

Business Model Equations



Supa Wetti Pty Ltd have seen a decline in sales over the last two years but do not know the cause of the downturn.

1iDEA are engaged to help understand the cause and create a predictive model containing the critical factors to develop a strategy for the future years.

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- Its mid 2017, you are owner of a small online business called Supa Wetti Pty Ltd selling & distributing two wet suit products purchased via the internet.
- You set up your business in 2014 with Product Line A and dominated the local market.
- The products are purchased by customers annually.
- Customers are thrilled with Supa Wetti's product's which is reflected in sales.
- In response to direct customer feedback and suggestions, 2 years later you introduced Product Line B.
- Your business is stable.
- At EOFY17 you noticed that sales decreased.
- You are familiar with the industry and the rates at which customers re-purchase your products.
- But this does not explain the magnitude of the downturn in sales since it used to clear \$250k per year.



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Trend Analysis

Analyse existing data to develop an understanding of your product's performance.

Breakdown the data to emphasise trends with different cohorts and product lines.



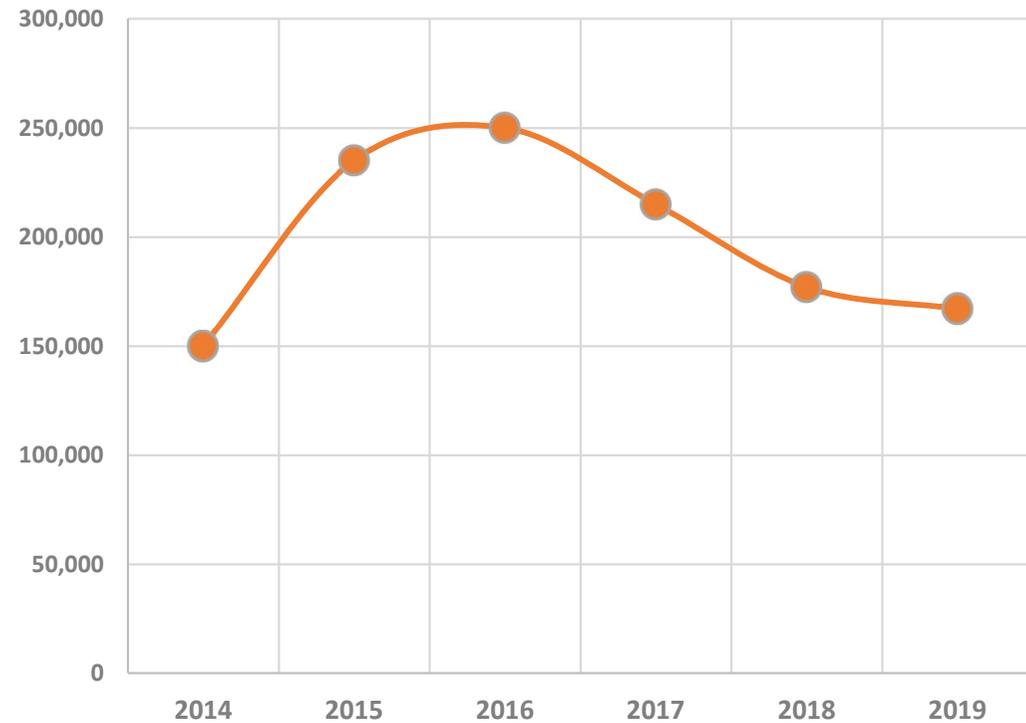
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Trends

You may have accepted that 2017 was simply a “bad year” by subjectively accounting for national economics, the weather or an other reason.

Plotting the data year on year, you show that sales and profits in 2018 and 2019 have also declined.

Sales





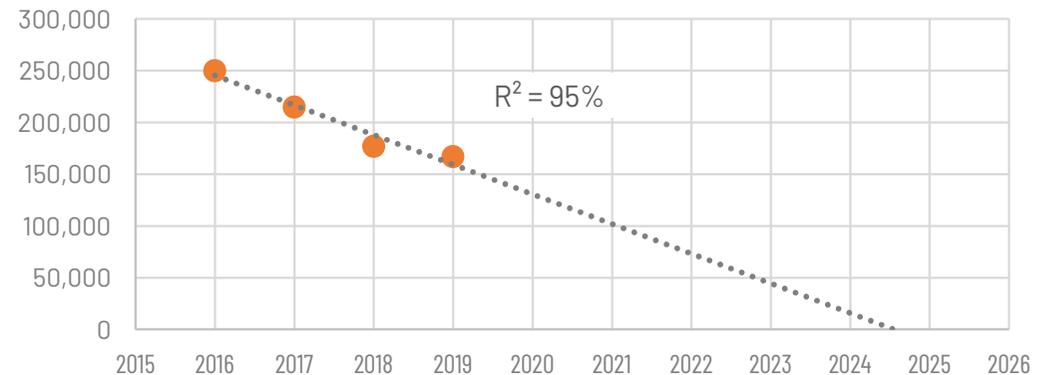
If unaddressed, the forecast is not good.

Realistically, by 2022 sales will be one quarter of the sales immediately post launch in 2016.

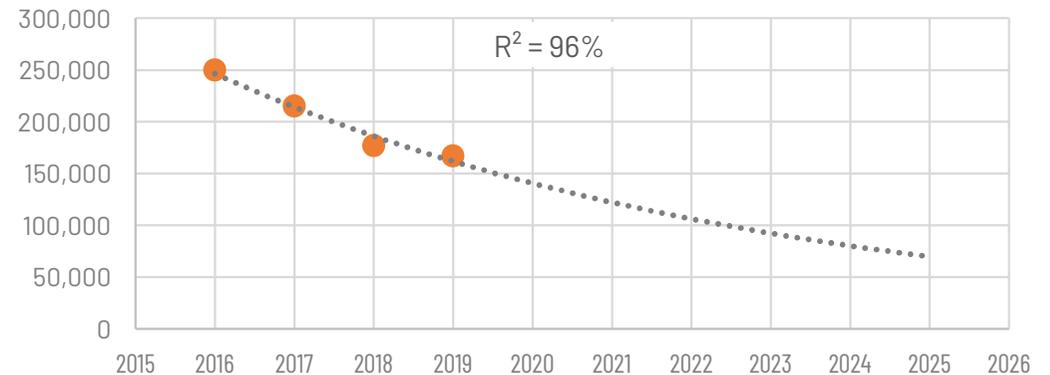
Its possible that by 2024 you could be bankrupt unless recovery action is taken.

Simple linear and logarithmic best fit lines showing similar strengths of fit provide the forecast with high confidence.

Actual Sales with Linear Forecast



Actual Sales with Exponential Forecast



R^2 is a measure of correlation strength: 0 is none, 1 is perfect.



Qu: How can we identify the causes so we can rectify the negative trend?

Answer: Analyse existing sales/order data by breaking the data down further:

- By each product line A & B.
- By key customer types. This helps understand, define and confirm your target customers.
 - For each customer profile we can create similar trends over the same time period to show increasing, decreasing or stable trends and identify the cohorts most greatly affecting sales/profits.



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Investigation

Existing data may not reveal all the factors contributing to changes in business outcomes.

Overlay other open sources of information to provide a more complete picture of your product's market.



- You talk to specific customers and identify that some have learned of a new product to be launched shortly by a company called “Ultra Flex” that previously did not operate in your market place and will contend with Product lines A & B.
- Your customers are waiting to purchase the new product instead of returning to purchase a Supa Wetti Product.
- You acquire Ultra Flex’s product information and make a comparison.
- You identify some features that are different.

Attribute	Product A	Product B	Competitor
Comfort	OK	Good	Excellent
Flexibility	Low	Medium	High
Insulation	Low	Medium	High
Colour Range	3	3	5
Price (\$)	250	380	285
Specification			
Material F	Yes	Yes	Yes
Material G	-	-	Yes
Thickness	2.5mm	3.2mm	2.8mm
Sealing	OK	OK	Excellent
Black	Yes	Yes	Yes
Blue	Yes	Yes	Yes
Pink	Yes	Yes	Yes
Purple	-	-	Yes
Orange	-	-	Yes



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Satisfaction Survey

Analysing data from a satisfaction survey quantifies both the rational and emotional factors contributing to your outcome.

Your outcome may be sales volumes, overall satisfaction, probability of referral, price, engagement rates, connectivity, return rates, number of claims, etc.



- Collectively, products from Supa Wetti & Ultra Flex have several attributes which you believe are a customer's reason to buy.
 - An attribute is a collection of different characteristics.
- You develop and distribute a satisfaction survey with images and specifications of the three products to understand your customers opinions of each attribute.
- Since they are your existing customers, you also have their purchase history which is a competitive advantage.
- By combining the purchase history data and survey feedback, you have valuable information to create a predictive sales model which includes the key product attributes.



Satisfaction Rating Results (averages)

Attribute	Prod A	Prod B	Competitor
F0.Overall Satisfaction	7.2	7.4	8.3
F1.Comfort	6.5	7.5	8.5
F2.Fexibility	7.5	6.5	8.5
F3.Insulation	7.5	7.8	8.0
F4.Appearance	6.0	7.0	8.0



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Business Model Equations

Attribute Level Satisfaction ratings often strongly influence Business metrics such as sales volumes and reputation.

Multi-factor Regression Analysis calculates the statistical significance of the factors and quantifies their contribution to the business outcomes.



A generic business model equation looks like this...

$$Y = a \times F1 + b \times F2 + c \times F3 + d \times F4 + k$$

Where

Y = Overall Satisfaction Rating or Price Paid (\$)

F1 = Satisfaction with Feature #1 – Comfort

F2 = Satisfaction with Feature #2 – Flexibility

F3 = Satisfaction with Feature #3 – Insulation

F4 = Satisfaction with Feature #1 – Range of Colours

a,b,c,d = coefficients defining the influence or contribution

K = constant



Supa Wetti's Business Model Equation

Supa Wetti's business model equation looks like this.

$$Y = 16 \times \mathbf{F1} + 8 \times \mathbf{F3} + 4 \times \mathbf{F4} \\ + 140 \times \text{Prod B} + 60 \times \text{Prod A} + 50 \times \text{Competitor}$$

Attribute Variables

Product Constants

Notes:

Not all Attributes are statistically significant. F1 Comfort is more strongly correlated to Unit Price than F2 Flexibility. F1 & F2 are also strongly correlated with each other. Since F1 is more strongly correlated to Price, F2 is removed from the equation but F2 must not be forgotten. The model also suggests there are other smaller factors contributing to Comfort which may be worth exploring.

The coefficients (multipliers before each Factor) indicate that F1 Comfort has twice the influence on Price as F3 Insulation & four times the influence as F4 Appearance.

The Competitor's product introduces a new material which is thinner than Product B, has superior flexibility while maintaining the insulating properties and adding more "on-trend" colours to the range.



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Strategy

The threat of a new competitor's product disrupting your business requires an action plan and a new strategy.



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Product Research

Since Comfort and Flexibility are strongly correlated, further customer research reveals the

- Common measurable factors are F5 Sizing & F6 Elasticity.
- Additional measurable factors are F7 Cut & F8 Access (getting in to and out of the wet suit).



Following an Idea Creation and Development Workshop, Supa Wetts are implementing the following strategy to improve each attribute's performance. Constant analysis of data will verify the effect of each action.

Attribute	Launch	Action
Incentives	0-Now	Socialise a promotion code for new customers.
Sizing	30 days	Adjust baseline cut and redefine sizes.
Repackage	30 days	Uplift customer's receiving experience via mail, redesign product cards.
Business Model	30 days	Introduce RONAT "Return Old for New at Discount" program to reward loyal customers.
Appearance	90 days	Research latest trends in extreme sports that appeal to younger customers.
Features	120 days	Add waterproof pocket on upper arm and additional zip. Perform Statistical Experimentation for Functional & Appearance Prototypes.
Elasticity	180 days	Develop more stretchy and flexible "one-shot" insulating material and production process.



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Supa Wetti's New Business Model

After successful statistical experimentation * using physical and appearance prototypes with a sample of existing & new customers, the new Business Model Equation becomes

$$Y_n = 3 \times F5 + 6 \times F6 + 4 \times F7 + 3 \times F8 + 4 \times F3 + 5 \times F4 \\ + 100 \times \text{Prod B} + 50 \times \text{Prod A} + 80 \times \text{Competitor}$$

Notes:

6 Attributes define a much stronger Business Equation based on two revised products, each delivering higher satisfaction ratings.

** Statistical Experimentation and Prototyping is demonstrated in other 1iDEA Case Studies.*



The new Business Model Equation generates a revised pricing strategy.

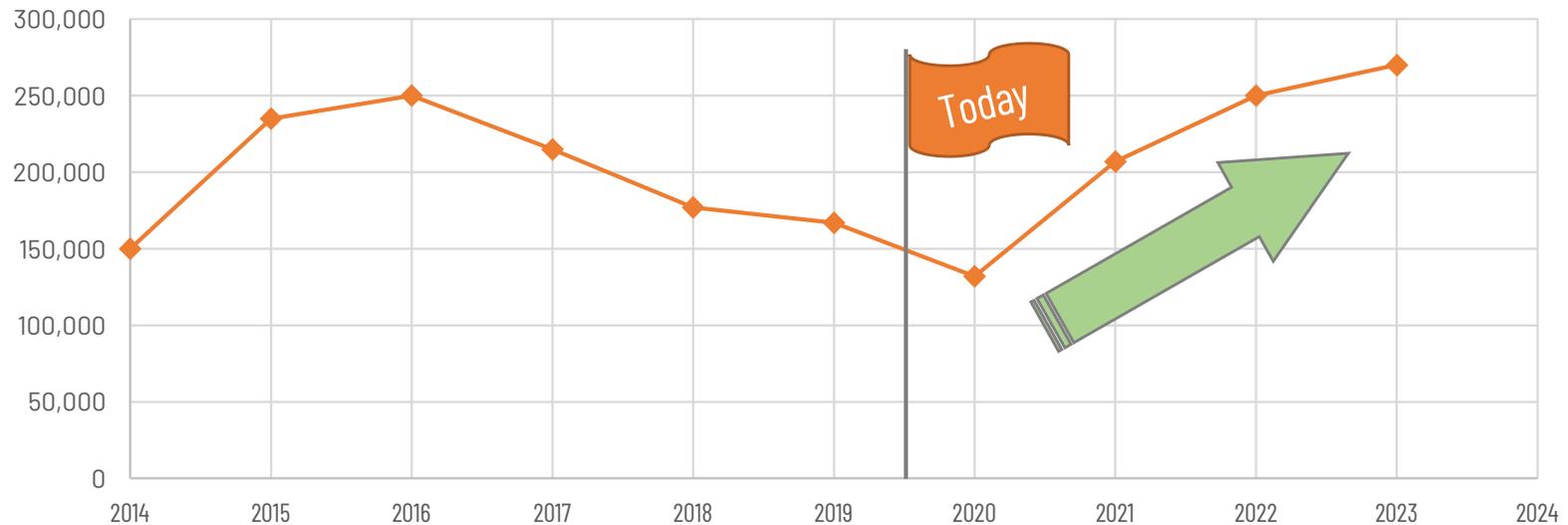
Product	Supa Wetti A	Supa Wetti B	Ultra Flex C
Old	\$ 250	\$ 380	\$ 285
New	\$ 255	\$ 310	\$ 275

Supa Wetti have acquired new customers and retained existing customers with the RONAT program (despite a new competitor's offering entering the market).

Supa Wetti's customers are very satisfied with contemporary styling, more sizing options, better cut, easier access, greater elasticity & additional features while maintaining the necessary insulating properties.



All History & Future Plan



Sales and Revenue continued to slide a little in 2020 as actions were implemented and Ultra Flex's products enter the market.

Supa Wetti's product lines A & B recovered to previous sales volume levels and consistently delivered superior product quality from 2021 onwards.

Supa Wetti requires a product revision every 6-7 years to maintain sales volumes and revenue.

All you need is...



This case study is based on real world examples and has been created to educate and emphasise the importance of data analysis to business success.

1iDEA recommends reading Case Studies on Statistical Experimentation and Prototyping

Contact 1iDEA to discuss your requirements for Idea Creation & Development Workshops