ClearD3

Approach to RCT (A/B Testing) Performance Assessment

Version 1.0   02/02/2023

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1 | About ClearD3™ RCT (A/B Testing)

In all implementations of ClearD3™ we strongly recommend setting up A/B testing infrastructure.

Otherwise known as Randomized Controlled Trial, A/B testing is the gold standard for assessing the impact of any change in decision making. Using this method, it is possible to reliably identify the impact of the system on the profitability, make necessary adjustments to achieve continuous improvements.

A/B testing helps neutralize the "other" external effects such as better or worse business environment, better or worse product etc .

For more on application of A/B testing (randomised controlled trials) in business, please consult the following INSEAD resource:

https://knowledge.insead.edu/leadership-organisations/why-firms-should-conduct-randomized-controlled-trials-9261

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2 | **The set-up of A/B testing**

Quote requests sent to the ClearD3™ server are randomly assigned to Group A or Group B.

For quotes in Group A, ClearD3™ send the price advice, while for quotes in Group B, **no price advice** is sent back.

The system aims at a certain allocation of the **value** of quotes received. For example, an allocation of 80%/20% (this mix is set by the company) would mean that the system will aim for sending price advice for approximately 80% of received quotes by estimated value.

For example, at any given time, of 100 received quotes, 77 could be in Group A and 23 could be in Group B depending on the average volume/price of the quotes and time of the day.

Quotes with very large value compared to the average (e.g. over 3 standard deviations) are not included in either group. These quotes receive a ClearD3™ price advice but do not participate in the performance calculation as they affect the similarity of the two groups.

	Group A	Group B
Quotes	77	23
Acceptance rate	46%	50%

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3 | Acceptance rates, revenues and profit margins

Acceptance rates will depend on the price difference between Group A & B driven by ClearD3™ advice.

In this example ClearD3™ expects increasing demand and raises the average price levels.

The system will monitor the **actual number of orders** for the accepted quotes and **the actual revenues** for those orders.

Average price per order is calculated as the ratio of the actual revenues and number of orders.

The costs are the marginal direct costs for each order, drawn from the ERP/data warehouse in the end-of-day update process.

Average cost per shipment is the ratio of the actual costs and the number of orders. **Cash margin** is calculated as the difference between Revenues and Costs, while % Profit Margin is the ratio of Cash margin and Revenues.

The difference between **19.1% and 17.0% (2.1%)** reflects only that the prices in Group A are higher. This does not mean that there have been more cash profits generated, since higher prices could mean lower accepted volumes.

The goal of ClearD3™ is to generate higher REAL cash earnings with the same assets.

	Group A	Group B
Quotes	77	23
Acceptance rate	46%	50%
Accepted quotes (actual)	35	12
Actual orders for quotes	106	35
Average price	680	660
Revenues (from actual orders)	72,257	22,770
Cost (from actual orders)	58,443	18,906
Average cost per shipment (AB group for all)	550	548
Cash margin	13,814	3,864
% Profit Margin	19.1%	17.0%

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4 | Net cash added

In order to calculate the real net cash added, we need to create a what-if scenario: "What if the same volume as in Group A was priced without ClearD3™?", i.e. with the acceptance rate and average price of Group B?

We call this Group AB -> Group A quote volumes with Group B pricing. This is exactly what the business would look like without ClearD3™'s pricing. This means the quote volumes are the same as in Group A, but acceptance rate is as in Group B.

The company would push through 116 orders instead of 106 at 660 average price instead of 680. The revenues would have been 76,230 (vs. 72,257), but the cash margin would be 12,762, or **1,052** lower. This is 1.4% of the revenues the company would have had.

The 1.4% is net cash margin that the ClearD3™ decision-making has added to the business. This number takes into account the loss of volume due to higher pricing (106/116 -1 = **-8.7%**). Putting through lower volume, the company has achieved more cash generation.

Note, that the general fixed/indirect costs do not figure in this calculation, as in the short-term they occur independent of the volume/price decisions.

	Group A	Group B	Group AB (A volumes, B pricing)
Quotes	77	23	77
Acceptance rate	46%	50%	50%
Accepted quotes (actual)	35	12	39
Actual orders for quotes	106	35	116
Average price	680	660	660
Revenues (from actual orders)	72,257	22,770	76,230
Cost (from actual orders)	58,443	18,906	63,468
Average cost per shipment (AB group for all)	550	548	549.5
Cash margin	13,814	3,864	12,762
% Profit Margin	19.1%	17.0%	16.7%

+1,052

or 1052/76230 = +1.4%

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5 | Targeting market share gain / revenues (in pricing policies)

ClearD3™'s high-level target is always generating more cash margins. Even if the company's goal is to increase market share, this cannot be at any cost (otherwise it would be simple to give away the product for free or a fraction of the price).

At the same time, in the total mix of products, the company may have routes/products or services where the company wants to price more aggressively. This is achieved by setting a pricing policy with a revenue target.

Such a policy (as in the example, assuming the 100 quotes are for routes/products with such a policy) does not mean that cash margin is ignored. It simply means that the policy is applied with a stricter volume give-up.

The system does not use the maximum opportunity to generate cash in products where the goal is to gain market share.

Note that volume give-up does not mean shrinking volumes in reality. This example assumes increasing demand, which means that the actual volumes (year-on-year) would be up.
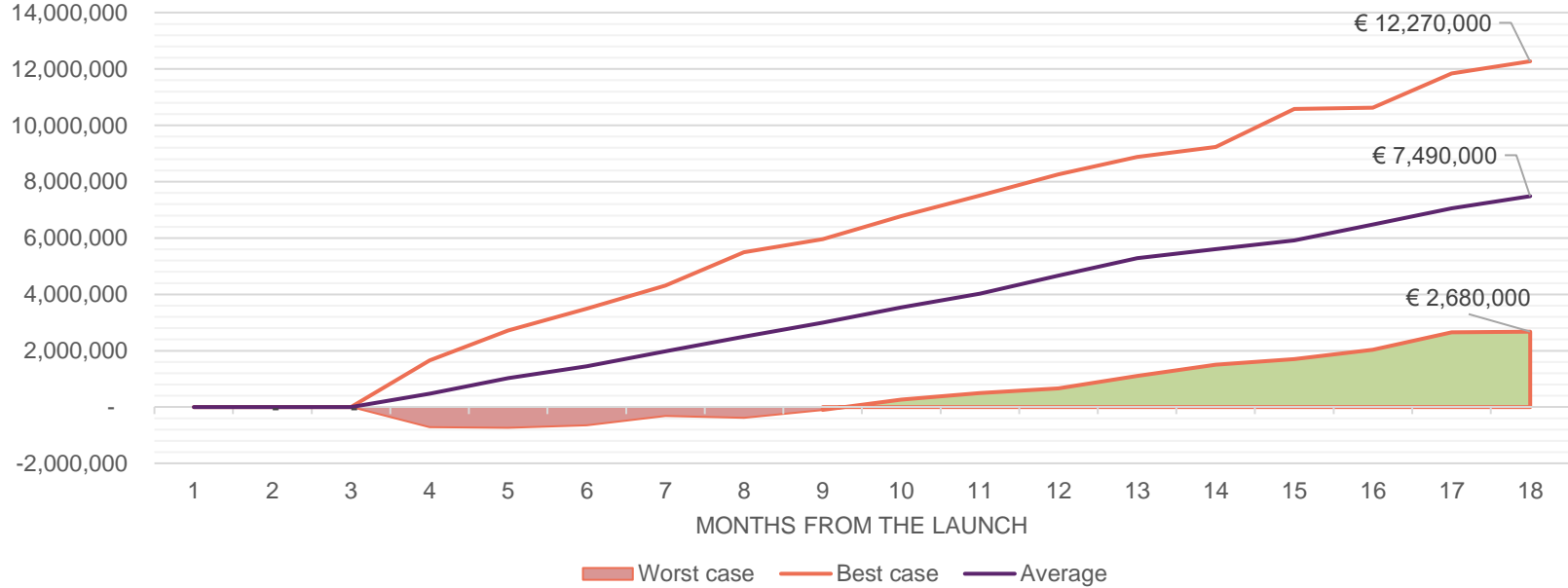
	Group A	Group B	Group AB (A volumes, B pricing)
Quotes	77	23	77
Acceptance rate	49%	50%	50%
Accepted quotes (actual)	38	12	39
Actual orders for quotes	113	35	116
Average price	665	660	660
Revenues (from actual orders)	75,271	22770	76,230
Cost (from actual orders)	62,255	18906	63,471
Average cost per shipment (AB group for all)	550	548	549.5
Cash margin	13,017	3,864	12,759
% Profit Margin	17.3%	17.0%	16.7%

Net cash added +0.3%
Volume give-up -2%

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Expected performance range

Additional cash margin (EUR) for a company with revenues of 150 mln.

€ 12,270,000

€ 7,490,000

€ 2,680,000

MONTHS FROM THE LAUNCH

Worst case   Best case   Average

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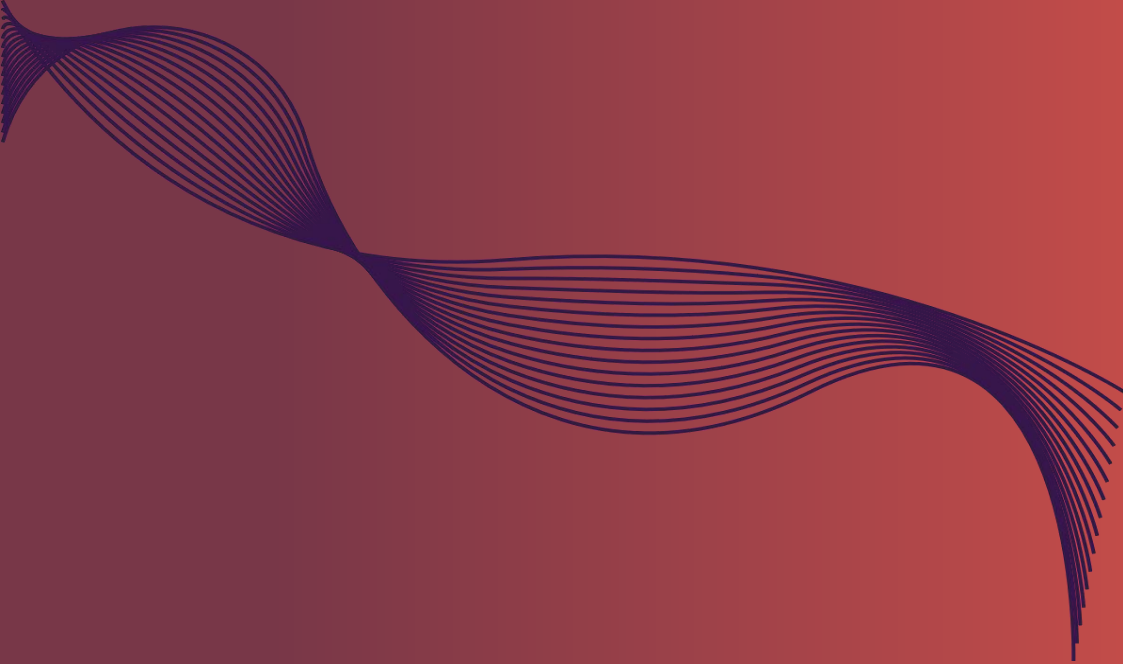
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data advantage.

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