

Quantitative Consulting for Business

Bundling and Upselling tools



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Cross-selling activities and product bundling rank among the most important activities to increase revenue and profit.

Cross-Selling

is often based on the intuition of the sales person. For large portfolios (e.g. books, CDs, frozen goods) and electronic markets, **statistical methods** can dramatically improve the efficiency of this method:

- **Insurance**
 - Insurance against loss/theft of your mobile phone
 - Travel insurance
- **Banking**
 - Credit card with a checking account
- **(Internet-) bookshop**
 - „Customers who bought title X also bought title Y“
- **Accessories**
 - Laptop bags etc.

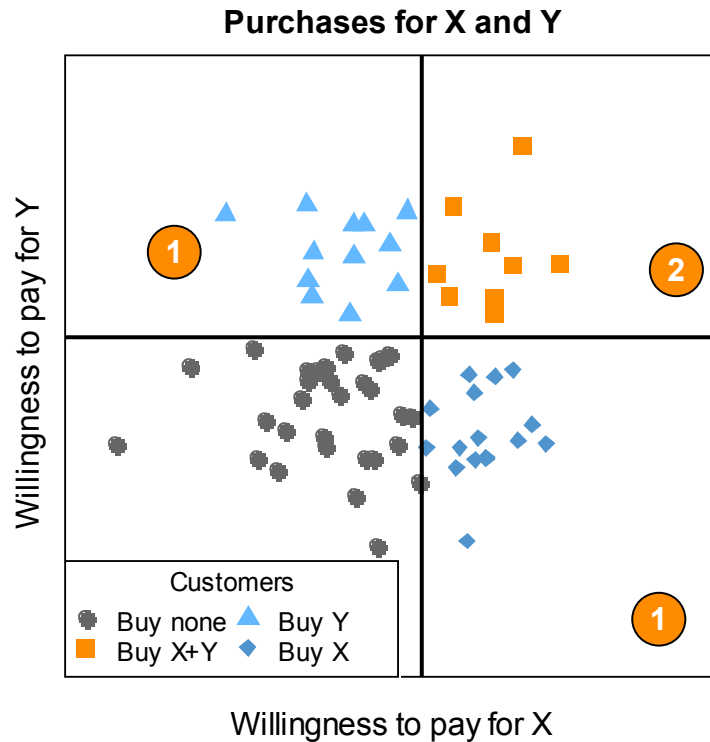
Product bundles

are a systematic form of cross-selling, making you buy things that you would not have bought otherwise:

- **Menu in a restaurant**
 - Entree, main course, desert
- **Microsoft Office**
 - Access, Excel, PowerPoint, Word
- **Travel packages**
 - Flight, bus, hotel, meals
- **Car packages**
 - Navigation, stereo, climate control
- **Mobile phone contracts**
 - x minutes per month free, y texts and free connection to your partner's phone



Product bundles work best for product combinations where customers have a high willingness to pay only for part of the products.



- 1 Customers buy a product, when their WTP for the product is higher than the price
- 2 Only few customers have a high WTP for both products
- 3 The diagonal ($X+Y = \text{Price}$) represents a uniform price for the bundle
- 4 A few customers stop buying
- 5 Many customers now buy the bundle



Market basket analysis tells you, which of your products are bought together and which are not.

Base scenario

“Sales of different products are independent”

In Basket	Product	A	B	C	D	...
Product		40%	20%	35%	30%	...
A	40%	40%	8%	14%	12%	...
B	20%	8%	20%	7%	6%	...
C	35%	14%	7%	35%	11%	...
D	30%	12%	6%	11%	30%	...
...

Real situation

“Some products are bought together, some not”

Real vs Basis	Product	A	B	C	D	...
Product						
A		0%	35%	-60%	14%	...
B		35%	0%	5%	-23%	...
C		-60%	5%	0%	47%	...
D		14%	-23%	47%	0%	...
...	

- The combination of products C and D can be found in 11% of the baskets
- Product C is found in 35% of the baskets

- Read: In reality the combination of products C and D is 47% more frequent than in the independence scenario



The results of the market basket analysis are combined with revenue or profitability figures to build a tool giving cross-selling recommendations.

Coffee chain example

Cross-selling recommendation vs. target function

		Coffee	Juice	Bagel	Muffin	...
First product	Revenue	3,50	2,50	3,00	2,00	...
	Profit	2,00	0,70	1,00	0,50	...
Bagel	% 2 nd Product	15%	30%	5%	5%	...
	Additional Revenue	0,53	0,75	0,15	0,10	...
	Additional Profit	0,30	0,21	0,05	0,03	...
Juice	% 2 nd Product	5%	2%	15%	20%	...
	Additional Revenue	0,18	0,05	0,45	0,40	...
	Additional Profit	0,10	0,01	0,15	0,10	...