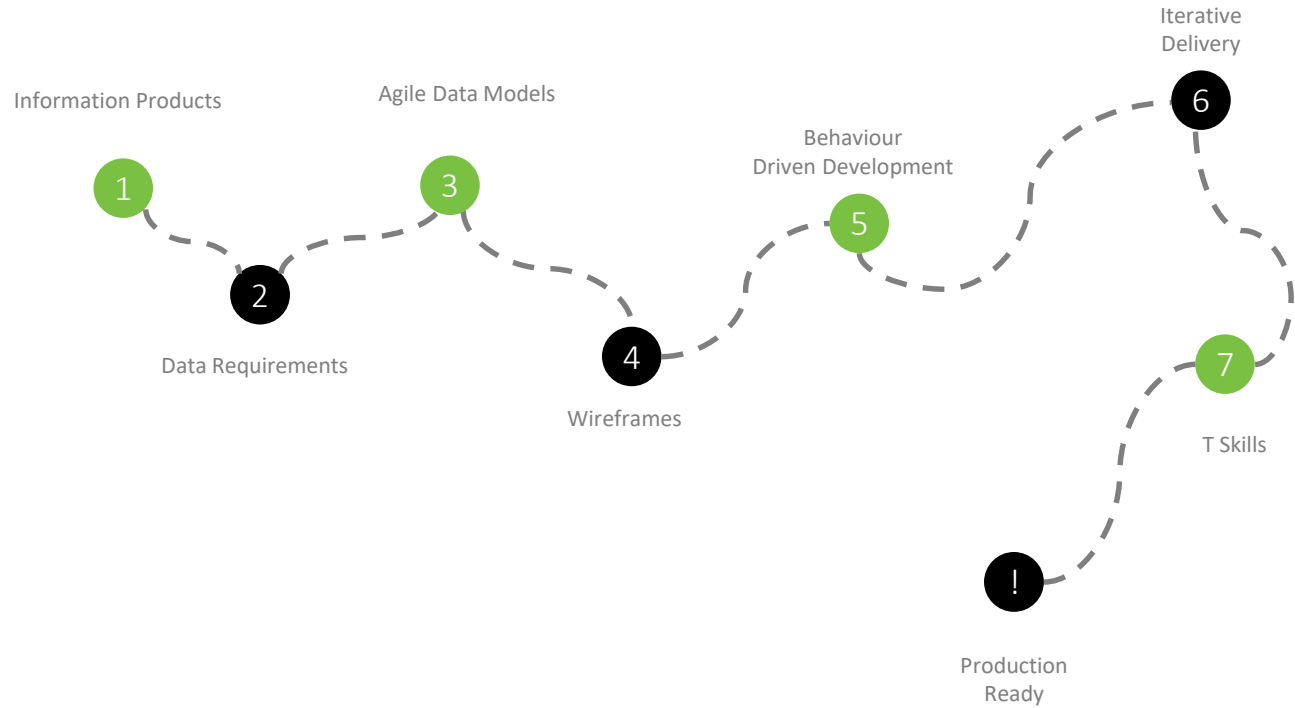


A black and white photograph of Bruce Lee. He is shown from the chest up, wearing a dark, high-collared martial arts uniform. He has a serious, focused expression and is looking slightly to the right of the camera. His right hand is raised in a fist, with the thumb tucked in, in a classic martial arts stance. The background is blurred, suggesting an outdoor setting with other people.

"Absorb what is useful,  
discard what is not.  
Add what is uniquely  
your own."

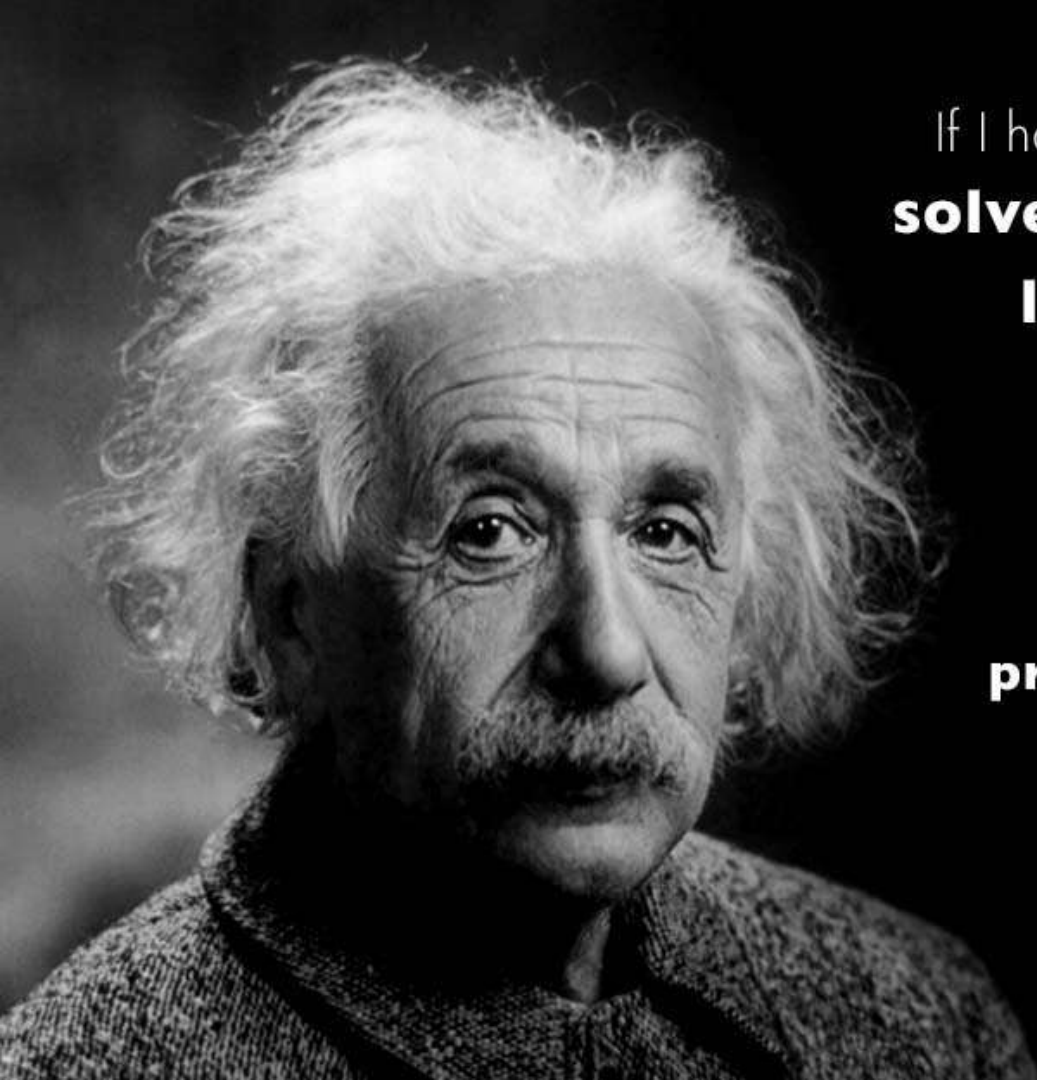
- Bruce Lee

# AGILEBI.GURU



# 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

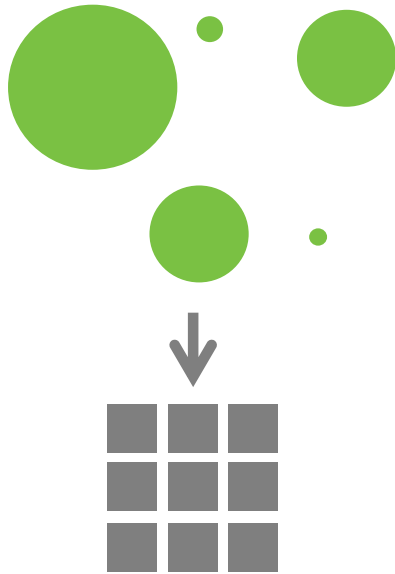
**DURING DELIVERY**

- Estimation
- Requirements
- Design
- As-Built

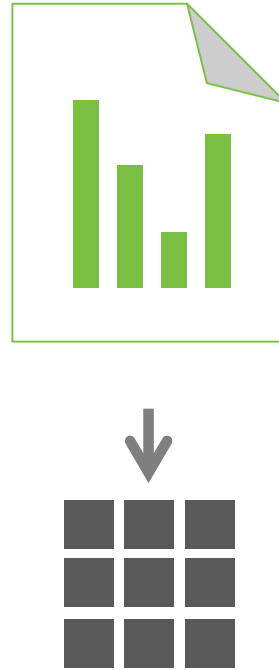
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## 2 DATA REQUIREMENTS

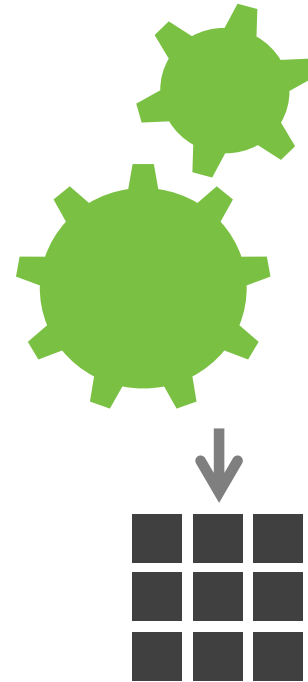
## DATA DRIVEN



## REPORT or MODEL DRIVEN



## BUSINESS PROCESS DRIVEN

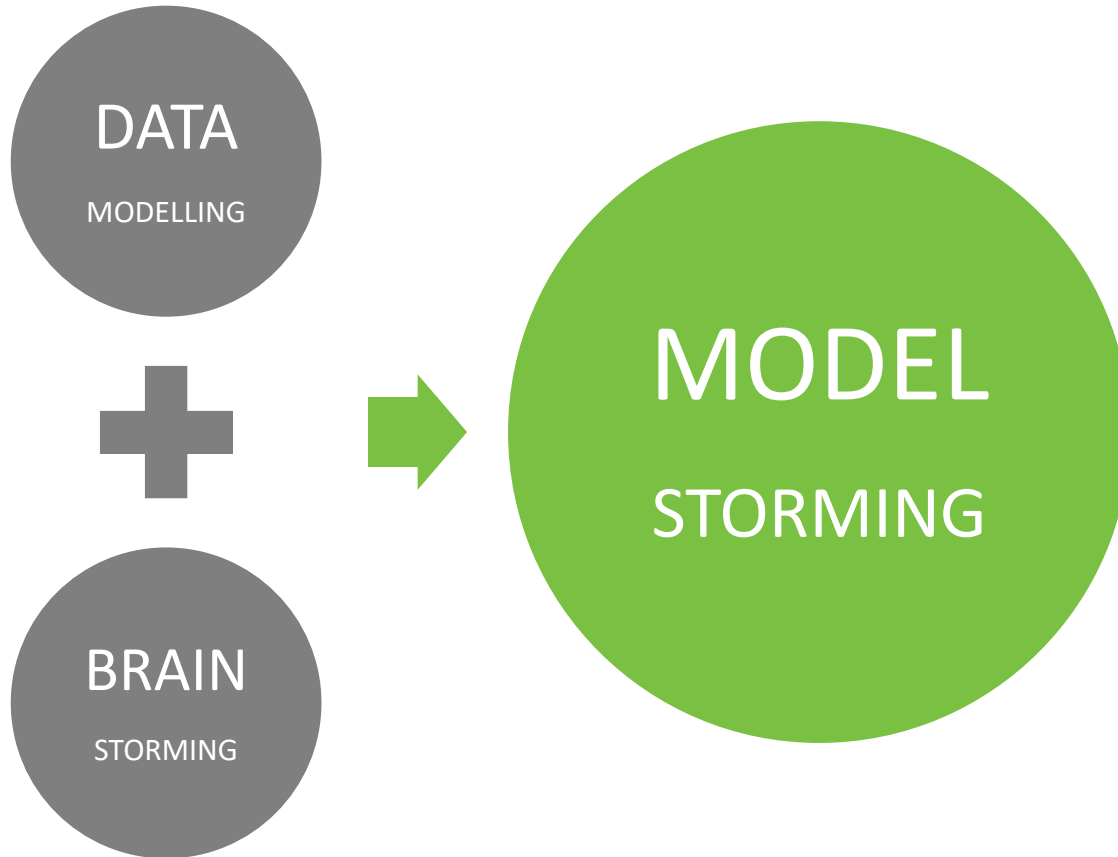


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**B**USINESS  
**E**VENT  
**A**NALYSIS and  
**M**ODELLING

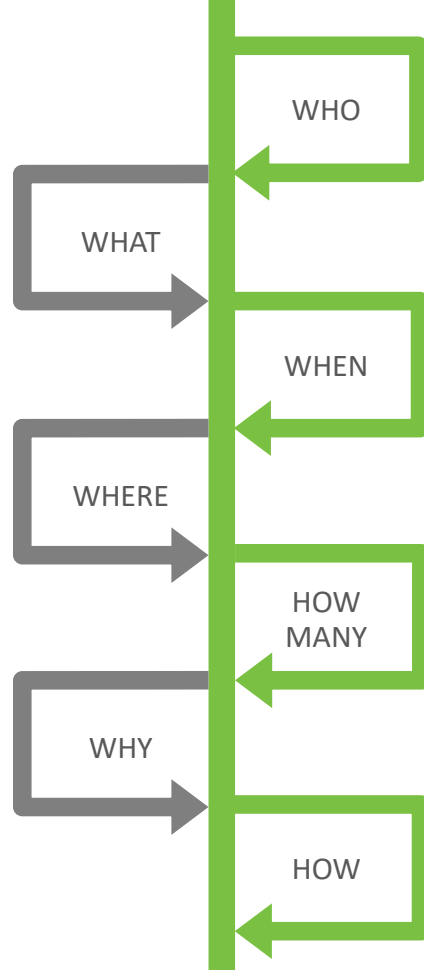
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CUSTOMER ORDERS PRODUCT



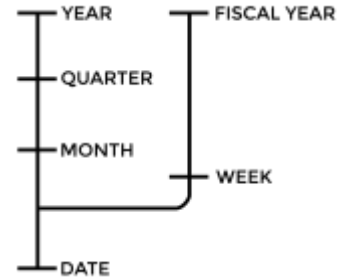
Customer orders an ice cream at a store from an employee using a promotion code at 1pm on Friday 23<sup>rd</sup> Feb 2018 for \$4.50

## BEAM TABLE

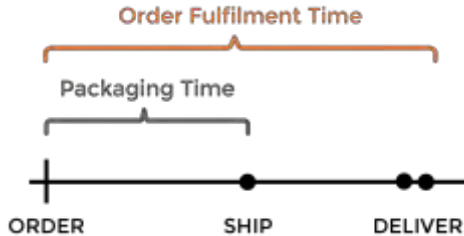
Customer Orders Product

Customer	orders Product	Order ID	on Order Time/Date
Who	What	How	When
Bob James	Blueberry Ripple	123245	01/03/2018:15:45
Jane Dole	Licorice Swirl	123231	29/02/2018:07:45

## HIERARCHY CHART



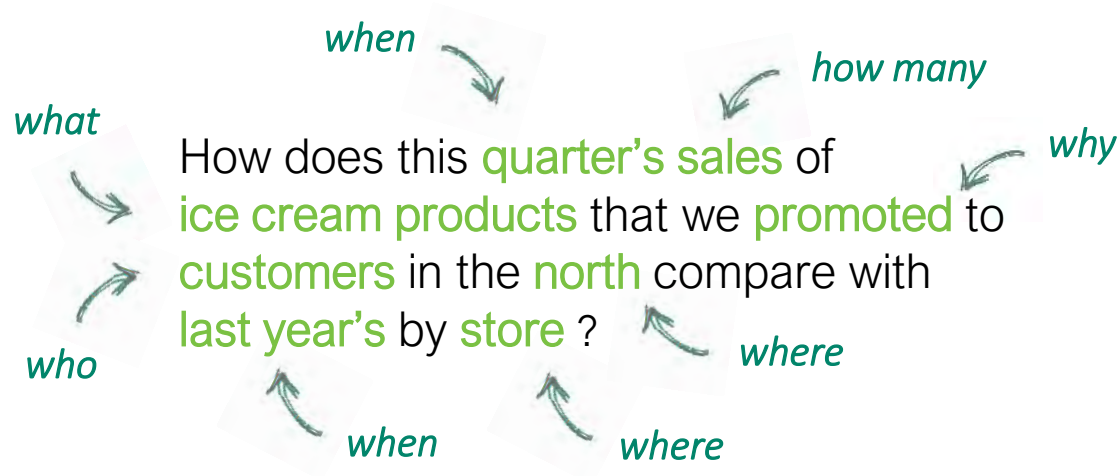
## TIMELINE



## EVENT MATRIX

	CUSTOMER	EMPLOYEE	PRODUCT	SERVICE	SALES LOCATION	DELIVERY ADDRESS	PROBLEM PROMOTION	PROBLEM REASON	ORDER ID
	who	what	where	why & how					
CUSTOMER ORDERS	✓	✓	✓		✓	✓	✓		✓
PRODUCT SHIPMENTS	✓	✓	✓			✓			✓
(PRODUCT RETURNS)	✓		✓		✓			✓	✓
EMPLOYEE COMMISSION		✓	✓	✓	✓		✓		





## 3 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.

<https://danlinstedt.com/solutions-2/data-vault-basics/>

- 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

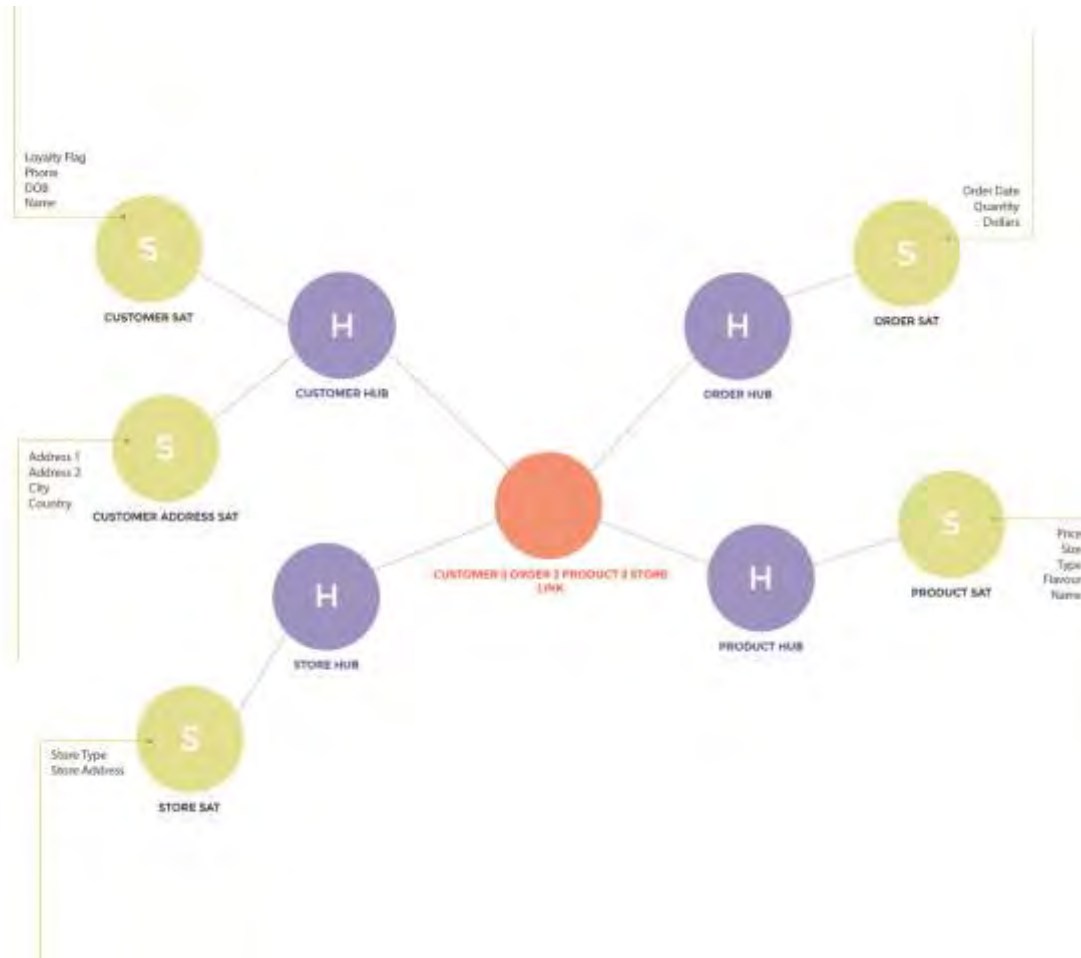
## Flexible, scalable and adaptable way to structure your data

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



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# ITERATION

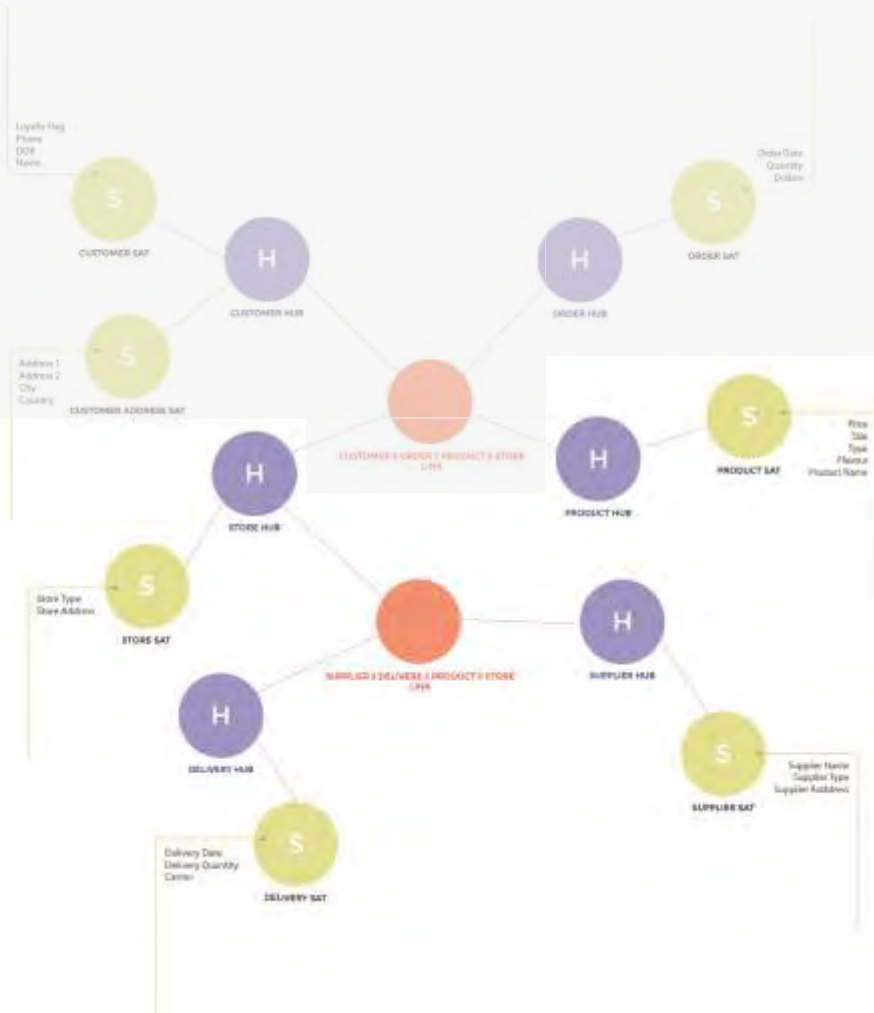
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## ITERATION

ITERATION

## *ITERATION*

## ITERATION



## 4 WIREFRAMES

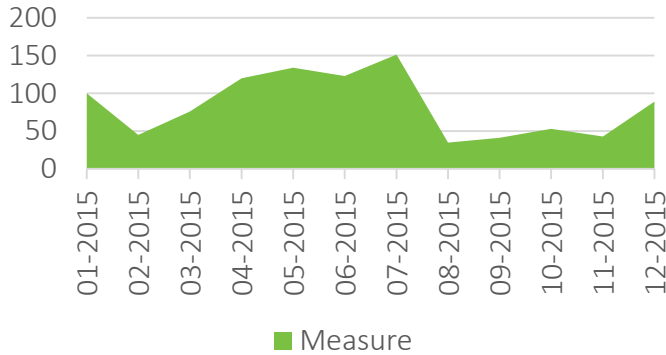
Title **AGILE<sup>BI</sup>.GURU**

Year

Region

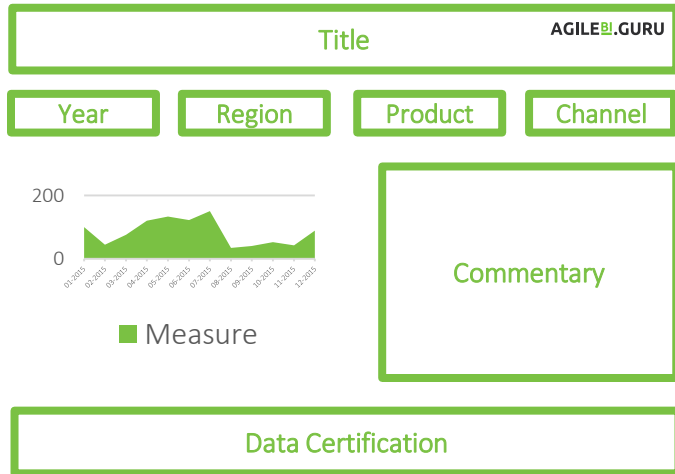
Product

Channel



Commentary

Data Certification



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

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## 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

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# Behavior Test

Business Rules

## DECISION TABLES & GHERKIN SCRIPTS

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Business Rule Name: *Late Delivery*

Core Business Event: *Supplier Delivers Product*

Rule is triggered by: *Delivery in Inventory System*

Late Delivery Decision Table						
Delivery ID	Planned Delivery Date	Lodgement Date	Planned to Delivered Date Interval	Result	Business Context	Questions?
<i>Delivery Reference Number</i>	<i>Date of planned delivery</i>	<i>Date of delivery</i>	<i>Days between Planned and Delivered dates</i>	<i>Is a late delivery</i>		
10008769	1/01/17	3/01/17	2	N		
10005678	1/01/17	8/01/17	7	N		
10009231	1/01/17	27/12/16	(5)	N		
10009231	1/01/17	9/01/17	8	Y	Time interval greater than 7 Days	
10008234	1/01/17	31/01/17	30	Y	Time interval greater than 7 Days	

Rule 1 - Late Delivery						
Gherkin	Field Description	Field Type	Possible Values	Specified Value	Source and value in format System.tablename.fieldname	Result and Destination in Datavault in format System.tablename.fieldname
Given a delivery in inventory system		Input Parameter	n/a	n/a	Invent.Delivery.DeliveryID	
And the Delivery Date is greater than 7 calendar days from the Planned Delivery Date		Calculated Item	{ any valid date }	[Delivery Date] - [Planned Date] > 7	$(\text{Invent.Delivery.DeliveryDate} - \text{Invent.Delivery.PlannedDeliveryDate}) > 7$	
<i>The delivery is a late delivery</i>	<i>Late Delivery Flag</i>	Result (output)	Y N	Y		bv.sat_Delivery.late_delivery_flag

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						
Party	Party Instance	Account Type	Account Type	Result	Business Context	Questions?
<i>Party ID</i>	<i>Is Customer</i>	<i>is linked to an account</i>	<i>account type is corporate</i>	<i>is business customer</i>		
AB73646	Customer	Y	Corporate	Y	is a business customer	
AC847373	Customer	Y	Individual	N	is a individual	
BB43400	Customer	Y	Charity	N	is a charity	
AV283747	Customer	N	Corporate	N	inactive customr	
CE920020	Employee	N	-	N	is a employee	
-	-	-	-	N		

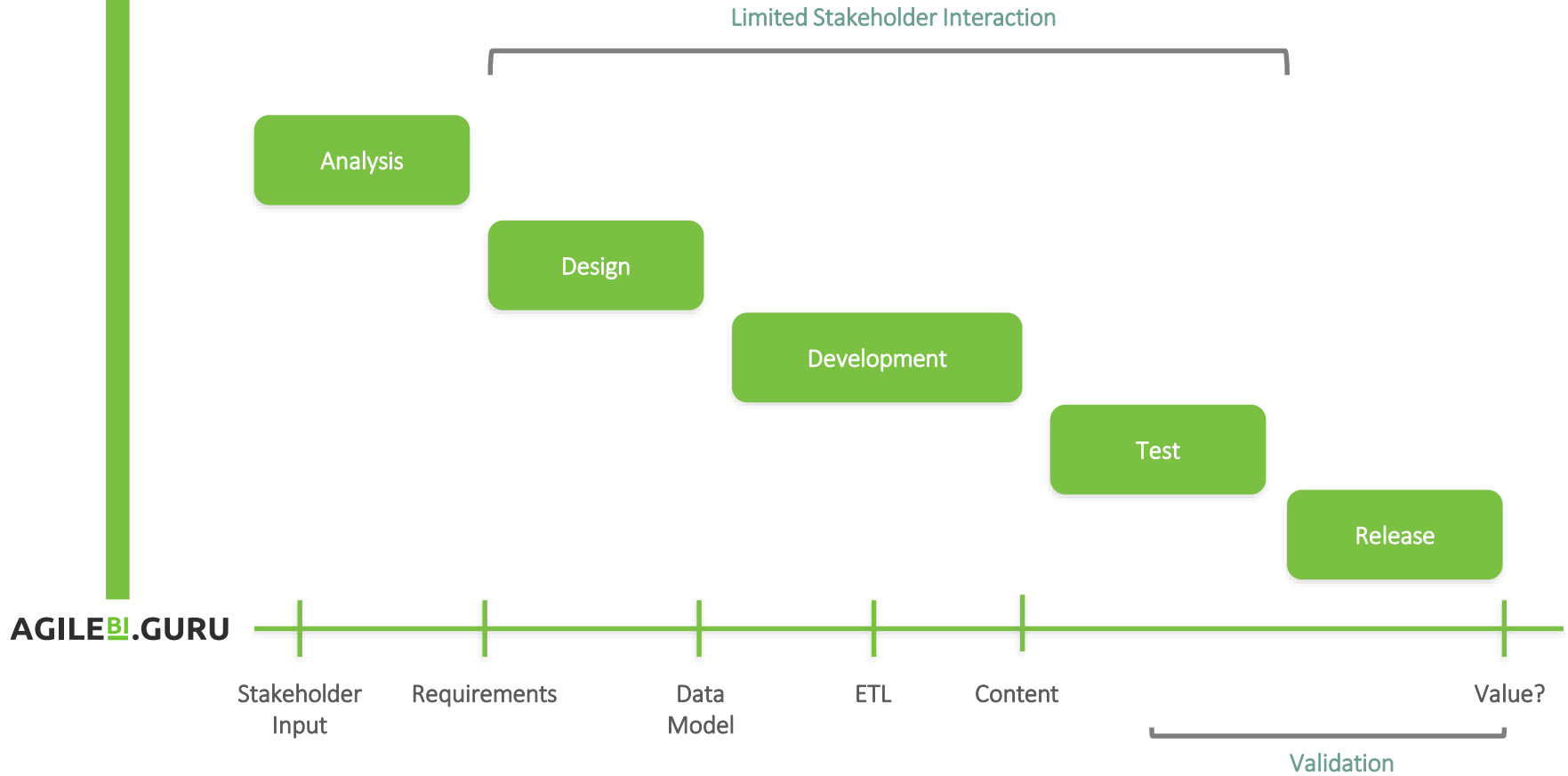
Rule 1 - Business Customer							
Gherkin	Field Description	Field Type	Possible Values	Specified Value	Source and value in format System.tablename.fieldname	Result and Destination in Datavault in format System.tablename.fieldname	Notes
Given a Party Id		Input Parameter	n/a	n/a	CRM.party.partyID		
Where they are a Customer		Field Filter	Customer Employee Supplier	Customer	CRM.party.partyType		
And the customer is linked to an account		Join Filter		record found [partyID = acct.custID]	CRM.party.partyID = CRM.acct.custID		
And the account type is corporate		Field Filter	Corporate Individual Charity	Corporate	CRM.acct.accountType		
<i>Then the Party is a Business Customer</i>		Result (output)		Customer Business		rv.hub_Customer rv.sat_Customer.Type	

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					
Customer Record	Confidential	Current Customer	Result	Business Context	Questions?
<i>Customer ID</i>	<i>Confidential Flag</i>	<i>Current Flag</i>	<i>Mask Customer Details</i>		
<i>AB73646</i>	<i>Y</i>	<i>N</i>	<i>N</i>	<i>do NOT mask customer details</i>	
<i>AC847373</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>do NOT mask customer details</i>	
<i>BB43400</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>mask customer details</i>	
<i>CE920020</i>	<i>N</i>	<i>Y</i>	<i>N</i>	<i>do NOT mask customer details</i>	
<i>-</i>	<i>-</i>	<i>-</i>	<i>N</i>	<i>do NOT mask customer details</i>	

Rule 1 - Late lodgement for claim							
Gherkin	Field Description	Field Type	Possible Values	Specified Value	Source and value in format System.tablename.fieldname	Result and Destination in Datavault in format System.tablename.fieldname	Notes
Given a valid Customer Number		Input Parameter	n/a	n/a	CRM.cust.custID		
And Confidential Flag is Y		Field Filter	Y N	Y	CRM.cust.cust_conf_flag		
And Current Flag is Y		Field Filter	Y N	Y	CRM.cust.cust_curr_flag		
<i>Then display a hash # for the fields</i>		Result (output)	{ any valid value} #####	Y		bv.sat_Customer.*****	

## 6 MULTIPLE ITERATIONS



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Stakeholder Interaction



Value?

Value

Value!

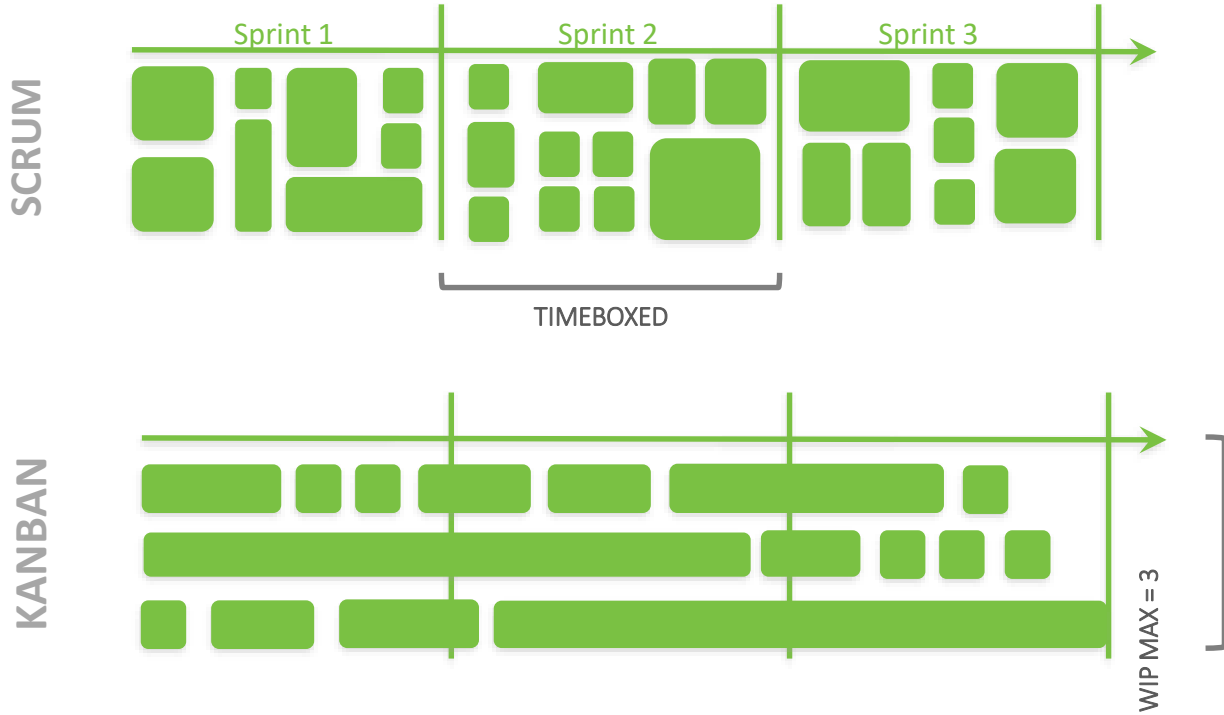
VALUE!

VALUE!

Validation

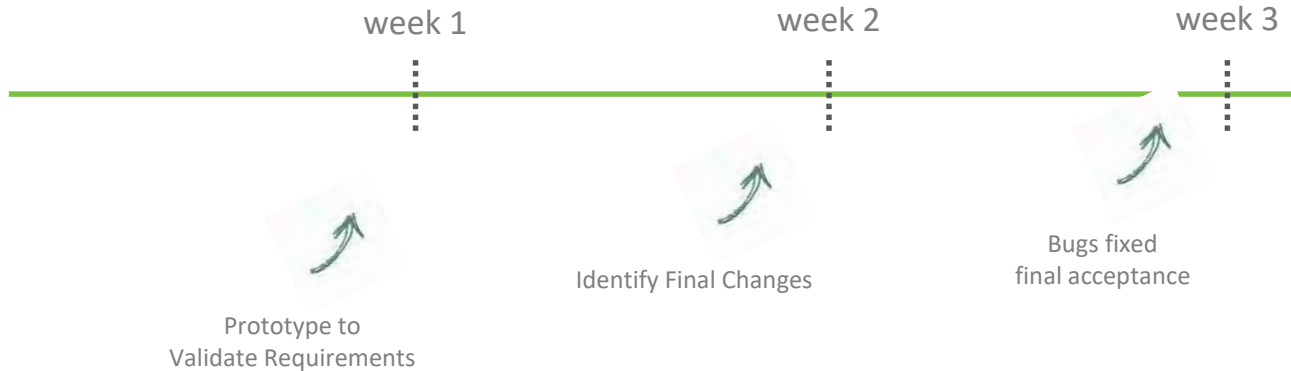
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# 3 ITERATIONS, 3 WEEKS

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# 7 T SKILLS BALANCE TEAMS

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# The World's Best Lineup

SI's DREAM TEAM (AND ITS COACH) COME FROM FOUR CLUBS

AND SEVEN COUNTRIES ILLUSTRATION BY CHRIS WHETZEL



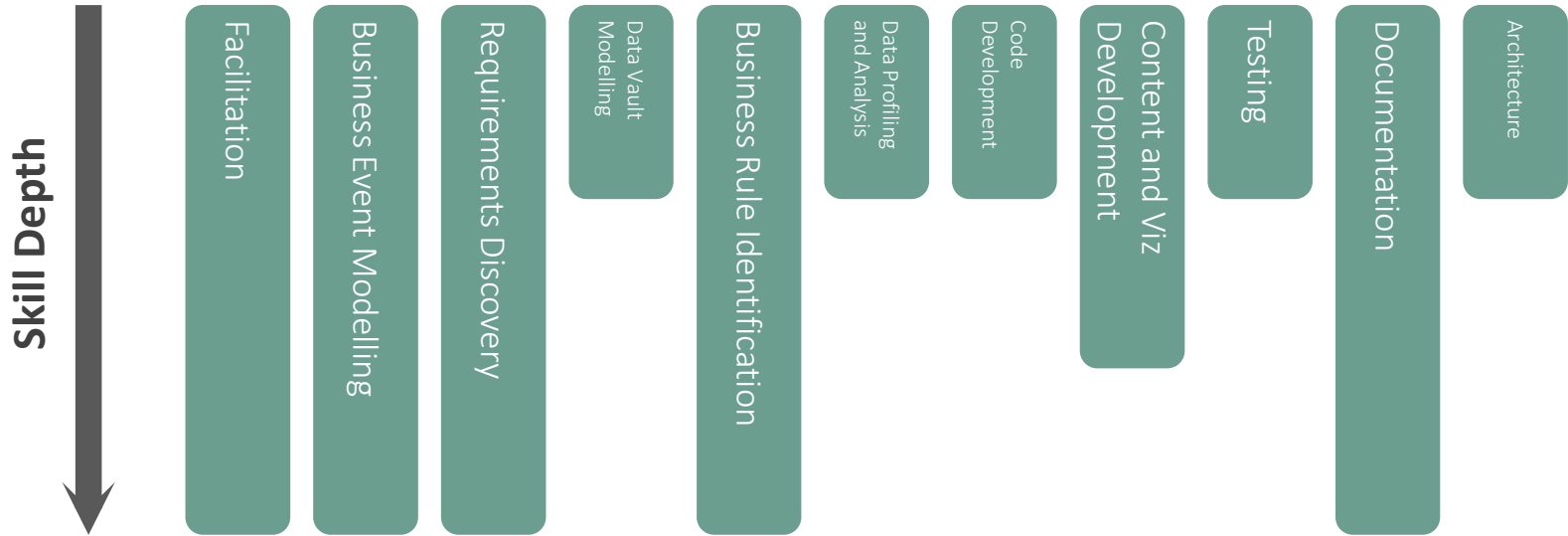
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# ETL DEVELOPER



# BUSINESS ANALYST



# TEAM OVERLAY





SO<sup>!</sup>

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Focus on the **important** things first

**Reduced** risk

**Quicker** delivery

**Solid** requirements

**Stop** at any time

Ability to **reprioritise**

**Reduced** rework

Increase in **quality**

**Simplified** releases

Improved customer **engagement**

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<http://AgileBI.Guru/speak/sasgf2018>

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