



Project Gas Flow Measurement



UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Agenda

- Problem Statement
- Market & Industry Background
- SWOT Analysis
- Technical Suggestions
- Value Added Services
- Business Model
- Revenue Models
- Pricing Strategies
- Recommendations



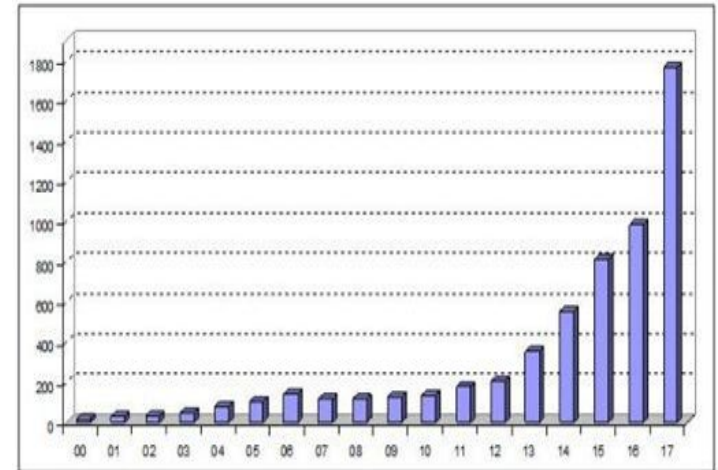
Problem Statement

- **Major functions of Gas-flow**
 - Prevent oxidation of alloys
 - Process emissions away from melt pool
 - Minimize build-up of emissions
- No tool or device currently available in the market to help measure gas flow.
- Solution provided by client helps bridge the gap by providing an effective and simple alternative.



Market & Industry Background

- Additive Manufacturing (AM) market is experiencing exponential growth in recent years.
- China, Europe and the United States are the largest markets for 3D printing. However, AM market is fragmented.
- Need the introduction of standardized methodologies to bring about consistency.



Dramatic rise in metal AM system sales

Source: Wohlers Report 2018

Market Size

Year	2017	2018	2019	2020
EOS Manufacturing Capacity (Units)	1000	2000	2400	2880
Cumulative Sales (Units)	1000	3000	5400	8280
Potential Market (= 90% of Cumulative Sales) - II	900	2700	4860	7452
Actual Number of Clients = (Potential Market/2.5)	360	1080	1944	2981

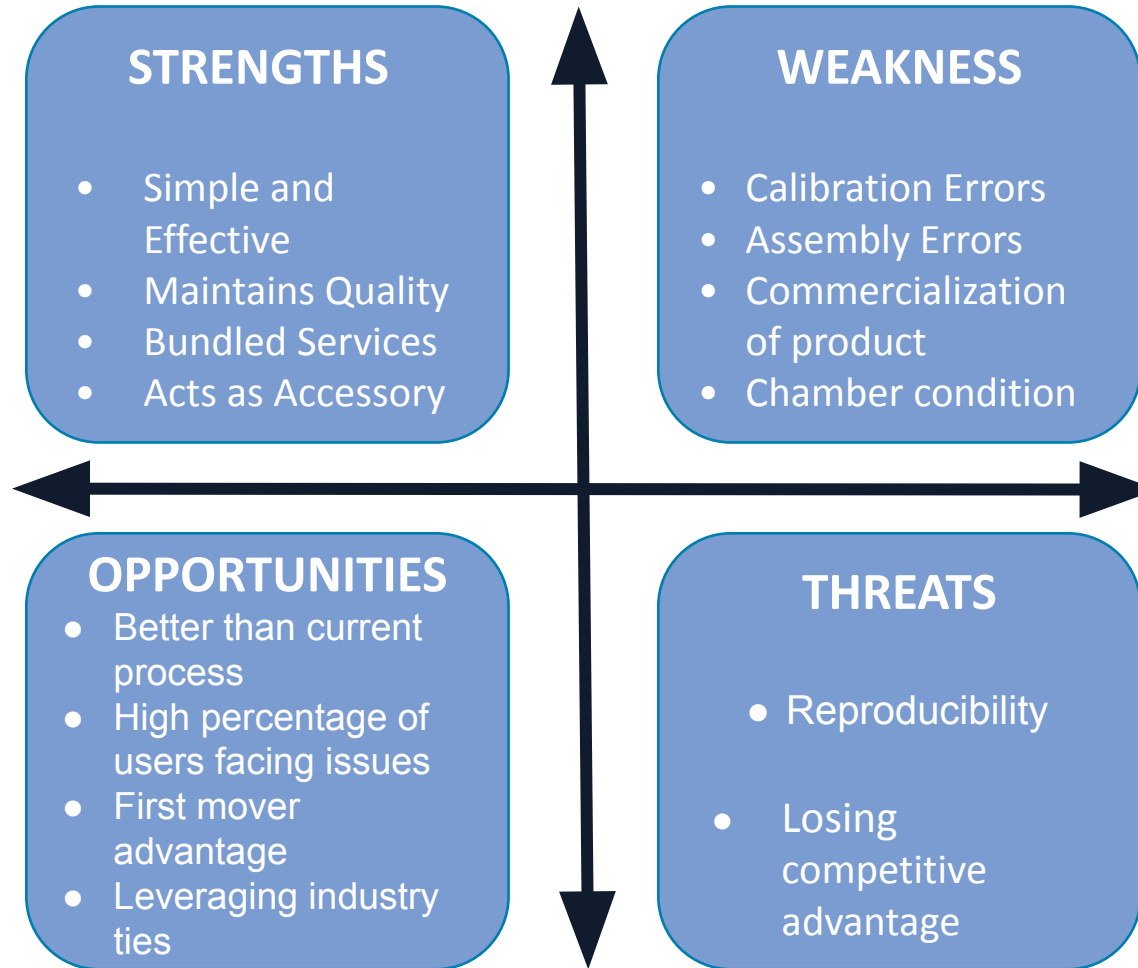


Market Size

Projected Conversions	2017	2018	2019	2020
Optimistic (25%)	54	162	292	447
Neutral (7.5%)	27	81	146	224
Pessimistic (2.5%)	9	27	49	75



SWOT Analysis

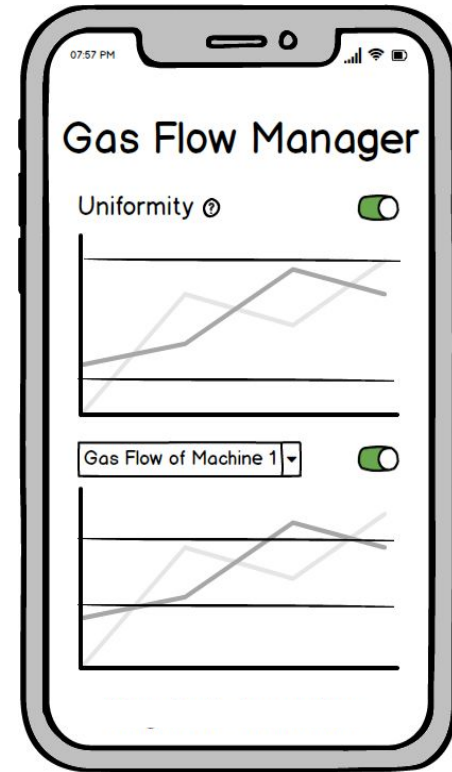
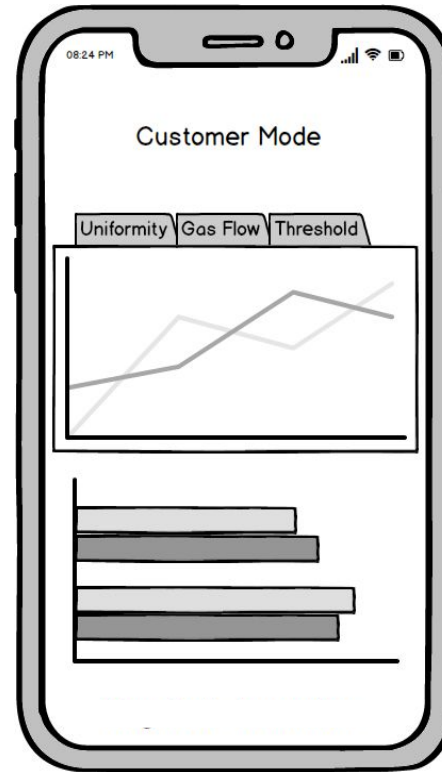
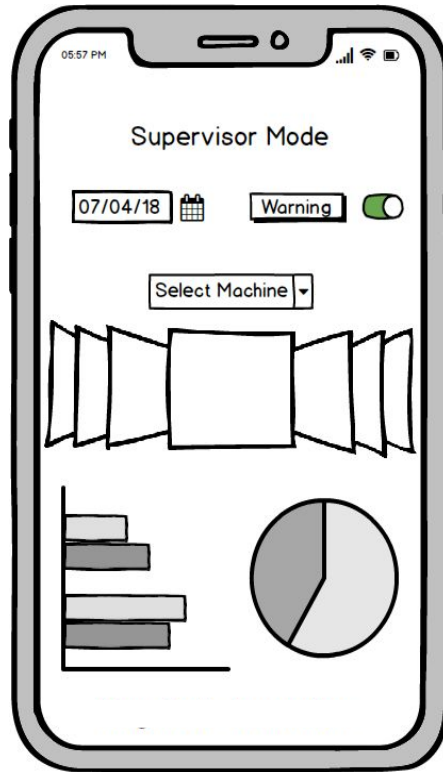
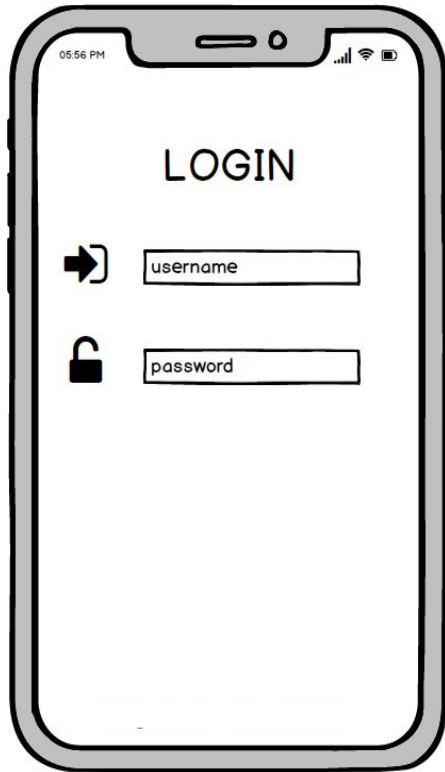


Technical Suggestions

- Modular design
- Simple yet unique design
- Active solution
- Smartphone App

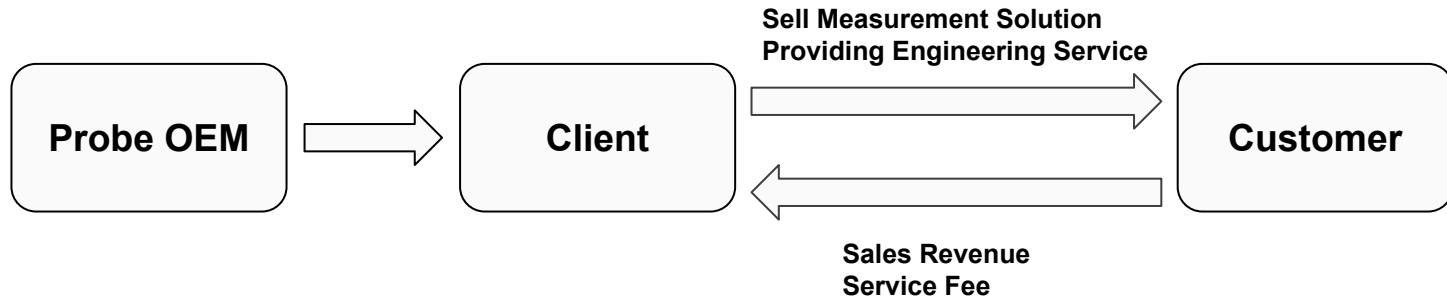


Value Added Services



Business Model

- **Direct business with the end-user customers**
 - Basic business model to sell the gas-flow solutions
 - Provide engineering services



Advantage	Risk
<ul style="list-style-type: none">● Easy to Setup or To start business	<ul style="list-style-type: none">● New business in the industry - No dominant design● Finding a customer without a sales network● Easy to imitate the solution

Business Model - Risk Mitigation

Risk Factors	Mitigation Strategy
New Solution in the industry	<ul style="list-style-type: none">● Find monetary value of customer benefit● Provide practical service to enhance quality
Lack of customer network	<ul style="list-style-type: none">● Find partner and utilize its network● Active collaboration for verifying the solution
IP Protection	<ul style="list-style-type: none">● Secure extensive patents not limited to the current idea● Update the solution with unique components



Revenue Models

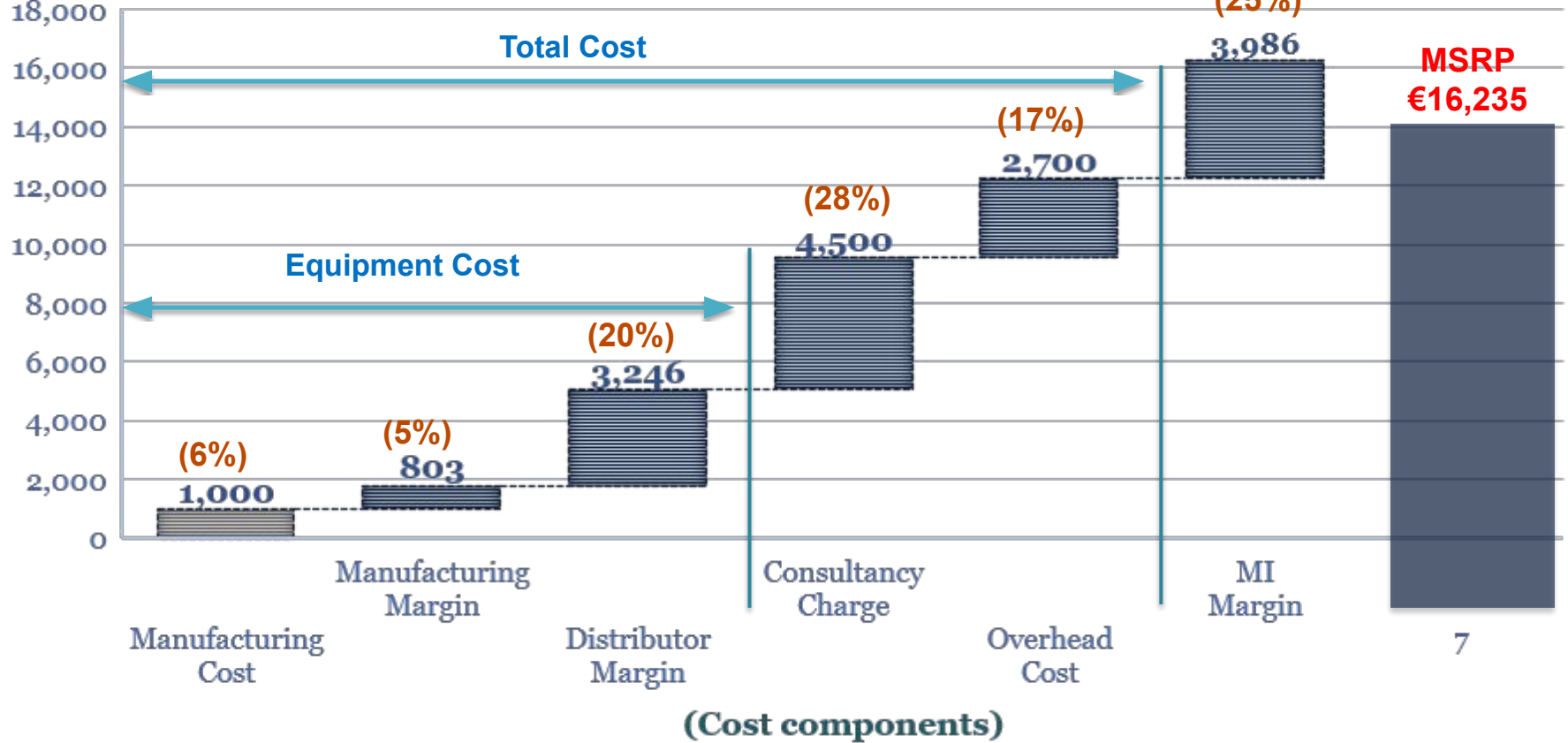
Model	Advantages	Disadvantages
Outright Sell Model	<ul style="list-style-type: none">• Basic model	<ul style="list-style-type: none">• Difficult to find hidden cost• Underestimates the real costs• overlook real value of product
Subscription Model	<ul style="list-style-type: none">• Recurring revenue model• Low initial cost burden for the customers	<ul style="list-style-type: none">• Low switching cost• Longer period to recover costs• Require high working capital
Freemium Model	<ul style="list-style-type: none">• Fast market penetration	<ul style="list-style-type: none">• Highest working capital• Requires time to generate revenue



Outright Sell Model

Cost-based Pricing : **€16,235**

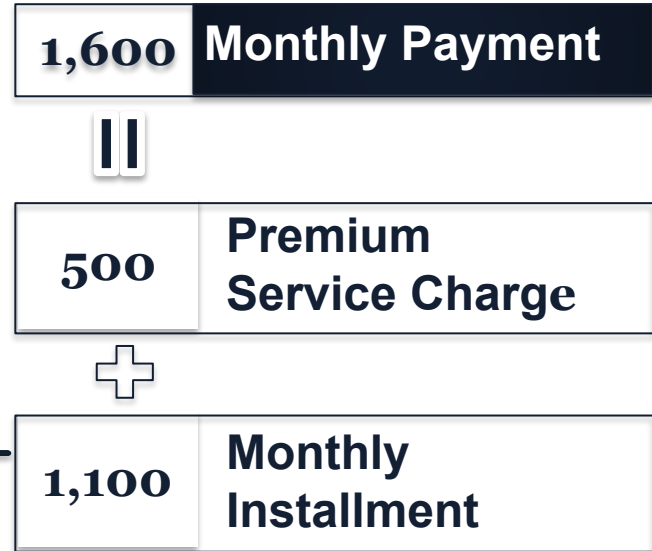
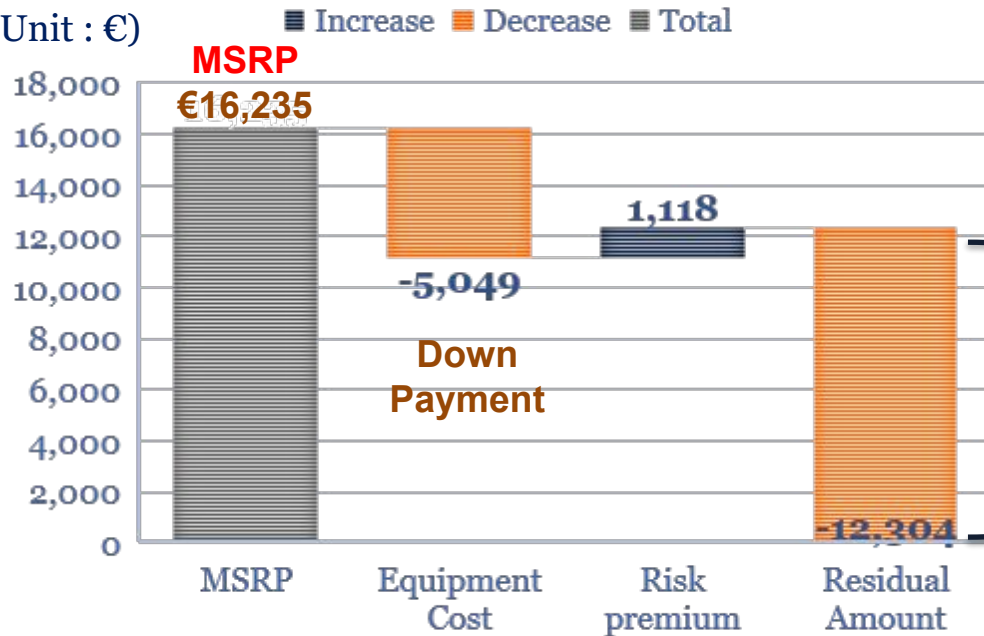
(Unit : €)



Subscription Model

Down payment € **5,049** + monthly payment € **1,600**

(Unit : €)

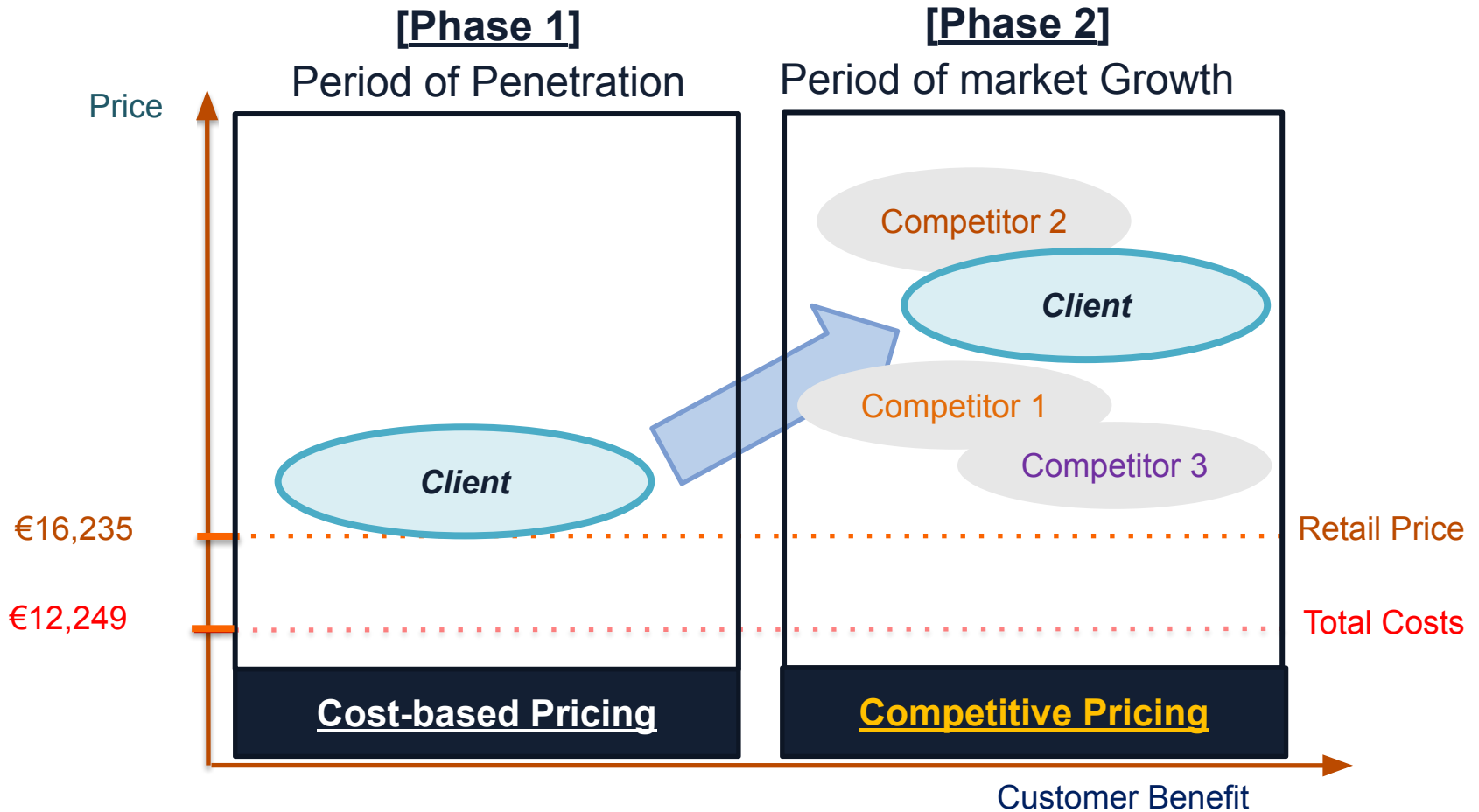


(*) Risk premium(10%) : Default risk + Abandonment risk

Total Realization for Client : € 24,249



Pricing Strategies



Channel Partner Incentive Structure

- Average retail and distributor margin

Product category	Distributor	Retailer
Fast moving consumer goods	3-10%	8-40%
Clothing and apparel	15-30%	20-50%
Electronics like mobile phones	3-7%	3-7%
Cars		5-15%
Furniture		30-50%
Jewelry		30-60%
Electrical equipment and lights	5-7%	15-25%

	Price point of the accessory	Commission for manufacturers	Commission for distributors
Average rate of Additive Manufacturing industry	€ 80000	3-5%	8-10%
Average rate of electronic industry		Starts at 5%; Avg between 7-15%	20% for resellers
Recommendation	€ 16235	5%	20%

Sources: <https://www.allianceexperts.com/en/knowledge/what-is-a-reasonable-margin-for-your-distributor/>



Recommendations

- **Go/No Go Decision**

Our recommendation is to Go ahead

- Realization of short-term goal (2018 – 2020)

Best Case Scenario	Worst Case Scenario
447 Clients	75 Clients

- Providing Bundled Services will help maximize profits
- Additionally, opting for subscription based revenue model guarantees recurring revenue generation.



Questions



Thank You!

