

# Get the most of Scrum with Opportunity Engineering

*Prepared for the Scrum Gathering  
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David Du, Mezzabites*

# Speakers

Julien Mazloum



David Du



# How it all began

**OutSofting**  
Making **Outstanding** Software possible



**MEZZABjTES**

**OutSofting**  
Making **Outstanding** Software possible

**MEZZABjTES**

# The PO Challenge

Product Backlog Item (PBI)	Priorities
As a visitor/member, I want to register, login and update of my user account information	
As a member, I want to manage my orders via a visible shopping cart, order the content of my shopping cart and confirm my order by secure on-line payment	
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As a visitor, I can get some free points if I register to the website	

# The PO Challenge

Product Backlog Item (PBI)	Priorities
As a visitor/member, I want to register, login and update of my user account information	<b>How to prioritize?</b>
As a member, I want to manage my orders via a visible shopping cart, order the content of my shopping cart and confirm my order by secure on-line payment	
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# Prioritization ideas (1/2)

From “Agile Product Management”  
of Roman Pichler:

- Value
- Knowledge, uncertainty, risk
- Dependencies
- Releasability

# Prioritization ideas (2/2)

From “Practices for scaling Lean & Agile development” of Craig Larman and Bas Vodde:

- Strategic alignment
- Relative points (**value** and effort)
- Drive profits
- Risk
- Stakeholder preferences

*Those are too intuitive!*

*But a good PO should know!*

*The reality is that ...*

*... he does **not** have the **right**  
**thinking tools***

*and companies **really** need them*

a

GAP

exists

between what the company **needs**  
and how the PO can prioritize the Product Backlog

what the company **needs**

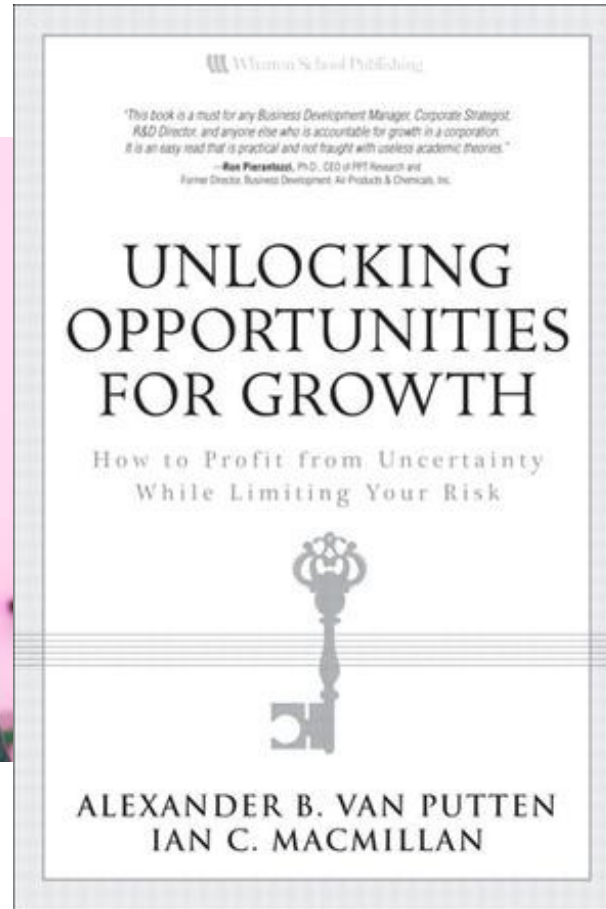
**GAP**

how the PO can prioritize the Product Backlog

# Please meet



*Ian MacMillan*



*Alexander Van Putten*

## Opportunity Engineering (OE)

# The Key concept of OE

Is to make uncertainty **work** for you rather than **against** you!

Let's look at probability of potential profit.

# Example

By investing \$200 in a plant, I can make a product that can bring me \$1,400 but I have only 5% certainty of this.

$$\text{Net Present Value} = -200\$ + 0.05 * 1,400\$ = -130\$$$

Or I can invest 40\$ in making and commercializing a prototype and than decide.

$$\text{Engineered Value} = -40\$ + 0.05 * (-200\$ + 1,400\$) = 20\$$$

*Fail cheap & fail fast, and move on the*

*real winners!!*

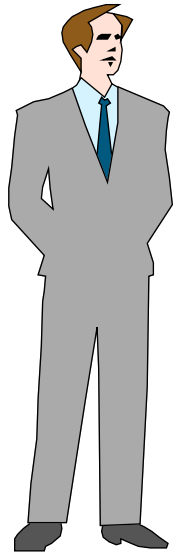
The story of...

*"I want profits"*

*or*

*"I want E-commerce"*

**I WANT...**



**...PROFITS!**

ID	Item	Amount	Source or Formula
O1	Profit	¥ 2,000,000	Policy Decision

**REVENUE  
- EXPENSES**

-----  
**PROFITS**

ID	Item	Amount	Source or Formula
O1	Profit	¥ 2,000,000	Policy Decision
F1	Profit	¥ 2,000,000	O1
F2	ROS	15.00%	Industry Average
F3	Required Sales	¥ 13,333,333	F1 / F2
F6	Allowable total costs	¥ 11,333,333	F3 – F1

# Break down process

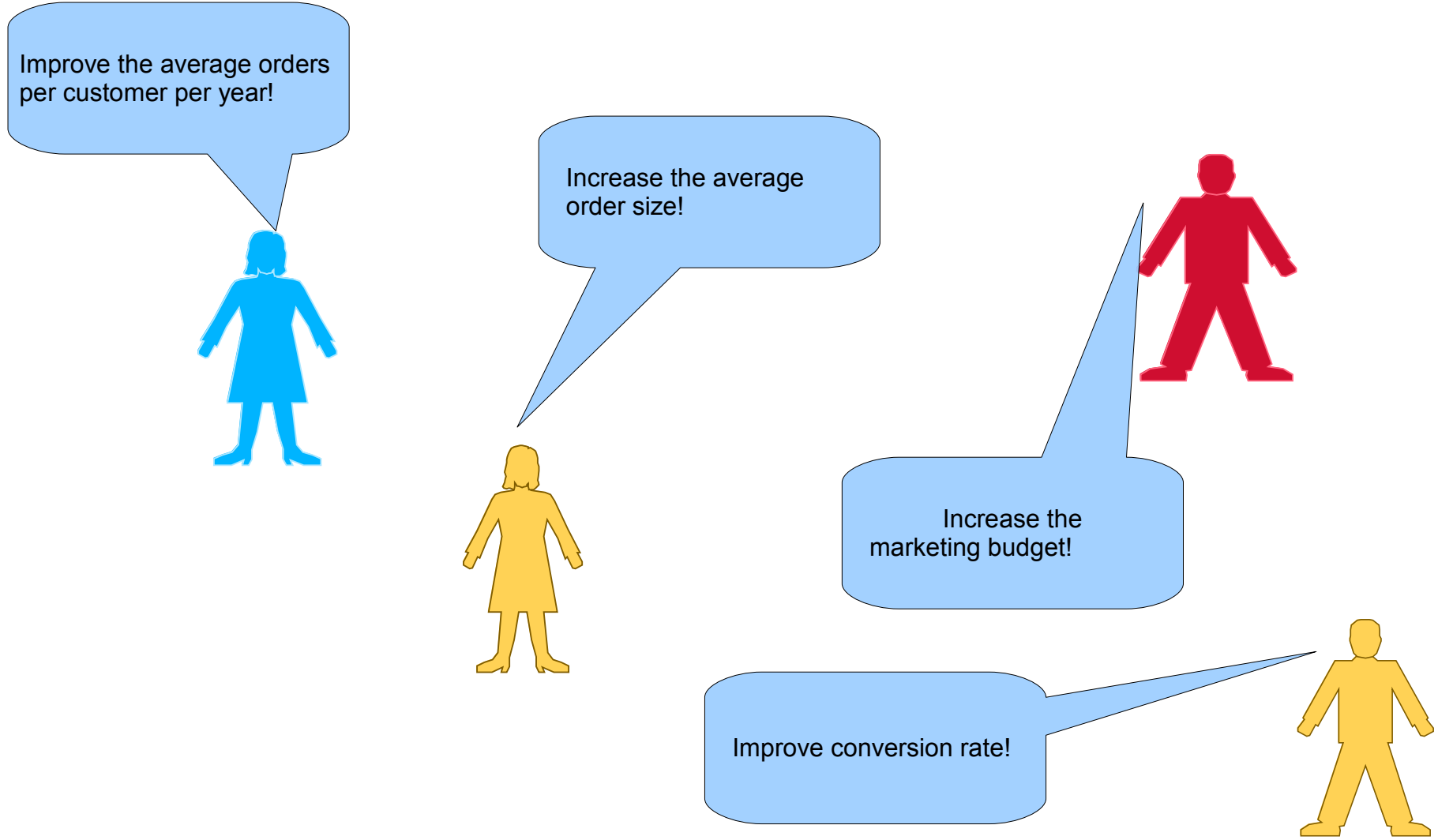
ID	Item	Amount	Source or Formula
O1	Profit	¥ 2,000,000	Policy Decision

F3	Required Sales	¥ 13,333,333	F1 / F2
F6	Allowable total costs	¥ 11,333,333	F3 - F1

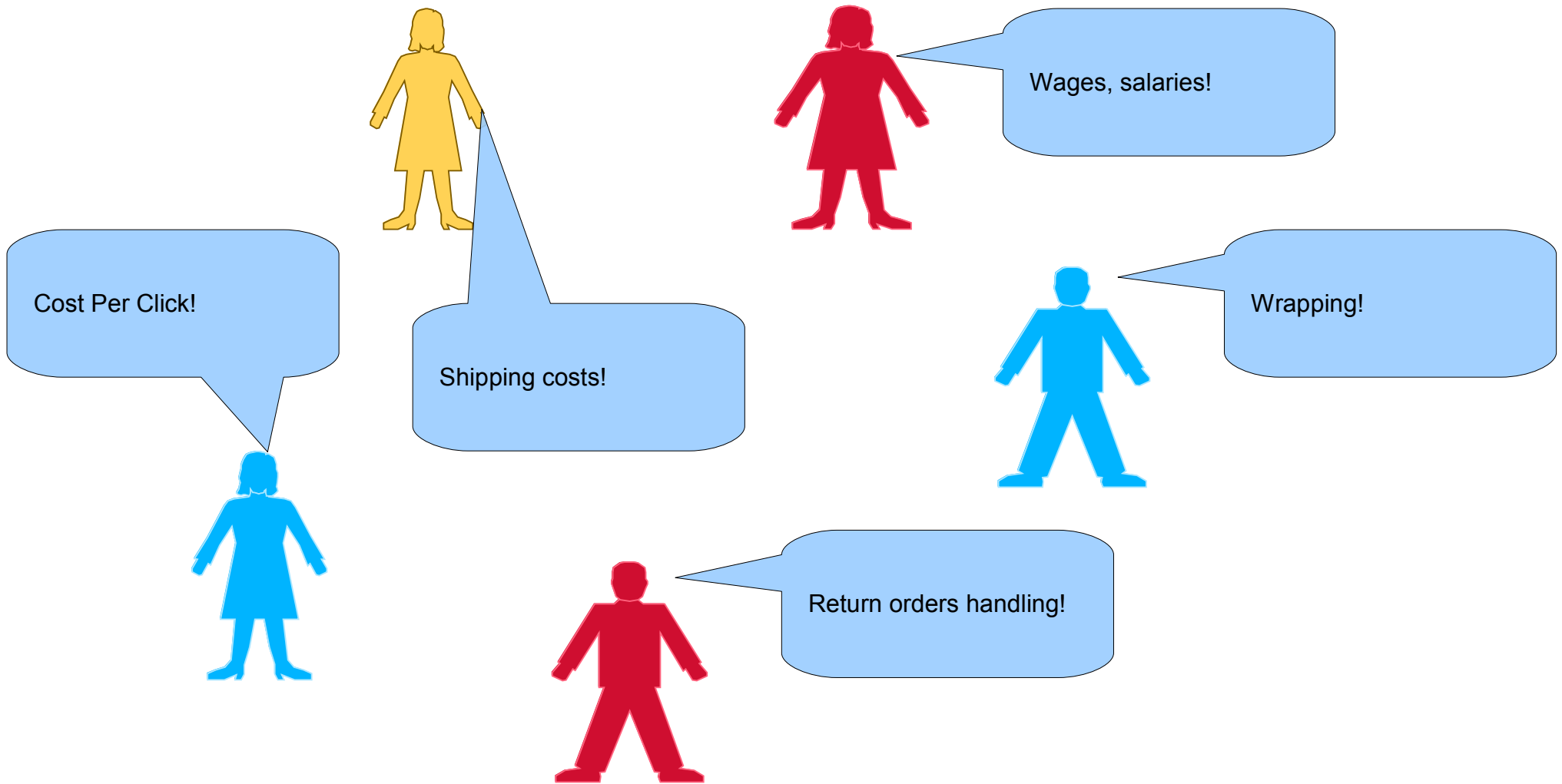
How do we make sales?

How do we incur costs?

# How do we make sales?...



# How do we incur costs?...





**ALL ARE CORRECT**



**NONE IS CORRECT**

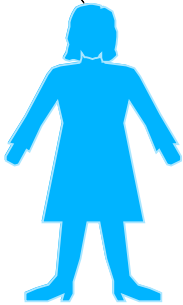
# UNCERTAINTY

*is*

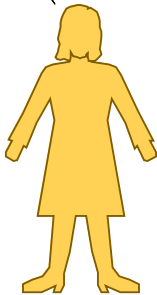
*the only driver  
we all agree with  
certainly*

# All are uncertain!

?

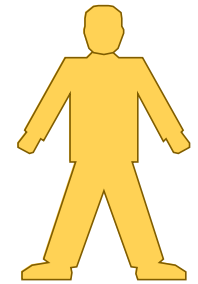


?



ID	Item	Average	Low	High	Distribution	Assumption number
F7	Average CPC rate	¥ 0.50				1
F8	Conversion rate	3.00%				2
F10	Average orders per year	2.5				3
F11	Average order size	¥ 325.00				4
F12	Contribution margin	20%				5
F15	Marketing budget p.a.	¥ 250,000				6
F16	Shipping per order	¥ 4.00				7
F17	Wrapping per order	¥ 1.00				8
F18	Returns handling per order percentage	1.00%				9
F19	Returns handling per order	¥ 25.00				10
F20	Average number of customers per staff resource	1,000				11
F22	Average monthly staff salary	¥ 5,000				12
F23	Overheads	100%				13

?

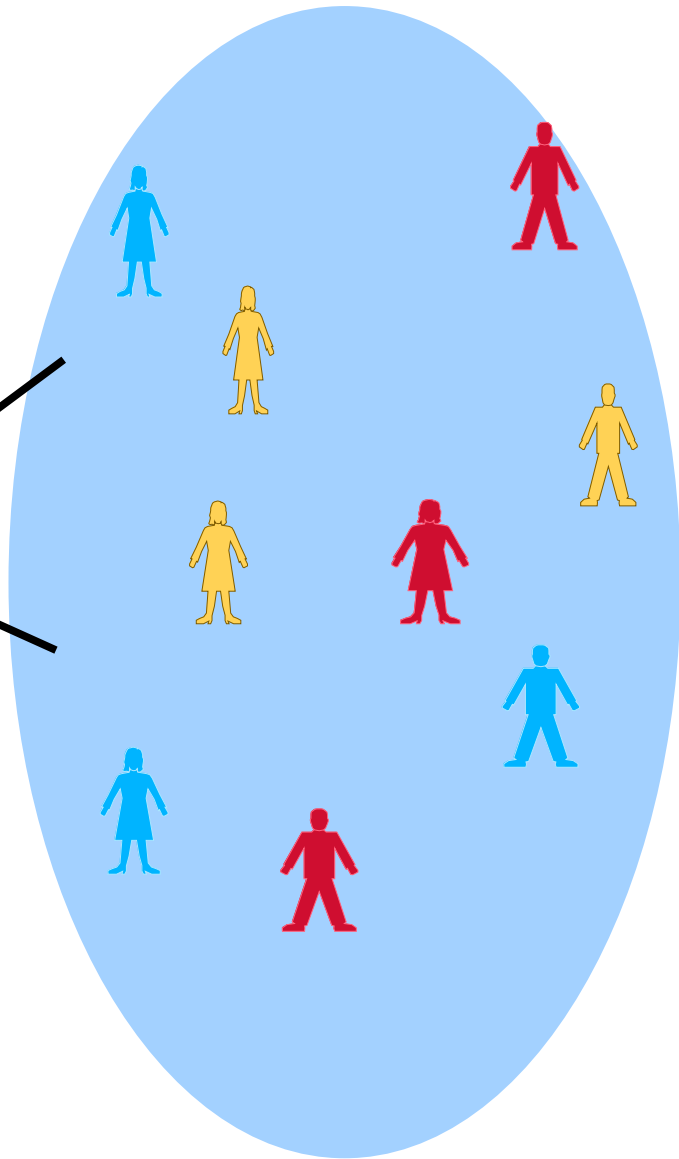


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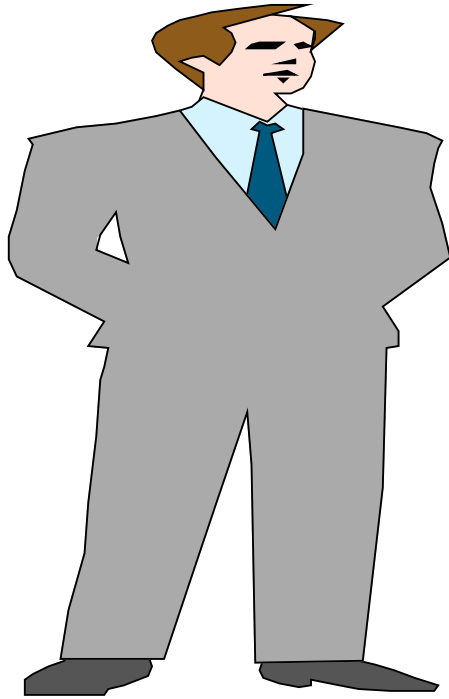
Item	Amount
Profit	¥ 2,000,000

Required Sales	¥ 13,333,333
Allowable total costs	¥ 11,333,333



**CHAOS**

# How does OE give him what he wants?

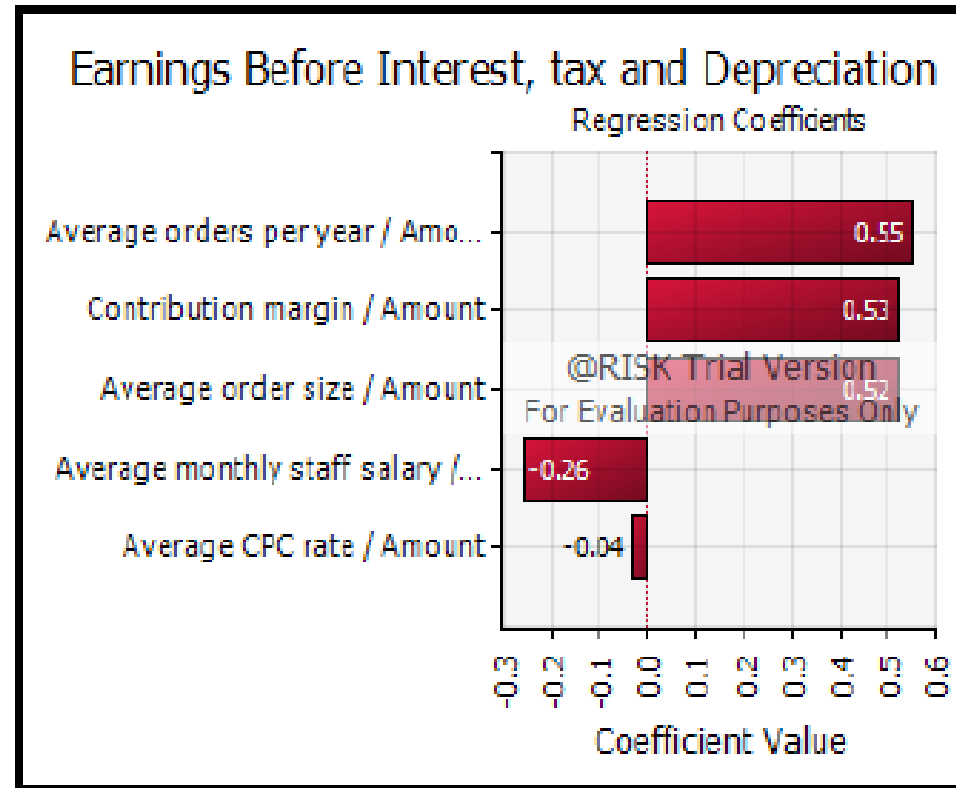


# “Business Backlog” made of the different assumptions (business factors)

ID	Item	Average	Low	High	Distribution	Assumption number
F7	Average CPC rate	¥ 0.50				1
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# 1. Prioritize the Business Backlog

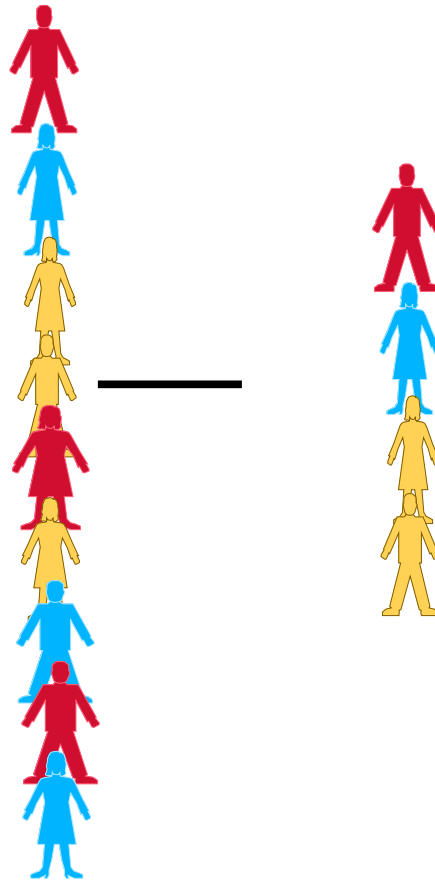
ID	Item
F7	Average CPC rate
F8	Conversion rate
F10	Average orders per year
F11	Average order size
F12	Contribution margin



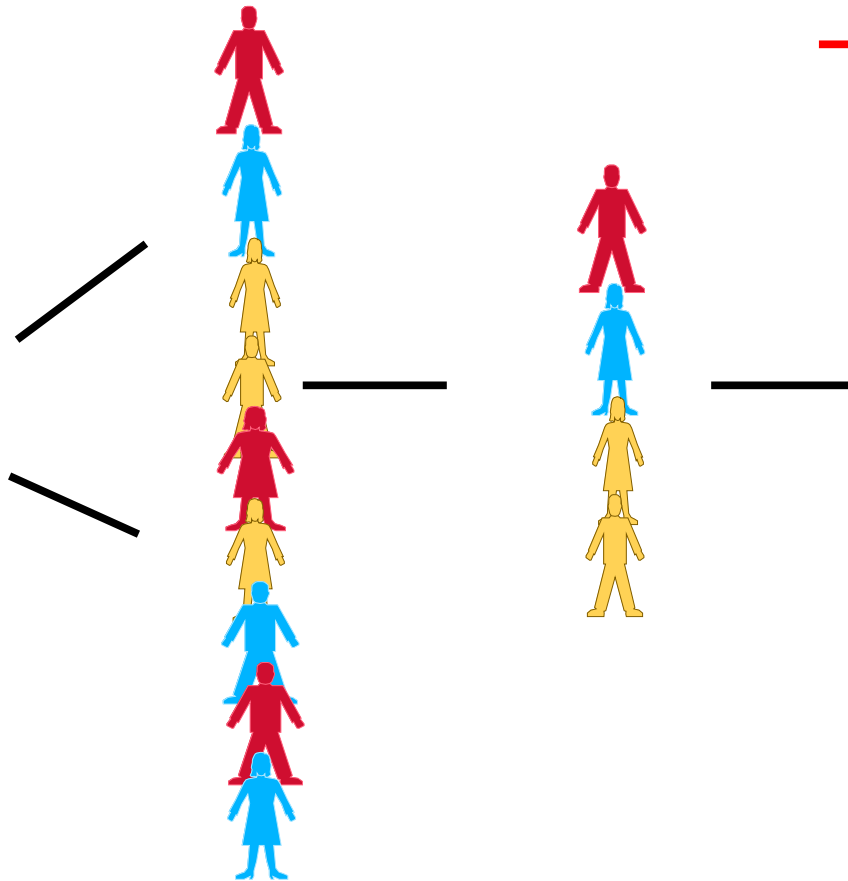
Monte-Carlo simulation  
“@risk”, a plug-in for Excel

# 2 Commit

Required Sales	¥ 13,333,333
Allowable total costs	¥ 11,333,333



# 3 Make



ID	Item	Average	Low	High	Distribution	Assumption number
F7	Average CPC rate	¥ 0.50				2
F8	Conversion rate	3.00%				3
F10	Average orders per year	2.5				4
F11	Average order size	¥ 325.00				5
F12	Contribution margin	20%				6
F15	Marketing budget p.a.	¥ 250,000				7
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F23	Overheads	100%				

Uncertainty reduces by becoming reality

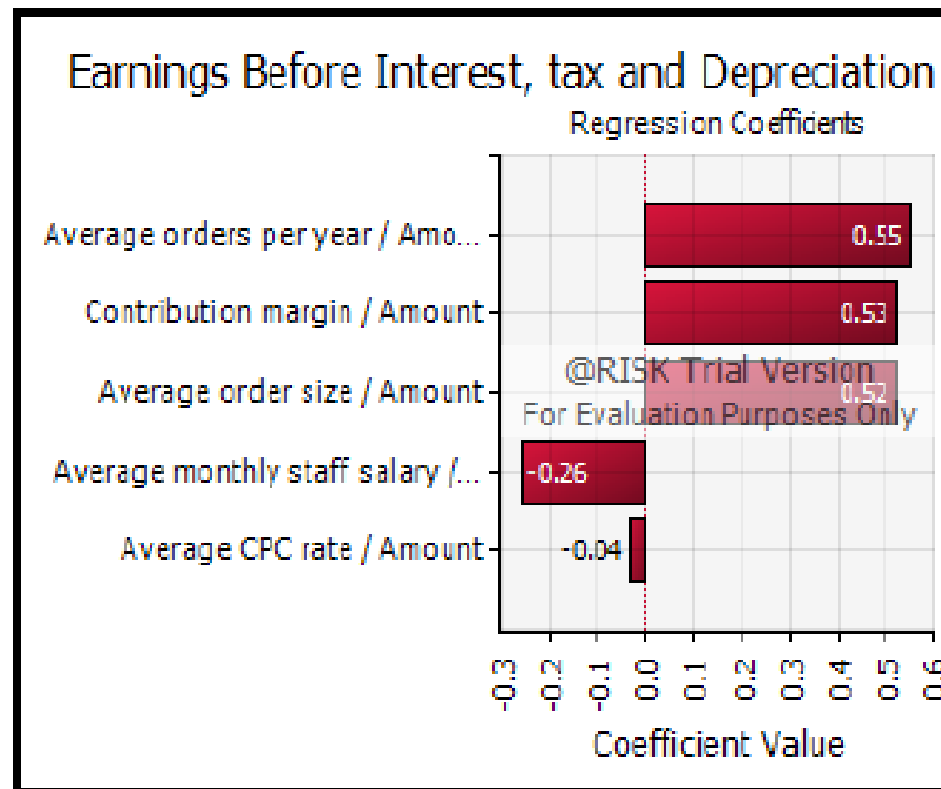
# 4 Refine and Iterate



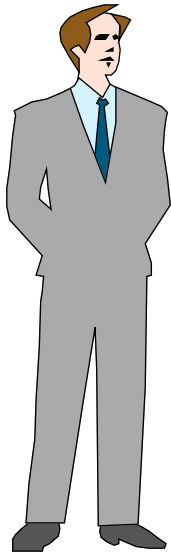
ID	Item	Average	Low	High	Distribution	Assumption number
F7	Average CPC rate	X				1
F8	Conversion rate	X				2
F10	Average orders per year	X				3
F11	Average order size	X				4
F12	Contribution margin	X				5
F15	Marketing budget p.a.	X				6
F16	Shipping per order	X				7
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F18	Returns handling per order percentage	X				9
F19	Returns handling per order	X				10
F20	Average number of customers per staff resource	X				11
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F23	Overheads	X				13

**Risks are re-ordered based on real results**

# New Business Backlog



# What have we done to give him what he wants?



- 1 Prioritize business factors
- 2 Commit to the most important ones
- 3 Reduce their uncertainty by testing them in real life
- 4 Refine and iterate

*Sounds familiar?*

# Product Backlog

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- As a member, I want to have direct access to professional and totally independent advice on the different medicines related to my issues/worries/interests
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# Prioritize relatively, in relation to one business factor at a time

	Business Factors		
	Average orders per year / amount	Contribution margin / amount	Average order size / amount
	0.551	0.525	0.524
	0.551	0.525	0.524
As a visitor/member, I want to register, login and update of my user account information	10	10	10
As a member, I want to manage my orders via a visible shopping cart, order the content of my shopping cart and confirm my order by secure on-line payment	10	10	10
As a buyer, I want to buy my usual medicine at preferred price	8	0	0
As a buyer, I want to have direct discounts for ordering more products at once	0	0	9
As a buyer, I want to accumulate points for each product I buy	2	0	0
As a member, I want to exchange my points for the medicine of my choice	2	0	0
As a buyer, I want to accumulate points for ordering more products at once (more than if ordered individually)	0	0	7
As a member, I want to have direct access to professional and totally independant advice on the different medicines related to my issues/worries/interests	0	0	0
As a member I want to be able to invite friends to the website and gain points from it	0	0	0
As a visitor, I can get some free points if I register to the website	0	0	0

# Sort by weighted sum of normalized values

	Business factors			Combined weighted value
	Average orders per year / amount	Contribution margin / amount	Average order size / amount	
	0.551	0.525	0.524	
	0.551	0.525	0.524	
As a visitor/member, I want to register, login and update of my user account	0.172	0.263	0.146	<b>0.580</b>
As a member, I want to manage my orders via a visible shopping cart, order the content of my shopping cart and confirm my order by secure on-line payment	0.172	0.263	0.146	<b>0.580</b>
As a buyer, I want to buy my usual medicine at preferred price	0.138	0.000	0.000	<b>0.138</b>
As a buyer, I want to have direct discounts for ordering more products at once	0.000	0.000	0.131	<b>0.131</b>
As a buyer, I want to accumulate points for each product I buy	0.034	0.000	0.000	<b>0.034</b>
As a member, I want to exchange my points for the medicine of my choice	0.034	0.000	0.000	<b>0.034</b>
As a buyer, I want to accumulate points for ordering more products at once (more than if ordered individually)	0.000	0.000	0.102	<b>0.102</b>
As a member, I want to have direct access to professional and totally independant advice on the different medicines related to my issues/worries/interests	0.000	0.000	0.000	<b>0.000</b>
As a member I want to be able to invite friends to the website and gain points from	0.000	0.000	0.000	<b>0.000</b>
As a visitor, I can get some free points if I register to the website	0.000	0.000	0.000	<b>0.000</b>

# Before

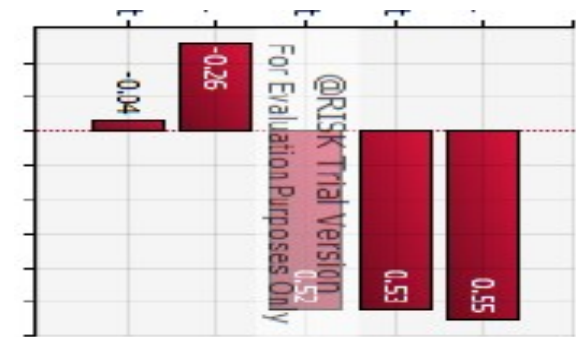
*what the company needs*



	Product Backlog Item (PBI)	priorities
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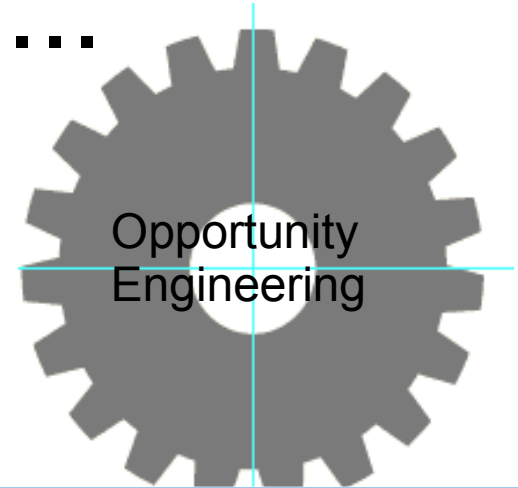
# After

what the company needs



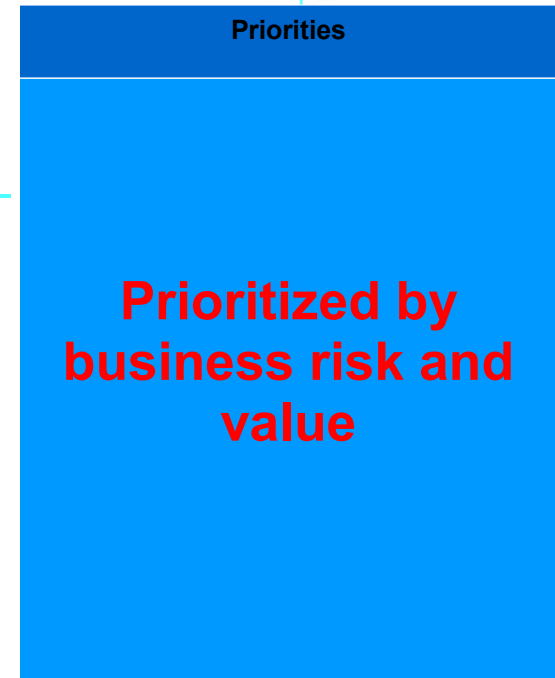
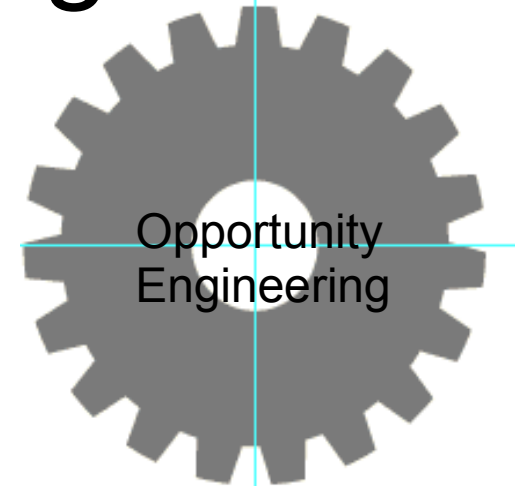
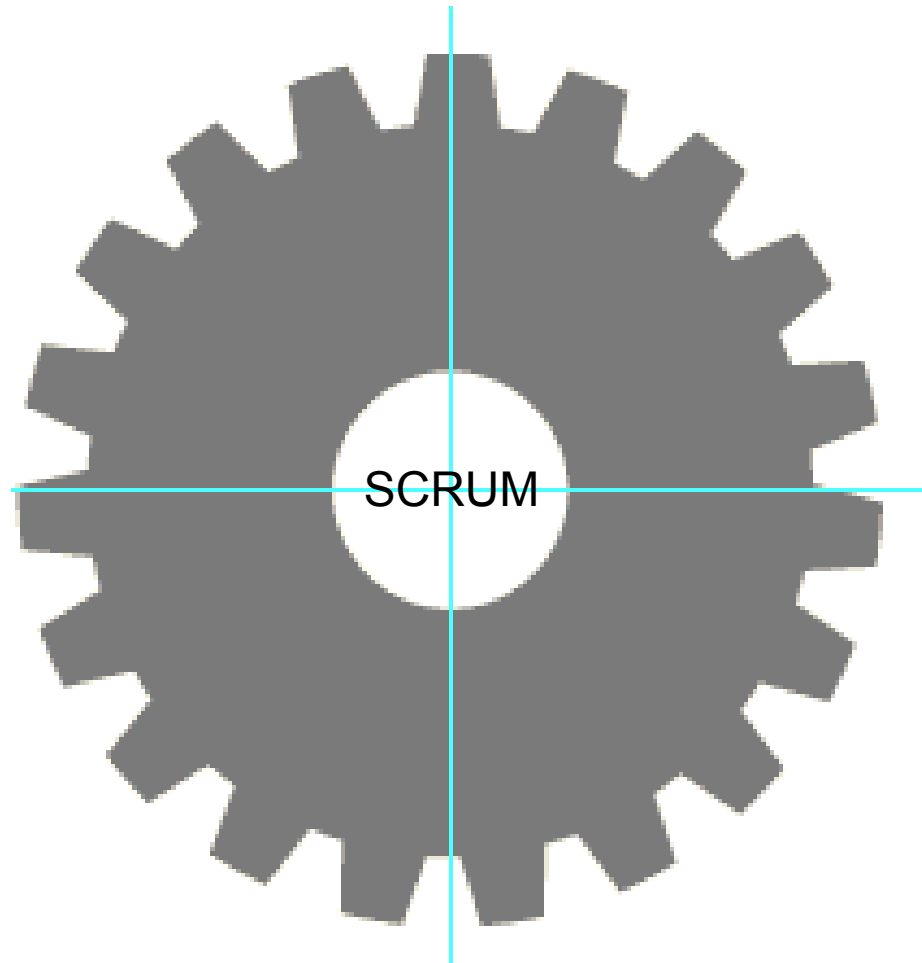
	Product Backlog Item (PBI)	Priorities
1	As a visitor/member, I want to register, login and update of my user account information	<p style="text-align: center;"><b>Prioritized by business risk and value</b></p>
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# A convenient tool...

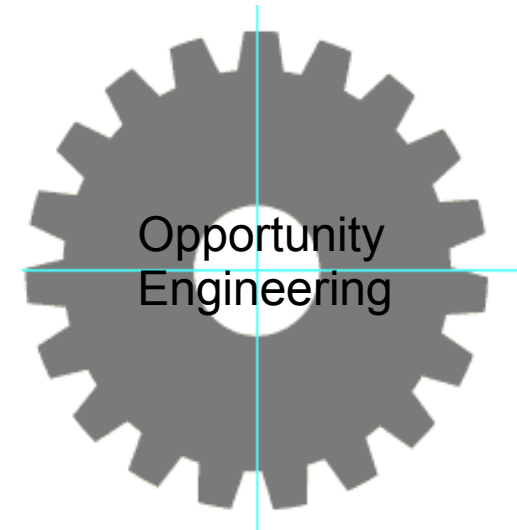
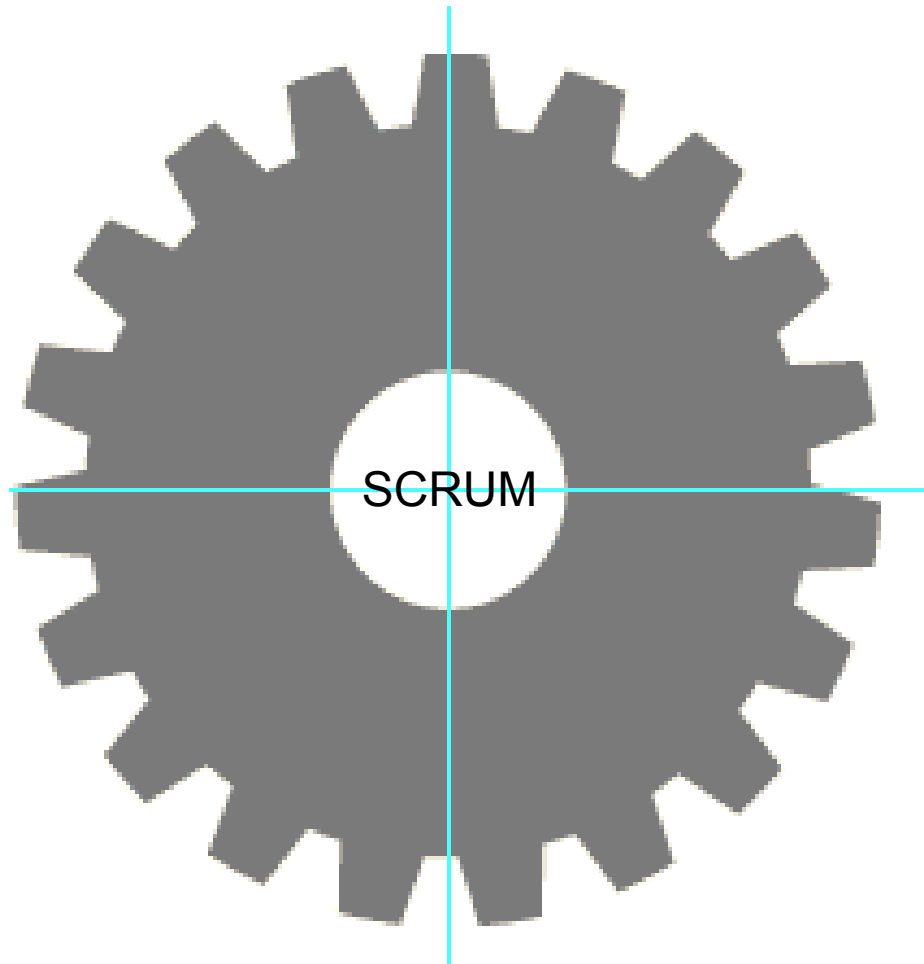


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# A convenient marriage...

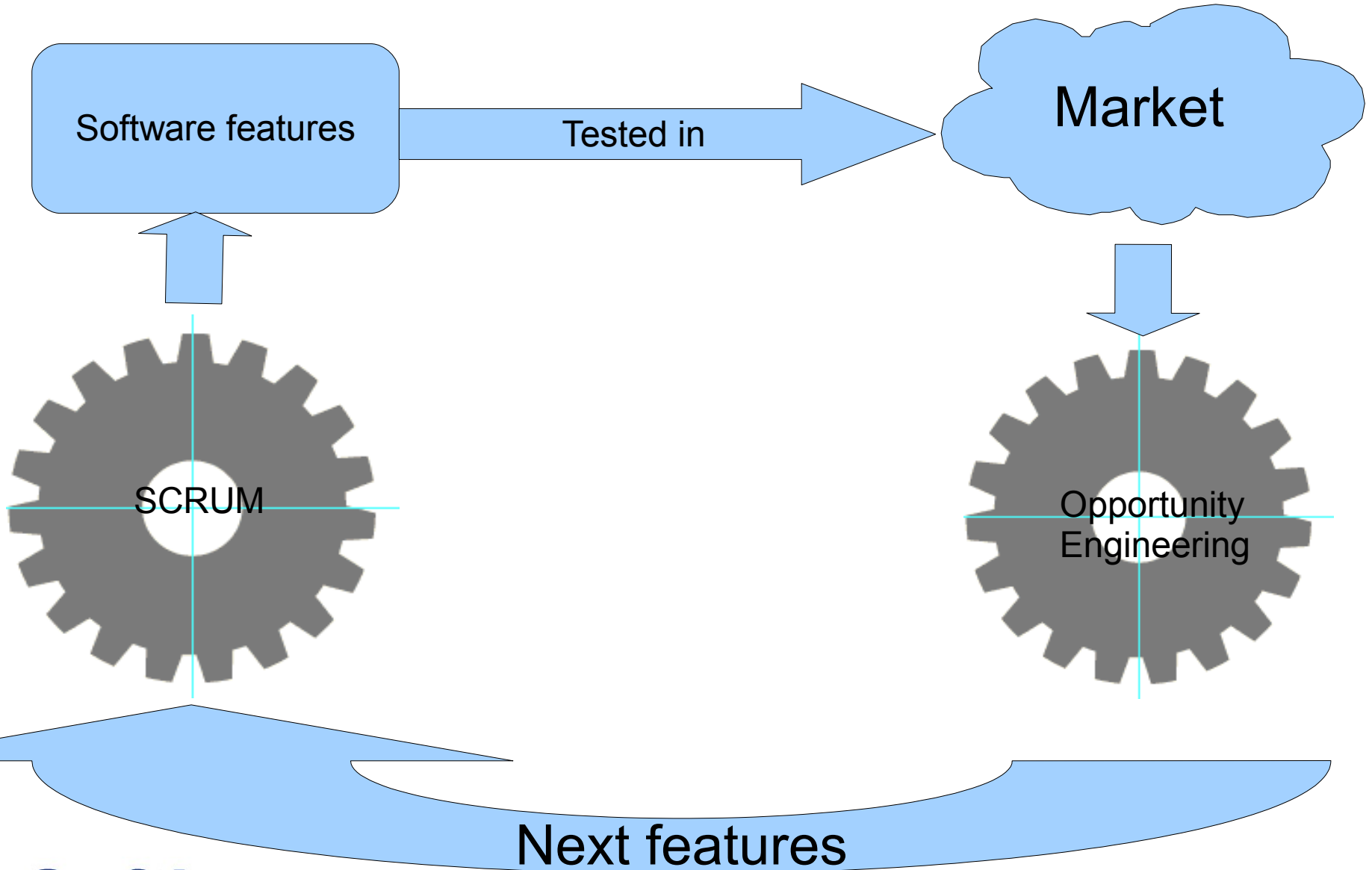


# A convenient marriage...



**That delivers  
value**

# A convenient marriage...



# Ever after...

- Opportunity Engineering still new but you should continue to hear about it.
- In the software development industry, only a clear empirical process with iterative delivery of usable features could support Opportunity Engineering.

# SCRUM!

# References

- “Unlocking opportunities for growth: How to profit from uncertainty while limiting your risk” *from and Alexander B. Van Putten and Ian C. Macmillan*
- “Agile Product Management with Scrum: Creating products that customers love” *from Roman Pichler*
- “Practices for scaling Lean & Agile development” *from Craig Larman and Bas Vodde*

