## Description and current market situation



Pizza restaurants in Jülich, the arrow points at the planned location of our pizza restaurant

We observed that there is no pizza restaurant situated near the campus in Jülich. The next ones are found downtown (about 20-30 min walk) and sell pizza at prices between 4 and $10 €$. For students and staff of the university a pizza restaurant at the campus would be a fantastic alternative to eating in the canteen. Moreover, warm dishes would be available at relatively low prices and quite fast near to the students' hostels, also in the evening when the canteen is closed. A pizza restaurant could also become a meeting place for the inhabitants of the students' hostels. The fact that there are more and more appartments constructed will lead to an even higher demand in the future.

## Business idea

We will offer pizza at relatively low prices in a friendly environment. The offering will be very flexible because no pizza with a certain name and preset ingredients will be offered but customers can choose their favourite pizza topping from a list of ingredients. The price for one pizza will increase with the number of ordered ingredients.
We employ students as casual employees so that they can advertise the restaurant in their social environment.

The name of the restaurant will be „Pizza Palace" and it will be located right next to the FH buildings. There will be space for about 20 people in the restaurant and the offer to order pizza and take it with you or get it delivered.
A piece of land of $120 \mathrm{~m}^{2}$ will be needed for a kitchen and storage of $70 \mathrm{~m}^{2}$, toilet of $10 \mathrm{~m}^{2}$ and a main room of $40 \mathrm{~m}^{2}$. The piece of land will be bought and a building constructed on it.
The licence for restaurants given from the municipality will cost about $500 €$.
The restaurant will be opened every day from 11am until ca. 11pm.
Down payment will be done as equal amounts from Max Müller and Timo Löher.

## Calculation of costs for land and building

| Description | number | price per unit/ $€$ | Investment | Depreciation(years) | Depreciation costs |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |  | 0 |
| estate $\left(\mathrm{m}^{2}\right)$ | 120 | 105 | 12600 | 0 | 0 |
| building | 1 | 150000 | 150000 | 50 | 3000 |
| TOTAL |  |  | 162600 |  | 3000 |

## Calculation of fixed costs

| Description | number | price per unit/€ | Investment | Depreciation (years) | Depreciation costs |
| :---: | :---: | :---: | :---: | :---: | :---: |
| baking oven | 1 | 3640 | 3640 | 10 | 364 |
| dishwasher | 1 | 1500 | 1500 | 10 | 150 |
| refrigerator | 1 | 800 | 800 | 10 | 80 |
| tables | 5 | 60 | 300 | 10 | 30 |
| chairs | 20 | 40 | 800 | 10 | 80 |
| workbench (m) | 5 | 66,67 | 333 | 10 | 33 |
| shelves | 5 | 50 | 250 | 10 | 25 |
| knives | 100 | 5 | 500 | 10 | 50 |
| forks | 100 | 5 | 500 | 10 | 50 |
| glasses | 100 | 2 | 200 | 5 | 40 |
| cutting boards | 4 | 5 | 20 | 5 | 4 |
| mixing bowl | 4 | 10 | 40 | 10 | 4 |
| plates | 100 | 10 | 1000 | 5 | 200 |
| pizza spatula | 2 | 30 | 60 | 10 | 6 |
| pizza cutter | 2 | 30 | 60 | 5 | 12 |
| lamps | 10 | 10 | 100 | 10 | 10 |
| telephone | 1 | 25 | 25 | 10 | 3 |
| transport box | 2 | 30 | 60 | 10 | 50 |
| menu cards | 5 | 3 | 15 | 10 | 1,50 |
| cash register | 1 | 180 | 180 | 10 | 18 |
| first aid kit | 1 | 21 | 21 | 3 | 7 |
| licence | 1 | 500 | 500 | 0 | 0 |
| TOTAL |  |  | 10904 |  | 1173 |

Total investment and financing

| goods | investment | depreciation costs |
| :--- | :--- | :--- |
| land and building | 162600 | 3000 |
| furniture and equipment | 10904 | 1173 |
| unexpected | 10000 | 0 |
| circulating capital | 5000 | 0 |
| TOTAL | 188504 | 4173 |

$40 \%$ will be paid from the own capital of the owners, for $60 \%$ a bank loan will be needed, running for 10 years with an interest rate of $7 \%$.

| Total investment | $100 \%$ | $188504 €$ |
| :--- | :--- | :--- |
| from own capital | $40 \%$ | $75401,60 €$ |
| from bank loan | $60 \%$ | $113102,40 €$ |

The financing plan looks like this:

| year | Balance of dept | interest rate | interest costs/a | refunding bank loan |
| ---: | ---: | ---: | ---: | ---: |
| 1 | 113102,4 | 0,07 | 7917,17 | 11310,24 |
| 2 | 101792,16 | 0,07 | 7125,45 | 11310,24 |
| 3 | 90481,92 | 0,07 | 6333,73 | 11310,24 |
| 4 | 79171,68 | 0,07 | 5542,02 | 11310,24 |
| 5 | 67861,44 | 0,07 | 4750,30 | 11310,24 |
| 6 | 56551,2 | 0,07 | 3958,58 | 11310,24 |
| 7 | 45240,96 | 0,07 | 3166,87 | 11310,24 |
| 8 | 33930,72 | 0,07 | 2375,15 | 11310,24 |
| 9 | 22620,48 | 0,07 | 1583,43 | 11310,24 |
| 10 | 11310,24 | 0,07 | 791,72 | 11310,24 |
| sum interest |  | 43544,42 |  |  |
| sum repayment |  |  | 113102,4 |  |

## Personel costs

| Description | number | brut € per month | labour costs per month/€ |
| :--- | ---: | ---: | ---: |
|  | 2 | 1800 | 4293 |
| baker | 1 | 2500 | 2981,25 |
| book keeper | 4 | 450 | 2386,62 |
| stand-in | 7 |  | 9660,87 |
| TOTAL |  |  |  |

The three full time workers will be occupied 8 hours per day on average, the casual employees will work 10 hours a week and do jobs like waitressing, delivering pizza, cleaning etc.
The labour costs of the full time employees include $14 \%$ on salary for health insurance, $19,5 \%$ for retirement insurance and $5 \%$ for unemployment insurance. The taxes on their salary will be shared equally between them and the owners.
Labour costs for casual employees include $13 \%$ on salary for health insurance, $15 \%$ for retirement insurance and $4,59 \%$ other taxes which have to be payed by the employer completely.

Example:
a pizza baker gets $1800 € /$ month
$(0,14+0,195+0.05) * 1800 * 0,5+1800=2146,5 €$ labour costs for one baker per month.

## Consumption costs

Costs for the ingredients are calculated as average values per customer.

| Description | number | costs/unit | unit | costs per customer/€ |
| :--- | ---: | ---: | :--- | ---: |
| pizza boxes | 1 | 0,16 | 1 piece | 0,160 |
| gloves | 4 | 0,08 | 1 piece | 0,320 |
| oil | 0,01 | 3,99 | 1 l | 0,040 |
| flour | 0,125 | 0,32 | 1 kg | 0,040 |
| yeast | 0,003 | 14,98 | 1 kg | 0,045 |
| eggs | 0,06 | 3,5 | 1 kg | 0,219 |
| ham | 0,03 | 1,45 | 1 kg | 0,048 |
| salami | 0,03 | 1,2 | 1 kg | 0,033 |
| cheese | 0,11 | 10 | 1 kg | 1,111 |
| spinach | 0,02 | 2 | 1 kg | 0,044 |
| tomatos | 0,04 | 3,8 | 1 kg | 0,169 |
| pineapple | 0,02 | 4 | 1 kg | 0,067 |
| corn | 0,02 | 1,7 | 1 kg | 0,038 |
| artichokes | 0,01 | 7 | 1 kg | 0,078 |
| jalapenos | 0,01 | 4,8 | 1 kg | 0,053 |
| broccoli | 0,01 | 5 | 1 kg | 0,044 |
| mozzarella | 0,03 | 6,7 | 1 kg | 0,223 |
| mushrooms | 0,02 | 3,22 | 1 kg | 0,054 |
| tuna | 0,03 | 4,81 | 1 kg | 0,160 |
| bacon | 0,04 | 1,5 | 1 kg | 0,067 |
| potatoes | 0,03 | 0,99 | 1 kg | 0,033 |
| onions | 0,02 | 0,4 | 1 kg | 0,009 |
| ketchup | 0,01 | 3,8 | 1 kg | 0,042 |
| barbecue sauce | 0,01 | 10 | 1 kg | 0,056 |
| cola | 0,11 | 0,78 | 1 l | 0,087 |
| sprite | 0,11 | 0,78 | 11 | 0,087 |
| fanta | 0,11 | 0,78 | 11 | 0,087 |
| water | 0,13 | 0,78 | 11 | 0,104 |
| TOTAL |  |  |  | 3,517 |
|  |  |  |  |  |

## Self cost calculation

The calculation of self costs per average customer was done for the first 10 years assuming a $100 \%$ capacity of 15428,52 pizzas per year. (The capacity of the baking oven we planned to buy could be 103680 pizzas per year but a utilization of that kind would be a non-realistic assumption.)

| year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \% of capacity | 70 | 80 | 90 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| customers quantity | 10800 | 12342,84 | 13885,68 | 15428,52 | 15428,52 | 15428,52 | 15428,52 | 15428,52 | 15428,52 | 15428,52 |
|  |  |  |  |  |  |  |  |  |  |  |
| costs |  |  |  |  |  |  |  |  |  |  |
| depreciation | 4173 | 4173 | 4173 | 4173 | 4173 | 4173 | 4173 | 4173 | 4173 | 4173 |
| financing | 7917,17 | 7125,45 | 6333,73 | 5542,02 | 4750,3 | 3958,58 | 3166,87 | 2375,15 | 1583,43 | 791,72 |
| labour | 9420,75 | 9420,75 | 9420,75 | 9420,75 | 9420,75 | 9420,75 | 9420,75 | 9420,75 | 9420,75 | 9420,75 |
| consumption | 37987,57 | 43414,31 | 48841,04 | 54267,78 | 54267,78 | 54267,78 | 54267,78 | 54267,78 | 54267,78 | 54267,78 |
| sum | 59498,49 | 64133,51 | 68768,52 | 73403,55 | 72611,83 | 71820,11 | 71028,40 | 70236,68 | 69444,96 | 68653,25 |
| costs per customer | 5,51 | 5,20 | 4,95 | 4,76 | 4,71 | 4,66 | 4,60 | 4,55 | 4,50 | 4,45 |

One pizza could be sold for a base price of $4 €$ and $0,30 €$ for every added ingredient, a soft drink will cost $1,20 €$.
For example a customer buying a pizza with cheese, barbecue souce, onions, potatoes and bacon pays
$4,00 €+5 * 0,30 €=5,50 €$
Compared with the price range of other pizza restaurants in Jülich ( $4-10 €$ ) this is quite a low price but still profitable. Buying a soft drink $(1,20 €)$ additionally to the meal the customer would even enlarge the profit.

## Calculation of turnover

Taking a pizza with 4 ingredients as an average and assuming that every second customer also buys a soft drink.

| year | price per customer | quantity customers | turnover |
| ---: | ---: | ---: | ---: |
| 1 | 5,8 | 10800 | 62640 |
| 2 | 5,8 | 12342,84 | 71588,472 |
| 3 | 5,8 | 13885,68 | 80536,944 |
| 4 | 5,8 | 15428,52 | 89485,416 |
| 5 | 5,8 | 15428,52 | 89485,416 |
| 6 | 5,8 | 15428,52 | 89485,416 |
| 7 | 5,8 | 15428,52 | 89485,416 |
| 8 | 5,8 | 15428,52 | 89485,416 |
| 9 | 5,8 | 15428,52 | 89485,416 |
| 10 | 5,8 | 15428,52 | 89485,416 |

## Cash flow calculation

| year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| sales profits | 62640 | 71588,43 | 80536,94 | 89485,42 | 89485,42 | 89485,42 | 89485,42 | 89485,42 | 89485,42 | 89485,42 |
| costs |  |  |  |  |  |  |  |  |  |  |
| depreciation | -4173 | -4173 | -4173 | -4173 | -4173 | -4173 | -4173 | -4173 | -4173 | -4173 |
| labour | -9660,87 | -9660,87 | -9660,87 | -9660,87 | -9660,87 | -9660,87 | -9660,87 | -9660,87 | -9660,87 | -9660,87 |
| consumption | -37987,57 | -43414,31 | -48841,04 | -54267,78 | -54267,78 | -54267,78 | -54267,78 | -54267,78 | -54267,78 | -54267,78 |
| financing | -7917,17 | -7125,45 | -6333,73 | -5542,02 | -4750,3 | -3958,58 | -3166,87 | -2375,15 | -1583,43 | -791,72 |
| loss carried forward |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| profit before tax | 2901,39 | 7214,80 | 11528,30 | 15841,75 | 16633,47 | 17425,19 | 18216,90 | 19008,62 | 19800,34 | 20592,05 |
| taxes (40\%) | 1160,56 | 2885,92 | 4611,32 | 6336,70 | 6653,39 | 6970,08 | 7286,76 | 7603,45 | 7920,14 | 8236,82 |
| profit after tax | 1740,83 | 4328,88 | 6916,98 | 9505,05 | 9980,08 | 10455,11 | 10930,14 | 11405,17 | 11880,20 | 12355,23 |
| cash-flow | 5913,83 | 8501,88 | 11089,98 | 13678,05 | 14153,08 | 14628,11 | 15103,14 | 15578,17 | 16053,20 | 16528,23 |
| repayment credit | 14137,80 | 14137,80 | 14137,80 | 14137,80 | 14137,80 | 14137,80 | 14137,80 | 14137,80 | 14137,80 | 14137,80 |
| dividend | -8223,97 | -5635,92 | -3047,82 | -459,75 | 15,28 | 490,31 | 965,34 | 1440,37 | 1915,40 | 2390,43 |

With the assumptions we made our pizza restaurant would be profitable from the fifth year on.

Timo Löher Max Müller

Matr. Nr: 4001692
Matr. Nr: 867423

