CLASS

"PHARMA INDUSTRY ANALYTICS"

(DAY 1)

César Pérez Aznar

Who am I?

Who are you?

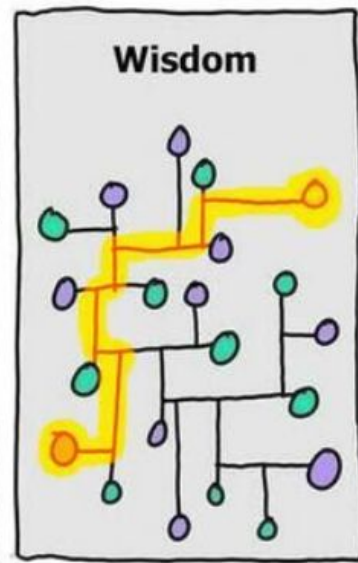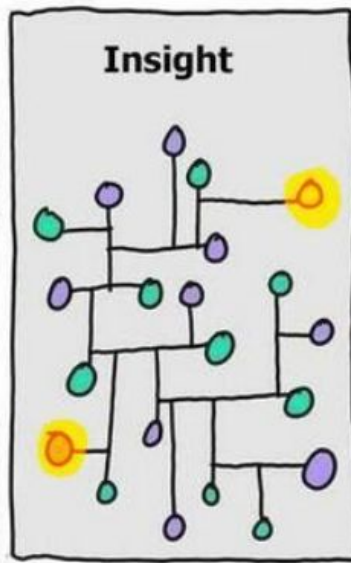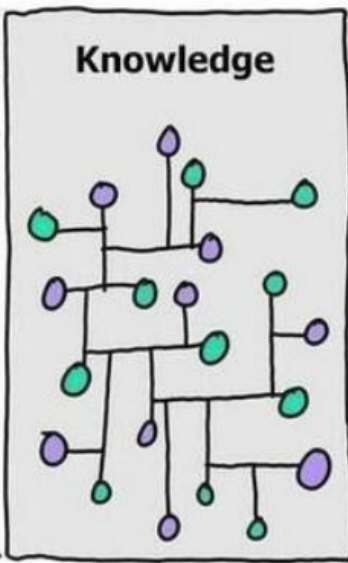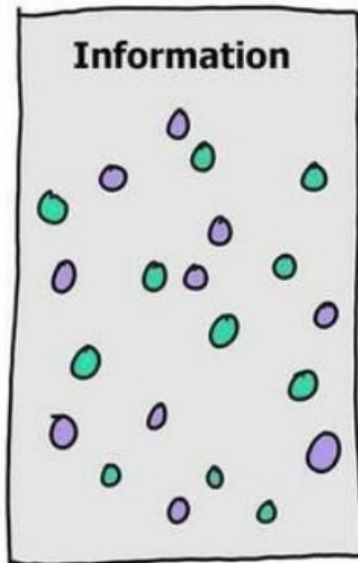**Data** | **Information** | **Knowledge** | **Insight** | **Wisdom**

What about in pharma industry?
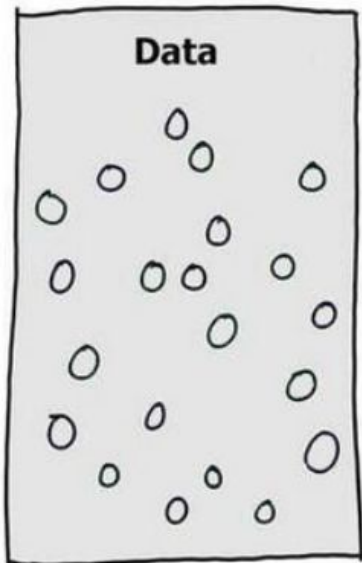
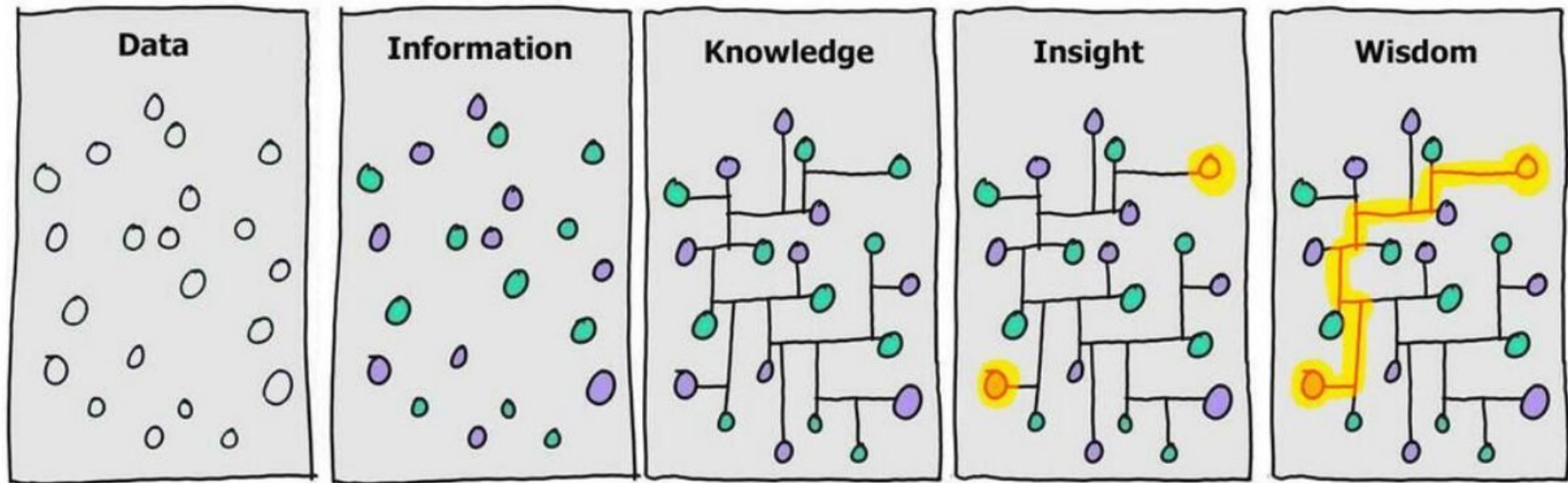**Data** | **Information** | **Knowledge** | **Insight** | **Wisdom**

XX Century

XXI '00s

XXI '20s

Beyond XXI '30s

Key Takeaways for today:

- Pharma industry "Pipeline" business model
- Drugs commercial launch steps
- Customer Lifetime Value analytical methodology
- Practical exercise preparation (Google Data Studio + DataSet)

Pharma industry pipeline business model

Pharma Industry business model

Collect medical
evidences and learning

Negotiate exclusivity calendar
with health authorities

Collect profits
for new I+D
sponsoring

Certify drug benefit

Start drug
commercialization

Find a therapeutical key
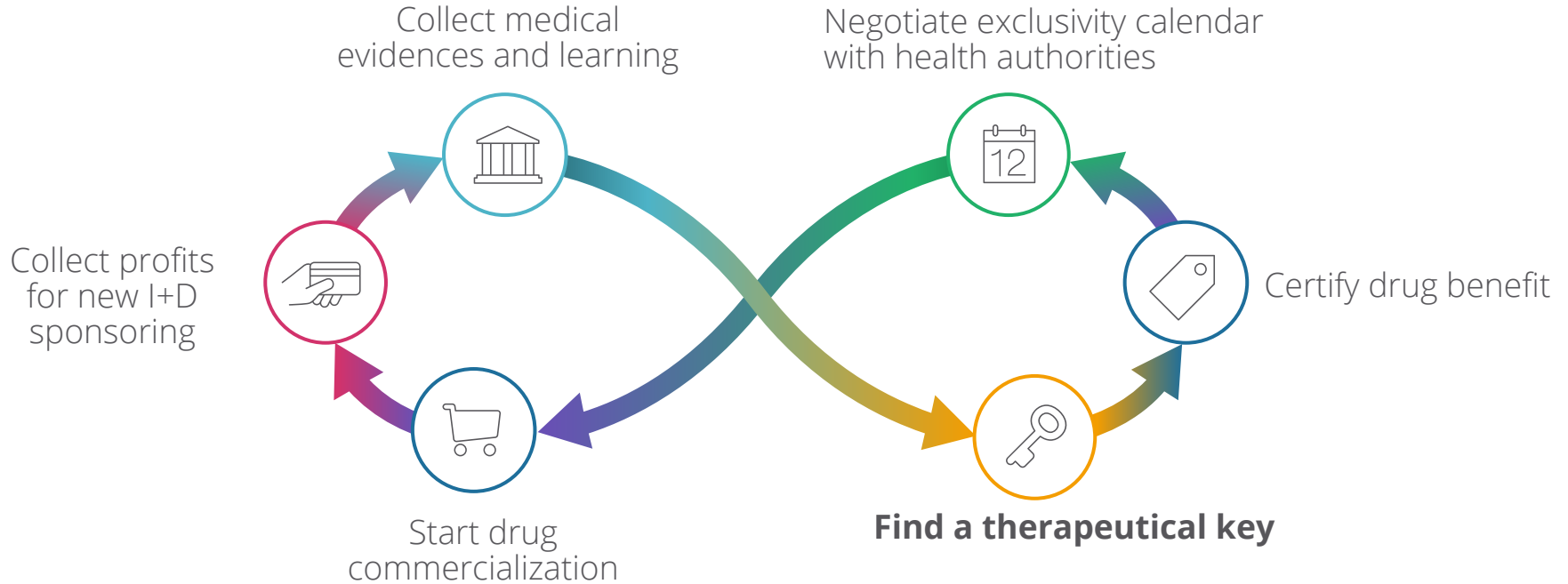
PROCESO DE I+D DE UN MEDICAMENTO

Desde que una compañía comienza a investigar en una molécula innovadora hasta su comercialización (hasta que el medicamento llega al mercado) transcurren entre 10 y 15 años.

	Descubrimiento + Preclínica	Fase I	Fase II	Fase III	Aprobación	
	50,2 meses	12,3	26,0	33,8	18,2	141 meses (≈12 años)
Meses	0 12 24 36 48	60	72 84	96 108 120	132	
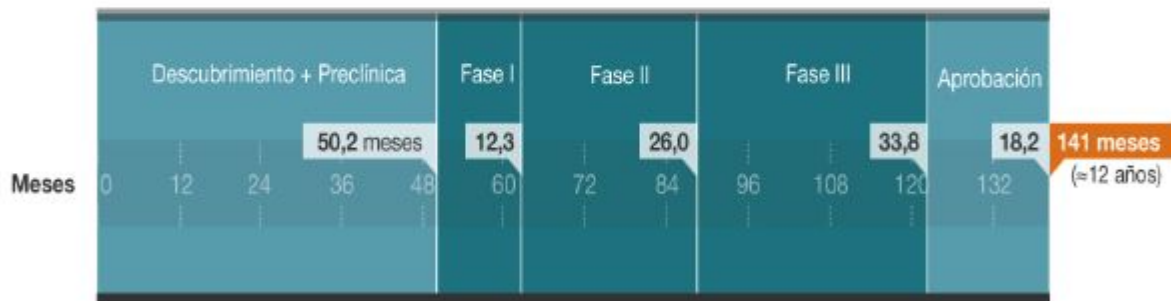
PROCESO DE INVESTIGACIÓN, DESARROLLO CLÍNICO Y APROBACIÓN

100.000   1000   100   10   1

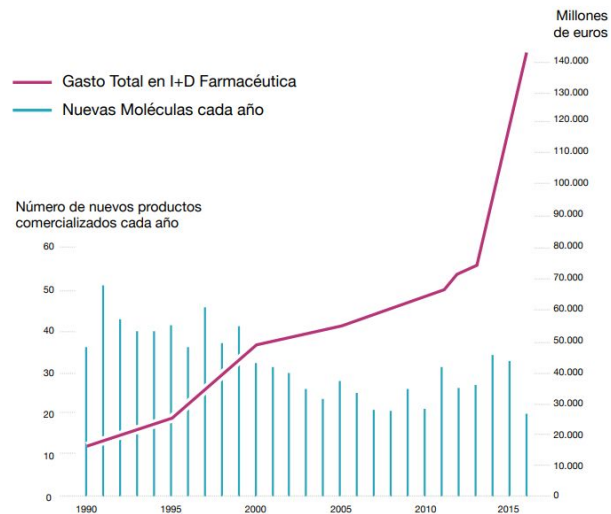# Economical challenges of pipeline business model

Resultados

En 2015, de más de 7.262 moléculas en desarrollo, sólo fueron autorizadas 44 nuevas medicinas, lo que refleja una tasa de éxito de alrededor del 0,6% en todos los procesos de I+D que emprende la industria farmacéutica.

7.262
moléculas en desarrollo

44
nuevas medicinas

1
de 5

○ ○ ○ ○ ●

Sólo 1 de cada 5 medicamentos comercializados generan ingresos que superan los costes medios de I+D.

Millones de euros

── Gasto Total en I+D Farmacéutica

── Nuevas Moléculas cada año

Número de nuevos productos comercializados cada año

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- **Pharma industry "Pipeline" business model**
- Drugs commercial launch steps
- Customer Lifetime Value analytical methodology
- Practical exercise preparation (Google Data Studio + DataSet)

Drugs commercial launch steps

Let's play a game

SUB-MARKET STUDIES

REWARDS & RECOGNITION

SALES FORECAST

SALES EFFICIENCY FOLLOW-UP

PROMOTIONAL INVESTMENT (A/B/ON/OFF)

TERRITORY TARGETS

SALES TEAM SOURCING

INCENTIVES PLAN

SALES TEAM TRAINING
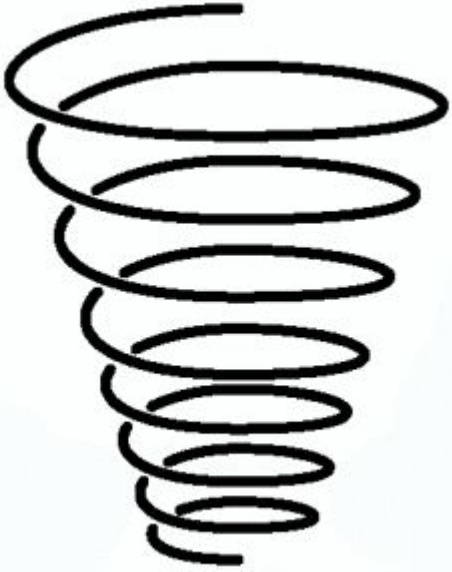
CUSTOMER UNIVERSE
-    CUSTOMER TARGET
    -    CUSTOMER SEGMENTS

COUNTRY MARKET RESEARCH

1 COUNTRY MARKET RESEARCH

What is a Market Research?

MARKET RESEARCH

≠

MARKET STUDY

Primary vs. Secondary

	Primary Research	Secondary Research
Original Data was Collected...	By YOU (or a company you hire)	By SOMEONE ELSE
Examples	Surveys Focus Groups Interviews Observation Experiments	N/A...the act of looking for existing data IS secondary research.
Qualitative or Quantitative?	Can be either	Can be either
Key Benefits	Specific to your needs & you control the quality	Usually cheap and quick
Key Disadvantages	Usually costs more and takes longer	Data can be too old and/or not specific enough for your needs

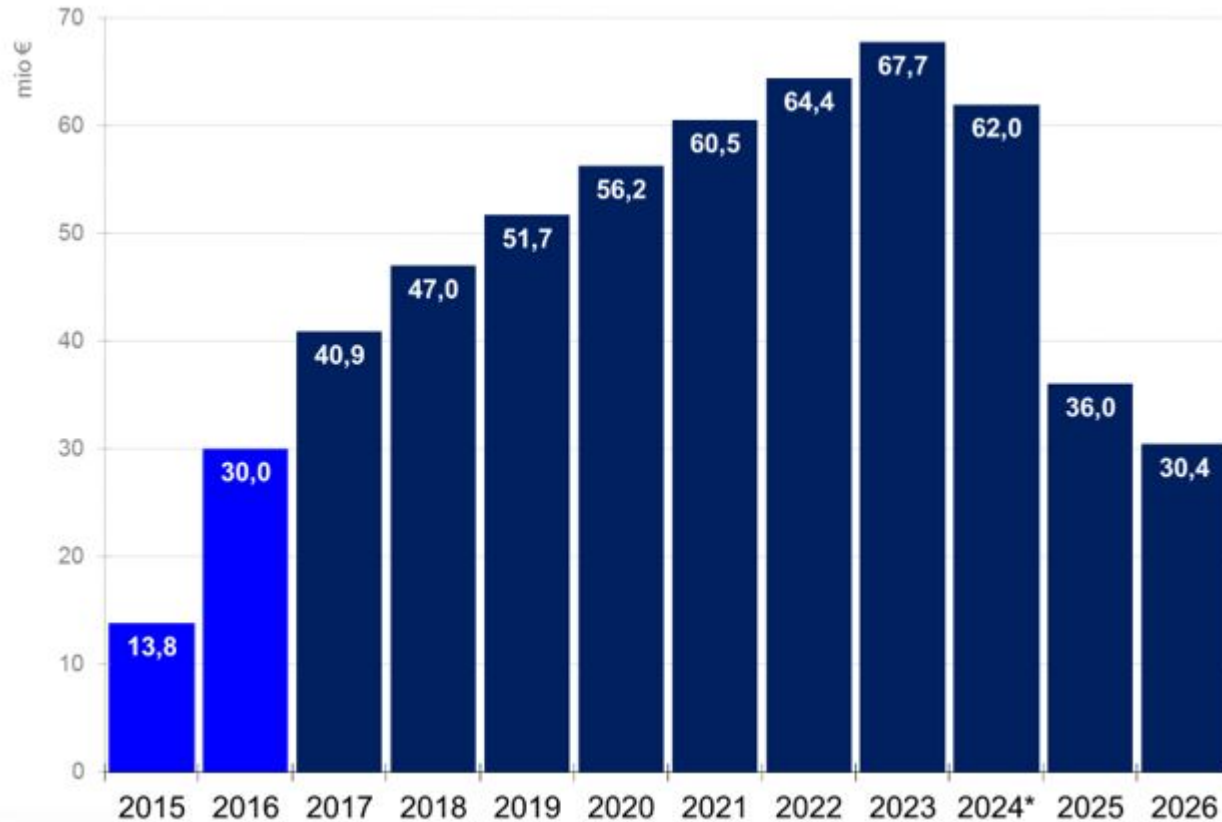**1** COUNTRY MARKET RESEARCH

2 SUB-MARKET STUDIES SALES FORECAST

Sub-Market Studies

Awareness
- Awareness, Attitudes and Usage Research
- Public Relations Research
- Advertising Research

Targeting
- Market Segmentation
- Positioning/Branding Research
- Industry & Competitive Analysis

Qualitative & Quantitative

Qualitative & Quantitative

Retention
- Customer Satisfaction & Loyalty Research
- Customer Communication Testing
- Usability Testing
- Customer Experience / Shopper Insights

Acquisition
- Concept Testing
- Product Optimization
- Pricing Research
- Advertising Research
- Usability Testing

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Sales Forecast

Let's play a game

1	**COUNTRY MARKET RESEARCH**

2	**SUB-MARKETS STUDIES**	**SALES FORECAST**

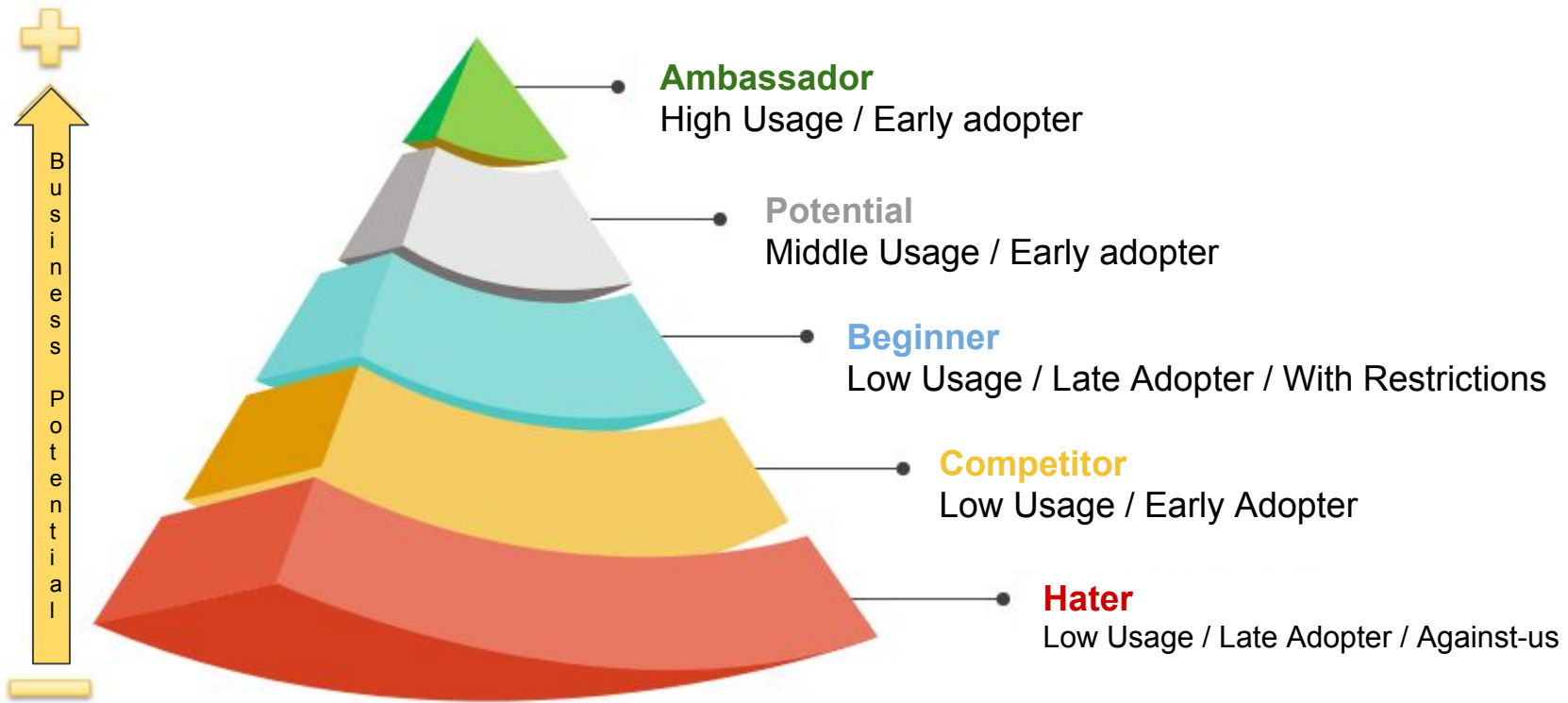|		
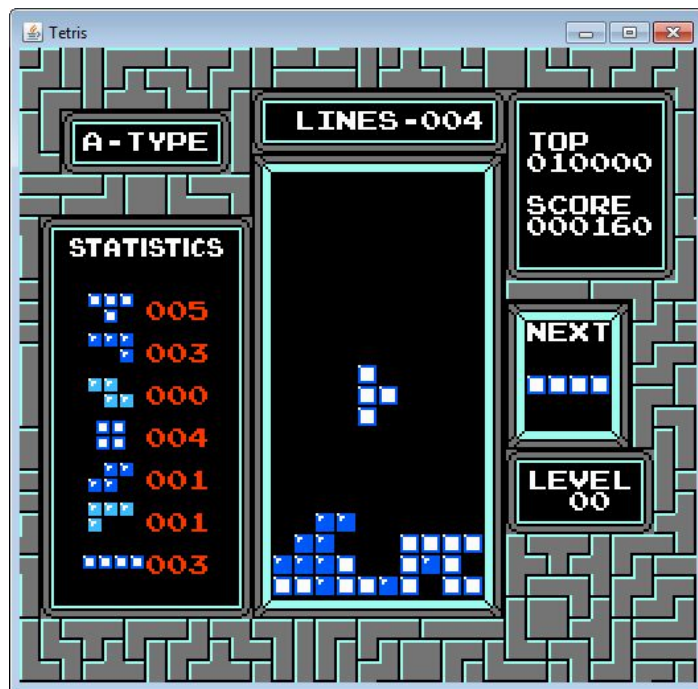
3	**CUSTOMER UNIVERSE**
	   - **CUSTOMER TARGET**
	        - **CUSTOMER SEGMENTS**
		PROMOTIONAL INVESTMENT
		   - **ATL/BTL**
		   - **ON/OFF**

Customer Universe, Target, Segment

Customer Universe → Anyone being part of consumption journey

Customer Target → Anyone making a choice of my product among others

Customer Segment → Levels of affinity different groups of customer declare

Customer Universe, Target, Segment

Business Potential

Ambassador
High Usage / Early adopter

Potential
Middle Usage / Early adopter

Beginner
Low Usage / Late Adopter / With Restrictions

Competitor
Low Usage / Early Adopter

Hater
Low Usage / Late Adopter / Against-us

1   **COUNTRY MARKET RESEARCH**

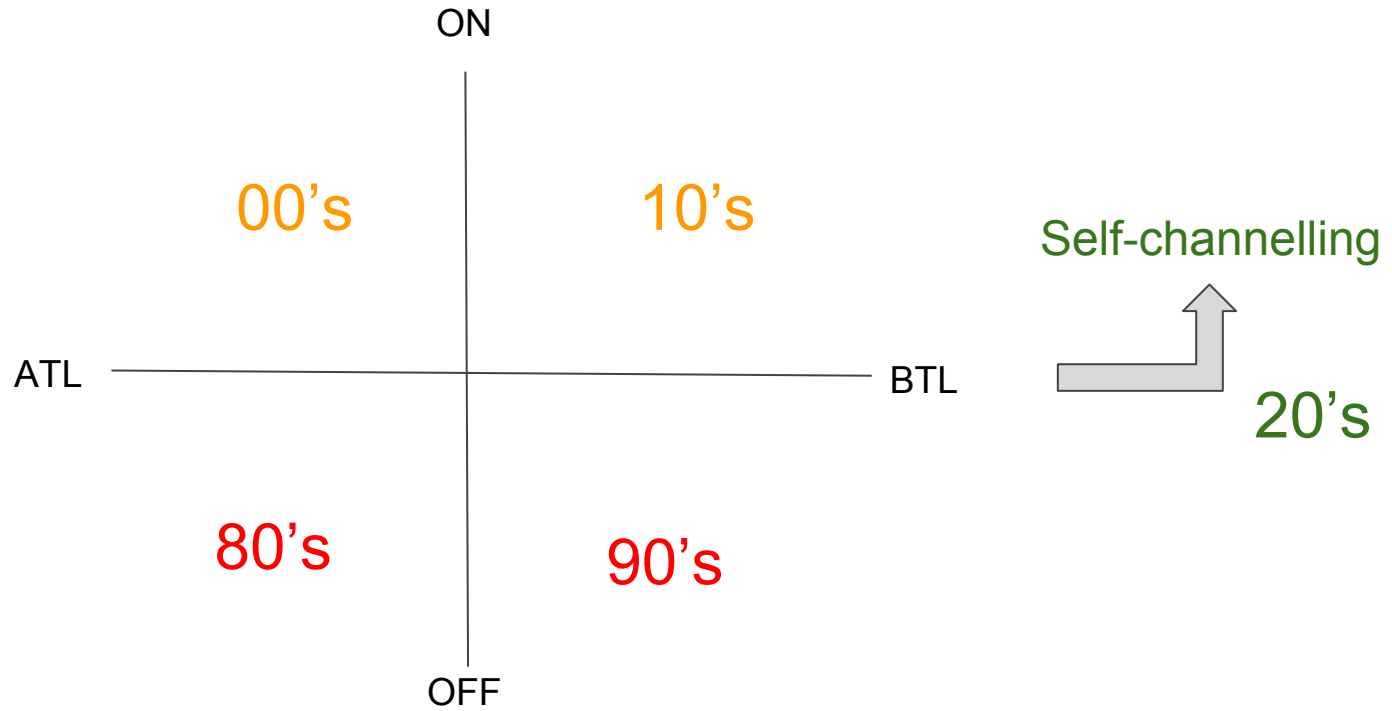**2**   **SUB-MARKETS STUDIES**   **SALES FORECAST**

3   **CUSTOMER UNIVERSE**
CUSTOMER TARGET
CUSTOMER SEGMENTS

PROMOTIONAL INVESTMENT
- ATL/BTL
- ON/OFF

Promotional Investment ("Show me the money!")

ON

00's   10's

Self-channelling

ATL —————————————— BTL

20's

80's   90's

OFF

5M€ → 50Reps → 5.000 Psy → 50.000.000€ → 500.000.000M€

1 COUNTRY MARKET RESEARCH

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SALES FORECAST

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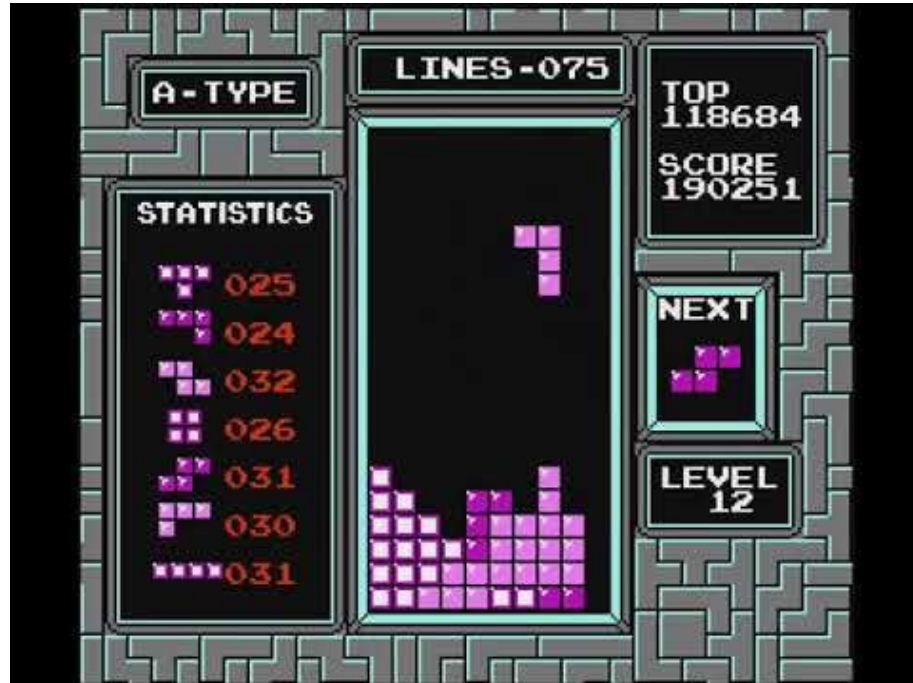
PROMOTIONAL INVESTMENT
- ATL/BTL
- ON/OFF

4 TERRITORY TARGETS

Territory Targets

ALLIANCE	UNITS	SALES	HOSP #		UNITS (H+R)	SALES	
1H	91.259	23.038.335	12283	OPSA TGT 1H	45.630	11.519.167	49,0%
2H	94.925	23.963.816	31325	OPSA TGT 2H	47.463	11.981.908	51,0%
	186.184	47.002.151	43.608	OPSA TOTAL	93.092	23.501.075	

HR CODE	EMPLOYEE NAME	OPSA TEAM	N5A1 DDD UP	N5A1 ORAL TAM 201711	N5A1 ORAL W%	ALAI TAM 201711	ALAI W%	AM TAM 201711	VH DOTS	AM W%	DOT/DDD W%	AM MS% ALAI	2017H1 ACTUAL	2017H2 ACTUAL*	HoH Growth%	TARGET 2018 1H	2H	2018H1 Growth %	2018H2 Growth %
ABI001	Manolo Graván	SOUTH (CAD)	0%	3.148.611 ##	2,02%	539.250 #	1,42%	129.690	4.260	0,87%	4,31%	24,84%	2.151	2.386	11%	1.965	2.044	-9%	-14%
ABI002	Victor Valladares	SOUTH (MAL, MEL)	0%	3.107.759 ##	1,99%	472.524 #	1,25%	101.670	600	0,66%	3,90%	21,64%	1.563	1.951	25%	1.779	1.850	14%	-5%
ABI003	Carlos Ruiz	SOUTH (MUR)	0%	2.776.447 ##	1,78%	792.232 #	2,09%	97.320	2.820	0,65%	4,52%	12,64%	1.504	1.936	29%	2.061	2.143	37%	11%
ABI004	Rosa Martinez	SOUTH (MUR)	0%	3.000.524 ##	1,92%	822.714 #	2,17%	127.470	4.590	0,86%	4,95%	16,05%	2.115	2.340	11%	2.257	2.348	7%	0%
ABI005	José Carlos Jimenez	SOUTH (ALI)	15%	2.647.956 ##	1,69%	19.608 #	1,26%	4.080	110.400	0,74%	3,69%	24,03%	1.919	1.958	2%	1.685	1.753	-12%	-10%
ABI006	Juan Gallego	SOUTH (ALI)	15%	2.686.705 ##	1,72%	14.244 #	1,26%	2.100	115.890	0,76%	3,74%	24,70%	1.842	1.997	8%	1.708	1.777	-7%	-11%
ABI010	Jesús Castro Sánchez	SOUTH (ALM, GRA)	0%	2.661.586 ##	1,70%	319.396 #	0,84%	61.110	6.810	0,44%	2,99%	21,27%	1.146	1.127	-2%	1.363	1.417	19%	26%
ABI011	Miguel Angel Lira	SOUTH(ALB, CR)	0%	2.577.301 ##	1,65%	388.272 #	1,02%	45.660	5.310	0,33%	3,00%	13,13%	779	976	25%	1.371	1.426	76%	46%
ABI067	Segundo Ruiz	SOUTH(MAL, CAD, CEU)	0%	3.552.745 ##	2,27%	519.422 #	1,37%	116.730	14.160	0,85%	4,49%	25,20%	2.159	2.295	6%	2.050	2.132	-5%	-7%
ABI069	Hernán Artale	SOUTH(ALI, MUR, ALM)	0%	2.791.621 ##	1,79%	351.612 #	0,93%	44.520	11.520	0,36%	3,08%	15,94%	906	938	4%	1.404	1.461	55%	56%
ABI014	Albert Queralt	NORTH (BCN)	0%	2.401.970 ##	1,54%	251.350 #	0,66%	48.870	14.220	0,41%	2,61%	25,10%	1.010	1.119	11%	1.191	1.238	18%	11%
ABI015	Isabel Ortega	NORTH (BCN)	0%	3.242.741 ##	2,08%	334.980 #	0,88%	42.570	5.130	0,31%	3,27%	14,24%	737	862	17%	1.491	1.551	102%	80%
ABI016	Lara Magrià	NORTH (BCN)	0%	2.733.119 ##	1,75%	352.498 #	0,93%	52.680	1.530	0,35%	3,03%	15,38%	874	995	14%	1.383	1.438	58%	45%
ABI017	Giuseppe Sammali	NORTH (GIR)	0%	2.903.432 ##	1,86%	362.658 #	0,96%	60.780	3.120	0,41%	3,23%	17,62%	1.041	1.098	5%	1.473	1.533	42%	40%
ABI020	Marta Barrios	NORTH (BUR, LR, SOR)	0%	2.308.742 ##	1,48%	478.264 #	1,26%	107.250	9.390	0,76%	3,50%	24,39%	1.877	2.067	10%	1.595	1.659	-15%	-20%
ABI021	Miguel Angel Alegre	NORTH (BAL)	0%	2.276.926 ##	1,46%	653.318 #	1,72%	82.080	8.850	0,59%	3,77%	13,92%	1.396	1.719	23%	1.720	1.789	23%	4%
ABI023	Vacante BCN	NORTH (BCN, TAR)	0%	2.961.944 ##	1,90%	513.600 #	1,36%	79.080	9.750	0,58%	3,83%	17,30%	1.446	1.540	7%	1.746	1.816	21%	18%
ABI065	Jose Manuel Villalaín	NORTH (PAL, VAD)	0%	1.803.928 ##	1,15%	386.790 #	1,02%	66.390	3.030	0,45%	2,62%	17,95%	1.087	1.265	16%	1.198	1.246	10%	-2%

Let's play a game

1 COUNTRY MARKET RESEARCH

2 SUB-MARKETS STUDIES

SALES FORECAST

3 CUSTOMER UNIVERSE
- CUSTOMER TARGET
  - CUSTOMER SEGMENTS

PROMOTIONAL INVESTMENT
- ATL/BTL
- ON/OFF

4 TERRITORY TARGETS

5 INCENTIVES PLAN

Incentives Plan

1 COUNTRY MARKET RESEARCH

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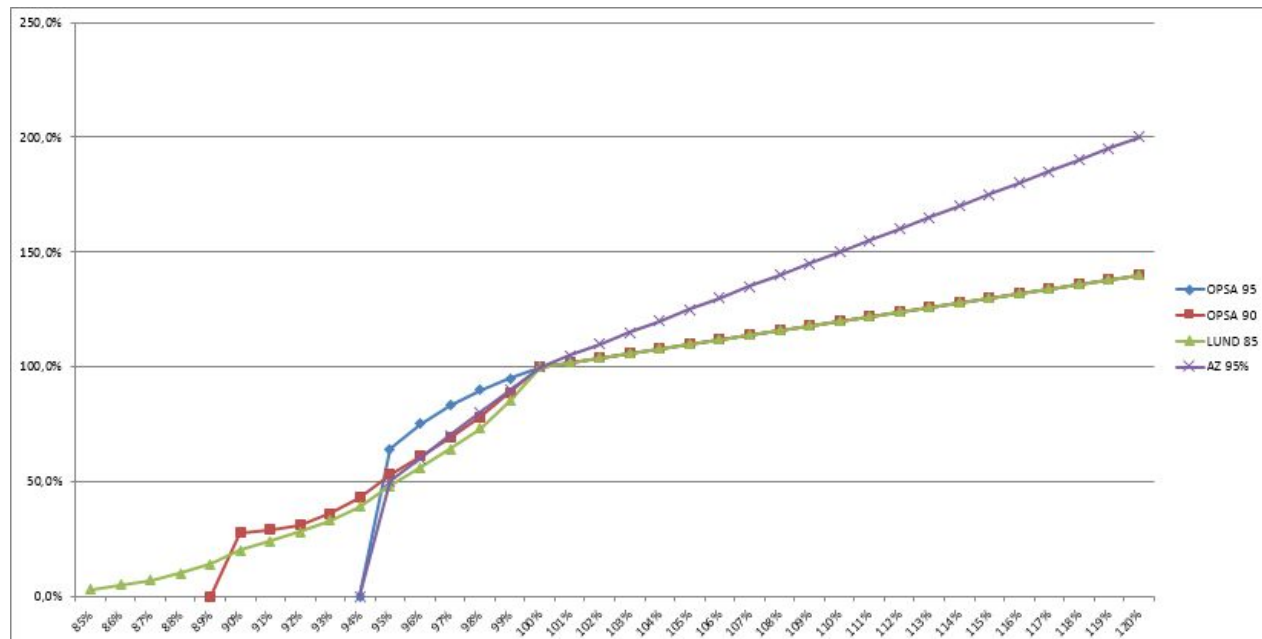
5 INCENTIVES PLAN

6 SALES TEAM SOURCING
- SALES REPS
- AREA MANAGERS
- SALES DIRECTOR

SALES TEAM TRAINING
- PRODUCTS
- SKILLS
- TOOLS

1 COUNTRY MARKET RESEARCH

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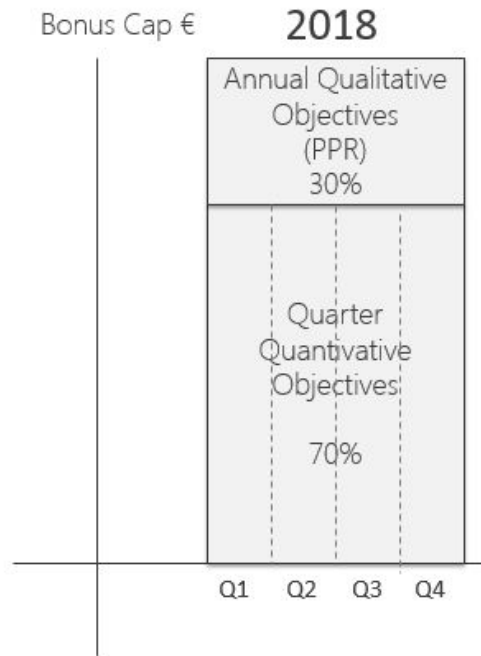 - CUSTOMER SEGMENTS

PROMOTIONAL INVESTMENT
- ATL/BTL
- ON/OFF

4 TERRITORY TARGETS

5 INCENTIVES PLAN

6 SALES TEAM SOURCING
- SALES REPS
- AREA MANAGERS
- SALES DIRECTOR

SALES TEAM TRAINING
- PRODUCTS
- SKILLS
- TOOLS

7 SALES EFFICIENCY FOLLOW-UP

REWARDS & RECOGNITION

1 COUNTRY MARKET RESEARCH

2 SUB-MARKETS STUDIES

SALES FORECAST

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PROMOTIONAL INVESTMENT
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4 TERRITORY TARGETS

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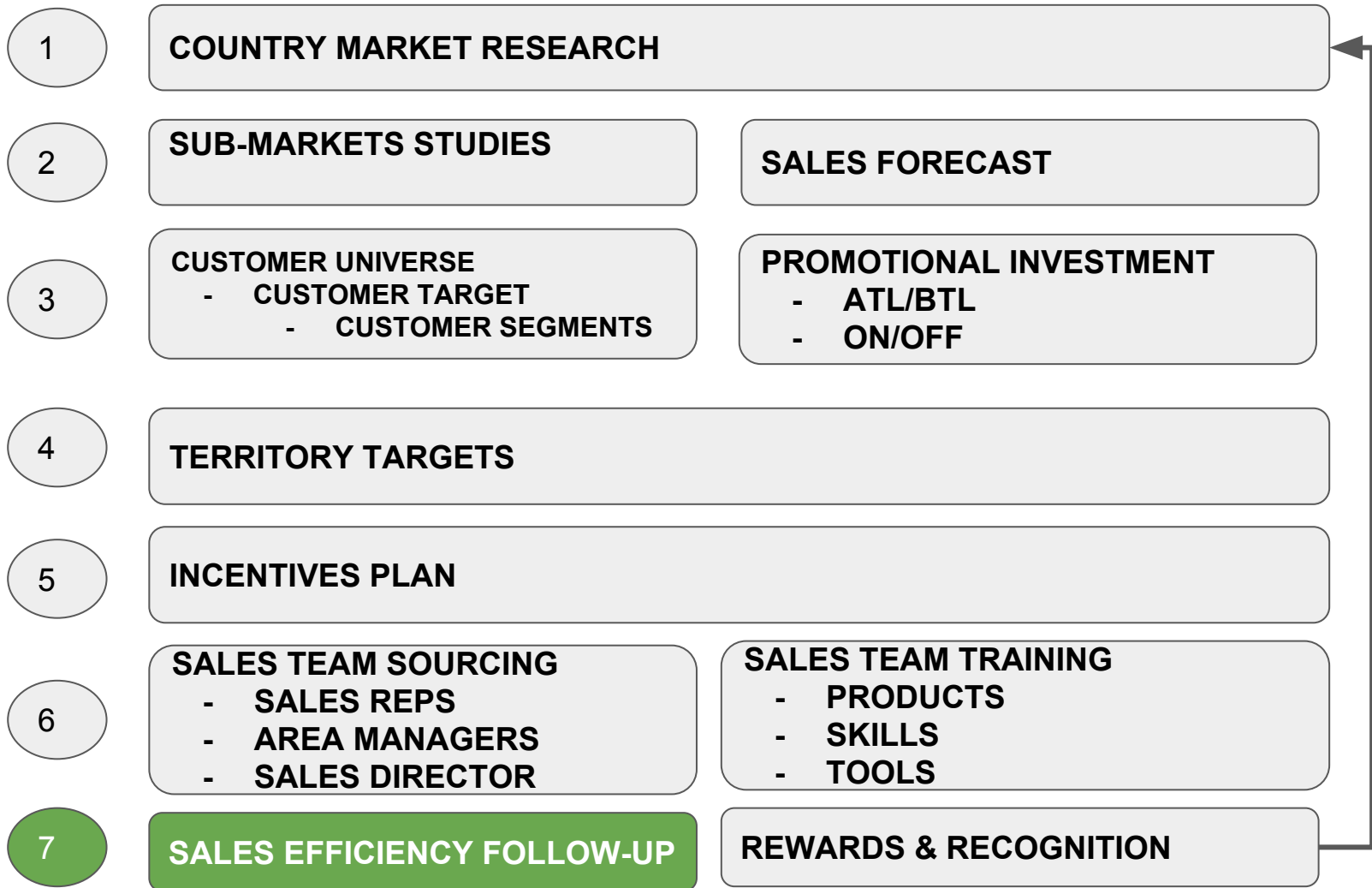**6** SALES TEAM SOURCING
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SALES TEAM TRAINING
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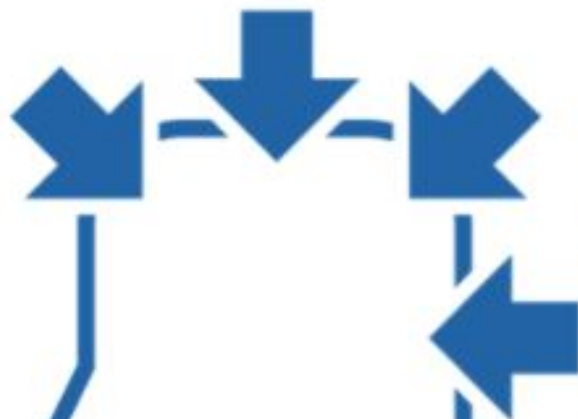
7 SALES EFFICIENCY FOLLOW-UP

REWARDS & RECOGNITION

Because of the interest and enjoyment in the task itself

- Enjoyment
- Purpose
- Growth
- Curiosity
- Passion
- Self-expression
- Fun

Intrinsic

Extrinsic

Because of the outcome that will result by doing the task

- Promotions
- Pay raises
- Bonuses
- Benefits
- Prizes
- Winning
- Perks

Key Takeaways for today:

- **Pharma industry "Pipeline" business model**
- **Drugs commercial launch steps**
- Customer Lifetime Value analytical methodology
- Practical exercise preparation (Google Data Studio + DataSet)

HOW MUCH ELSE WILL I....

SPEND

Raw Leads
Viable Leads
Nurtured Leads
Active Leads
Marketing Qualified Leads
Sales Accepted Leads
Opportunities
Closed / Won

Marketing Automation

CRM

GAIN
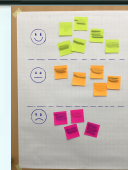
... IF I TRY TO DEVELOP MORE MY CUSTOMER?

CUSTOMER LIFETIME VALUE ANALYTICAL METHODOLOGY

Total Costs (FC)

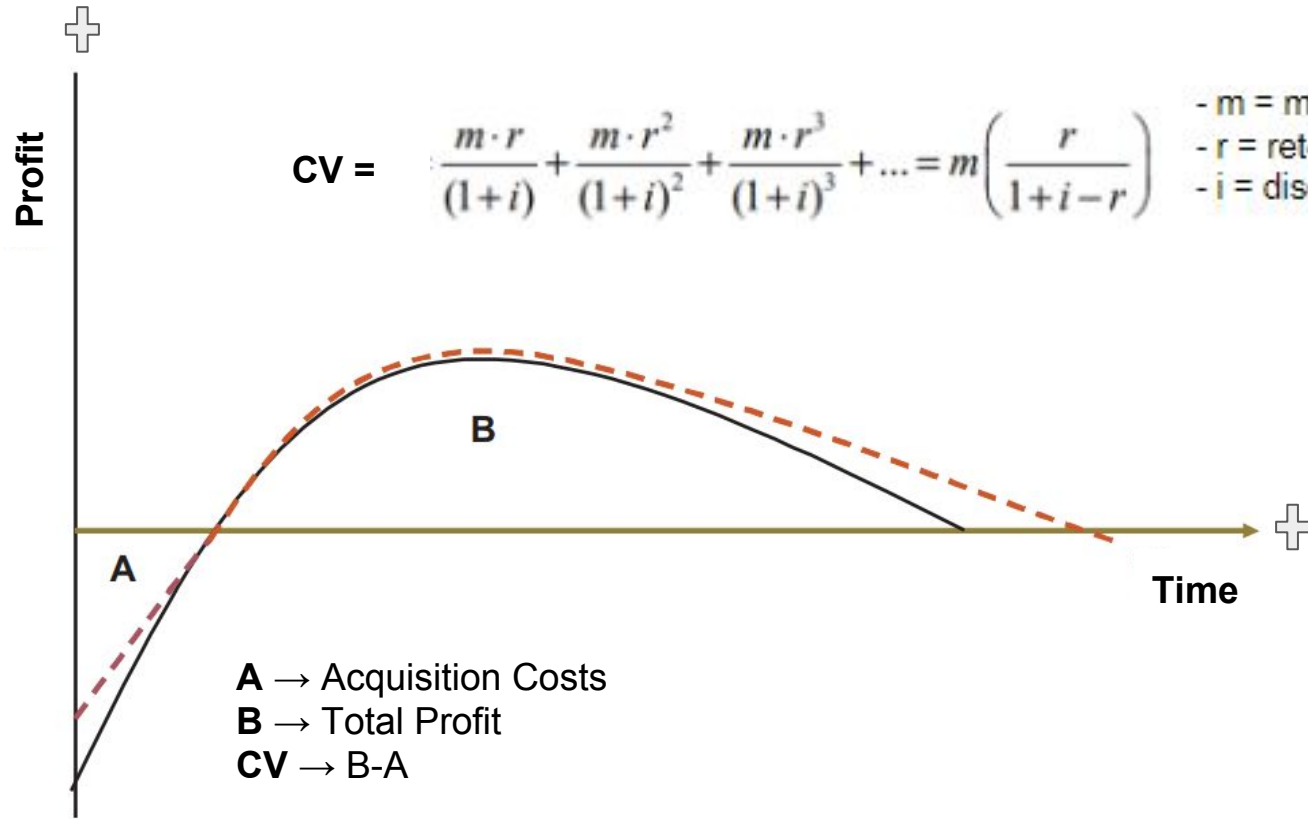Variable Costs (FC)

Euros

Fixed Costs (FC)
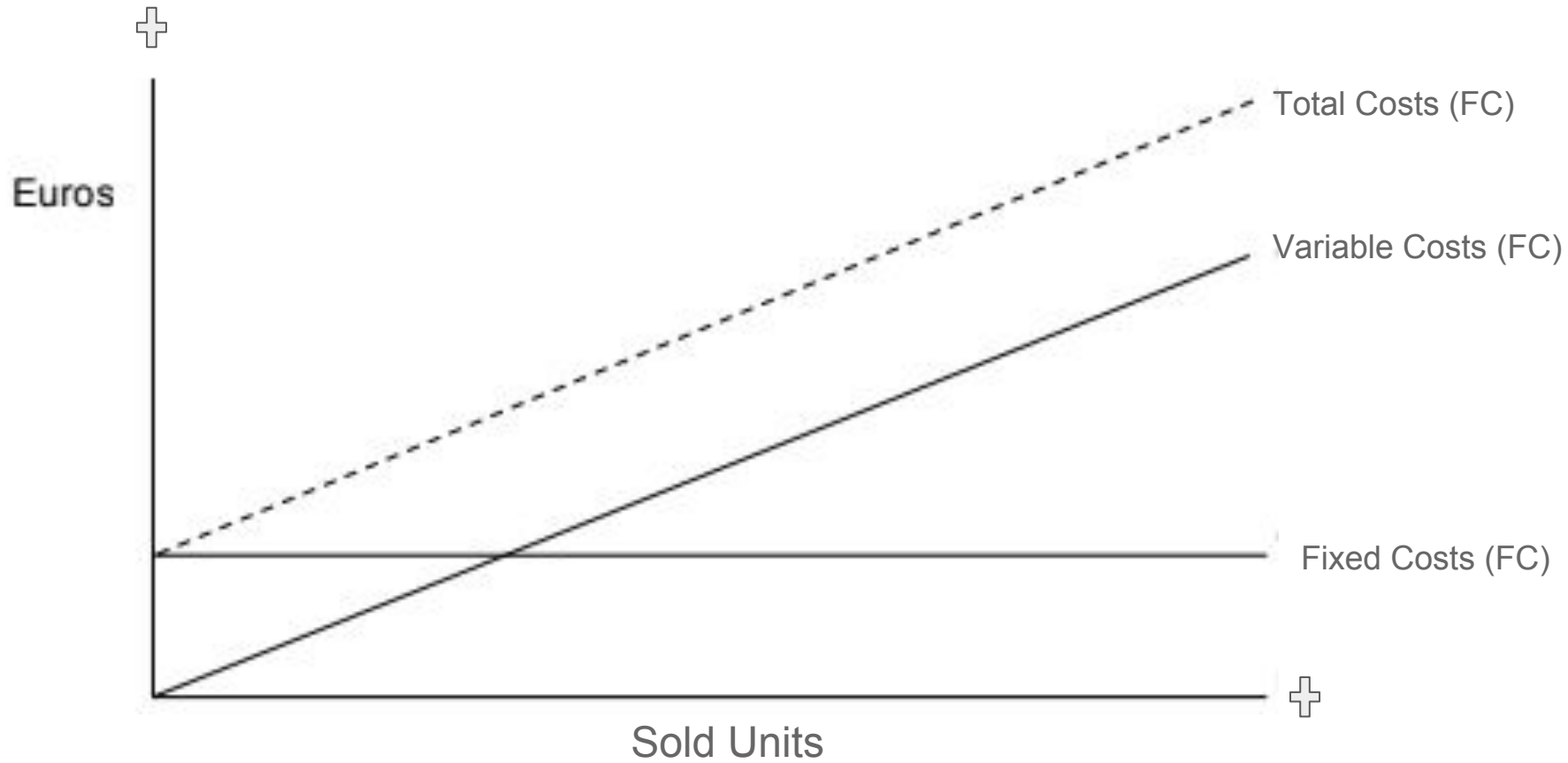
Sold Units

Total Costs = (Sold Units x VC) + FC

Unit Contribution Margin = Unit Price - Unit VC

Break-even = FC / UCM
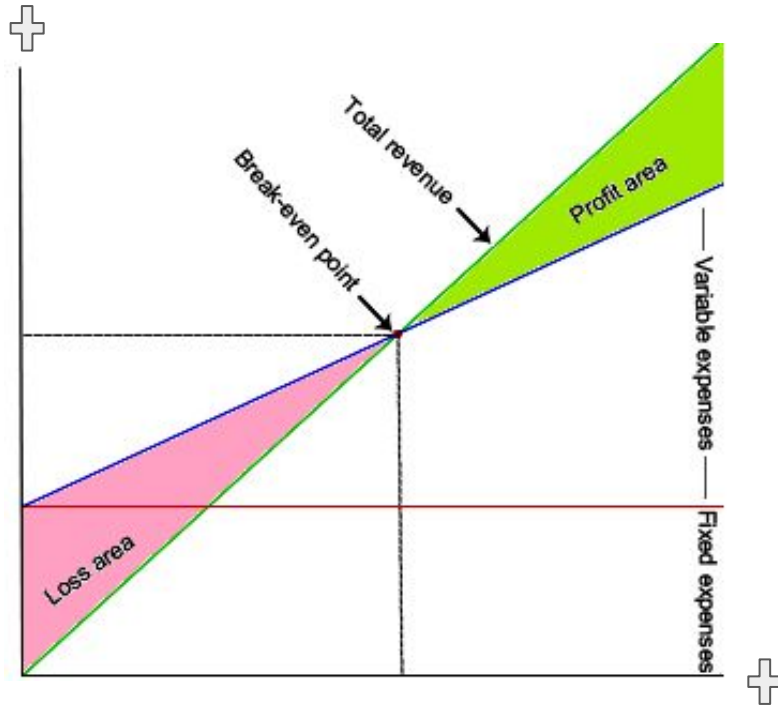
¿What is customer value for you?

$$CV = \frac{m \cdot r}{(1+i)} + \frac{m \cdot r^2}{(1+i)^2} + \frac{m \cdot r^3}{(1+i)^3} + ... = m\left(\frac{r}{1+i-r}\right)$$

- m = margin
- r = retention ratio
- i = discount tax

A → Acquisition Costs
B → Total Profit
CV → B-A

⇧CLV
(Customer Lifecycle Value)

Improving Customer Acquisition Costs
- Acquire less customers with better potential
- Maximize customers acquisition only if expected value is higher than AC
- Acquire similar customers than in the past but with lower AC

Improving already acquired customers expected value
- Acquire less customers with better potential
- Maximize customers acquisition only if expected value is higher than AC
- Acquire similar customers than in the past but with lower AC
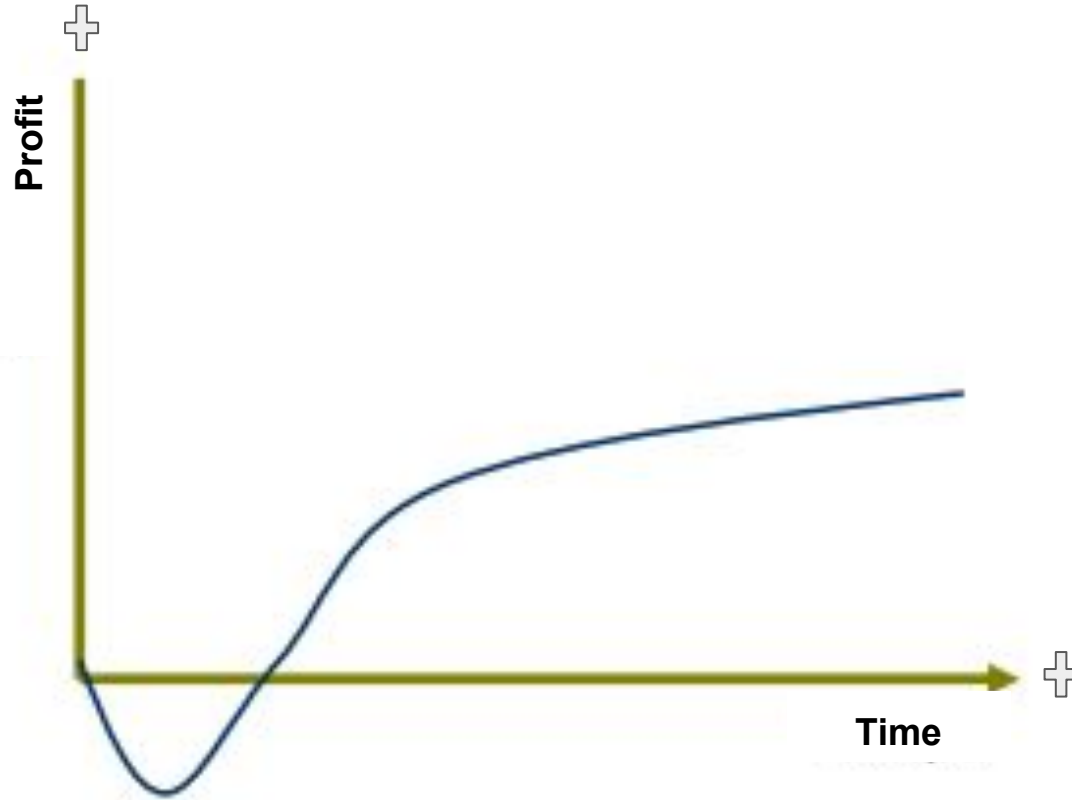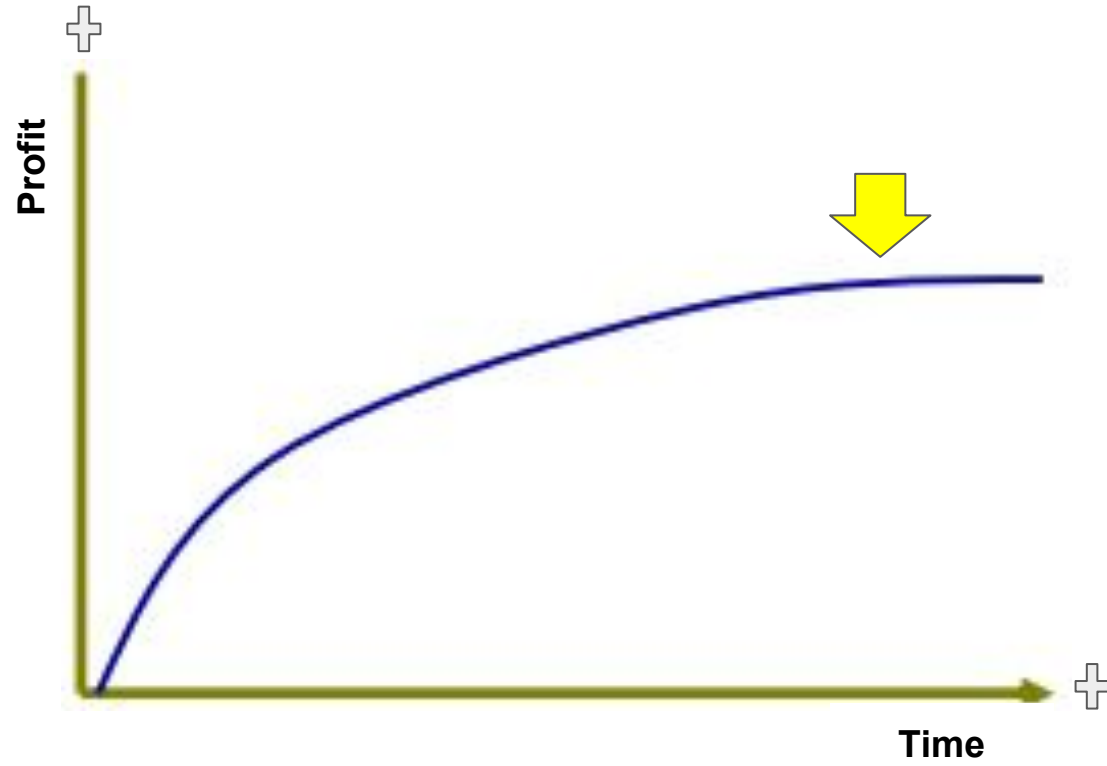
`=B2+(SUM(O2,AY2,BK2)*(('KEY VARIABLES'!C$16^'KEY VARIABLES'!C$18))/((1+'KEY VARIABLES'!C$17)^'KEY VARIABLES'!C$18))`

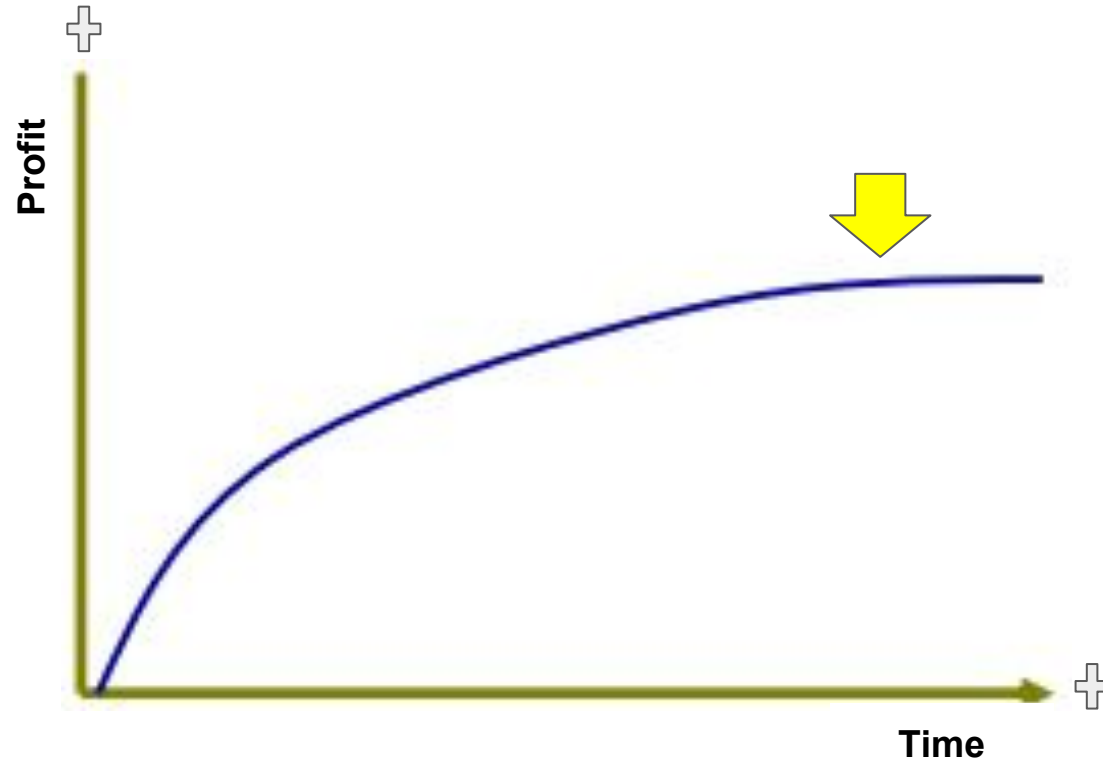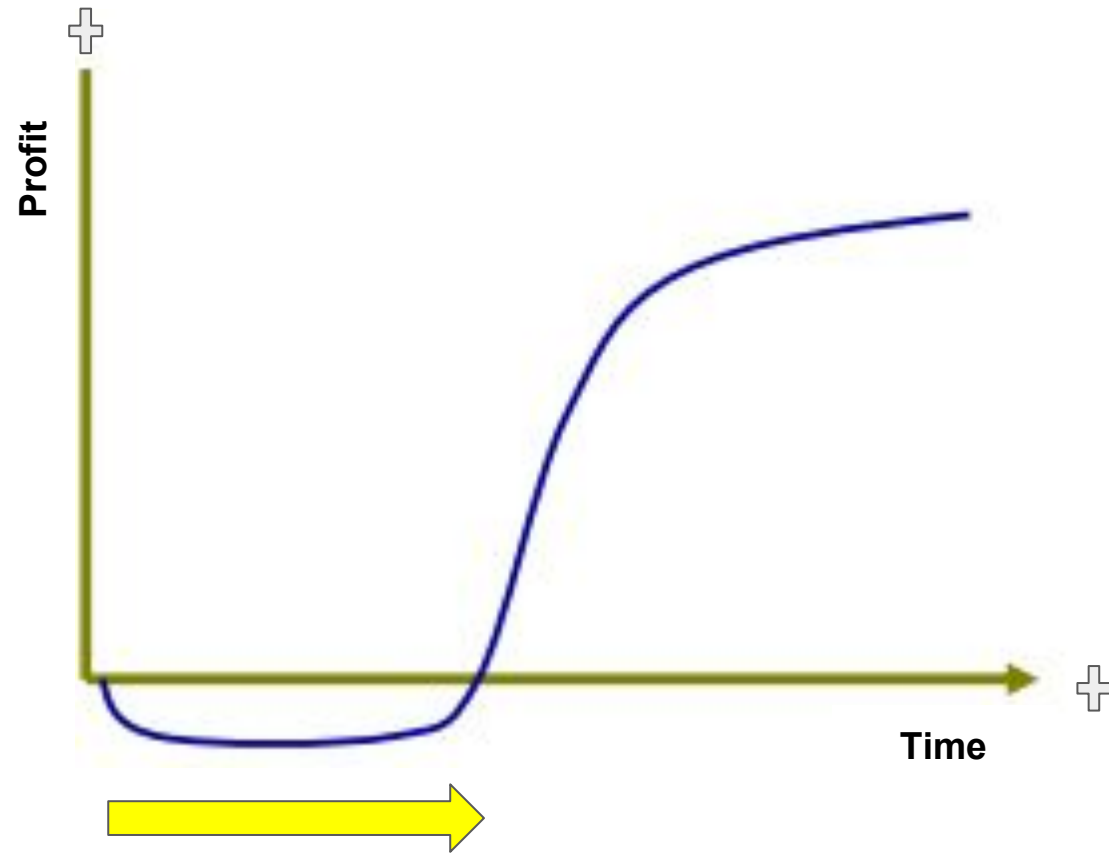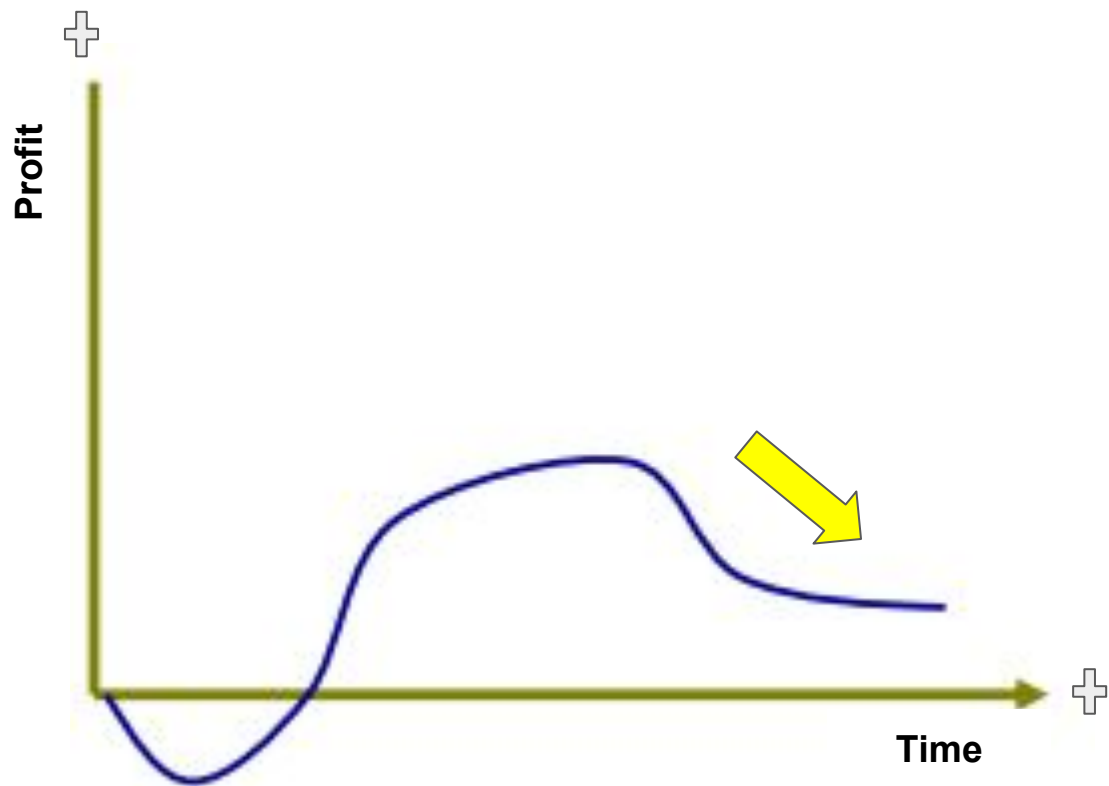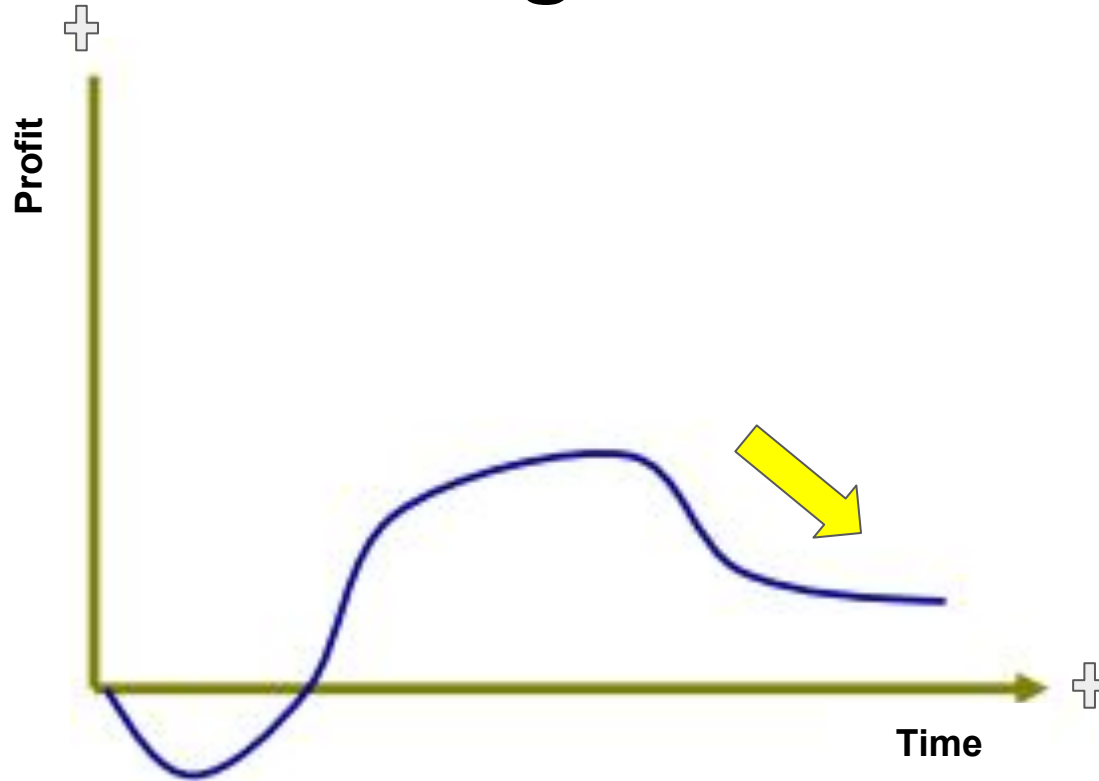| DOCTOR_ID	2015Q4	CLV 2016Q1	CLV 2016Q2	CLV 2016Q3	CLV 2016Q4	CLV 2017Q1	CLV 2017Q2	CLV 2017Q3	CLV 2017Q4	CLV 2018Q1	CLV 2018Q2	CLV 2018Q3	CLV 2018Q4
DOCID_1	-400	-390	-516	-472	-606	-950	-928	-771	-635	-569	-674	-546	-
DOCID_2	-800	1,702	4,509	10,028	14,487	1,182	5,616	4,440	9,922	6,582	10,307	8,686	3,
DOCID_3	-200	-194	-18	47	69	80	94	93	108	62	77	108	
DOCID_4	-800	-736	248	192	426	409	471	580	690	671	434	661	
DOCID_5	-800	-930	-279	-77	423	246	315	401	292	475	275	963	
DOCID_6	-2,000	-2,571	-345	648	755	-696	564	-349	1,070	814	1,313	1,544	1,
DOCID_7	-200	-187	66	70	85	110	121	116	138	-5	-1	-4	
DOCID_8	-800	-439	1,598	1,577	2,867	1,827	1,637	1,707	2,570	3,767	3,362	2,653	2,
DOCID_9	-400	-530	-492	-1,263	-433	251	260	643	-87	362	110	440	
DOCID_10	-200	-638	164	395	-381	-170	501	300	-279	-84	531	667	
DOCID_11	-400	-538	156	584	1,041	705	716	466	241	528	748	869	1,
DOCID_12	-200	-72	291	457	481	356	522	459	409	271	251	278	
DOCID_13	-400	-134	705	962	1,087	1,206	1,068	1,075	1,113	1,544	1,723	1,802	1,
DOCID_14	-2,000	-1,616	694	831	1,226	937	1,083	1,113	1,445	1,570	1,342	1,250	1,
DOCID_15	-2,000	-1,814	2,223	3,106	1,613	-4,174	4,362	4,319	3,821	-3,282	5,919	6,362	3,
DOCID_16	-800	-558	504	649	355	-291	839	796	1,143	585	549	862	1,
DOCID_17	-800	-1,727	-78	874	1,490	1,849	1,825	2,109	1,809	1,870	2,181	2,372	1,
DOCID_18	-200	-316	-142	157	141	139	26	89	251	-592	85	246	
DOCID_19	-400	-361	191	393	487	332	442	577	426	524	444	533	
DOCID_20	-200	-200	-212	-69	-173	87	136	-115	-55	-114	-62	55	
DOCID_21	-400	-443	-436	-133	-144	-198	-12	-345	-281	-448	-113	-6	
DOCID_22	-400	-376	79	461	106	638	790	717	748	682	768	1,066	1,
DOCID_23	-400	-468	-52	-26	52	-56	19	138	-103	185	263	333	
DOCID_24	-400	-400	-410	11	-105	251	334	643	414	362	110	440	
DOCID_25	-2,000	-1,927	361	262	312	468	-33	656	476	531	724	601	
DOCID_26	-2,000	-1,971	68	545	821	264	-287	943	-434	793	1,034	264	

Discovering different CLVs

Dream CLV

Viral CLV

B2B CLV

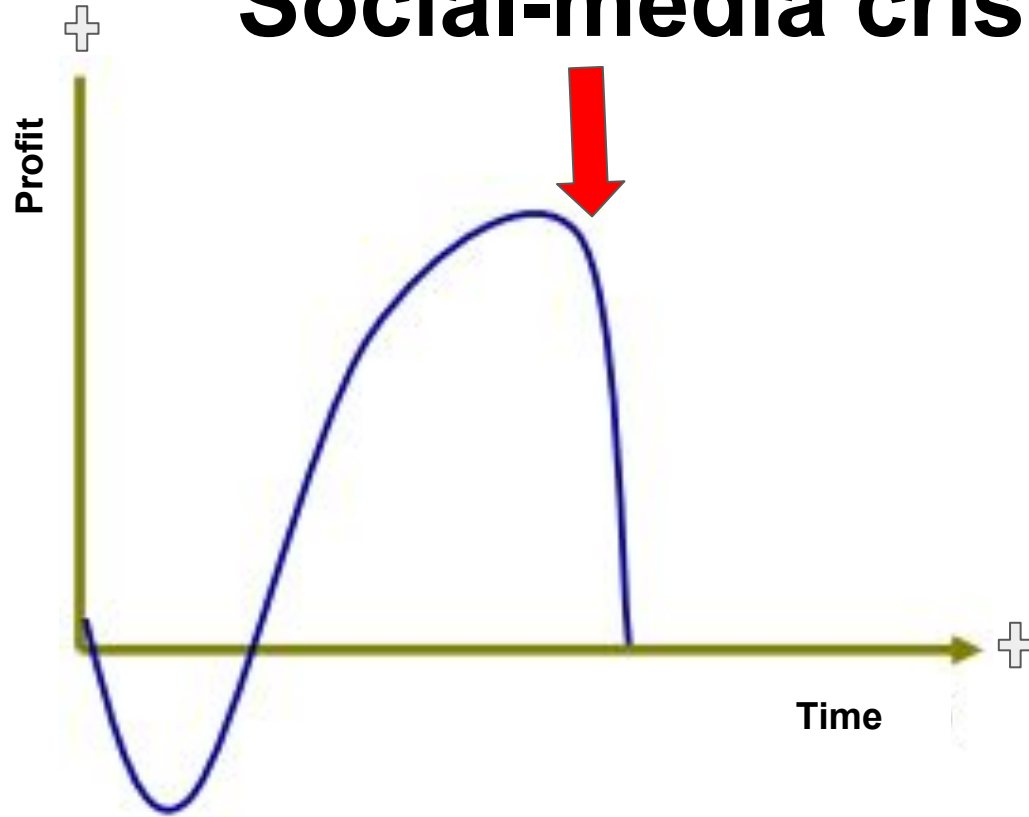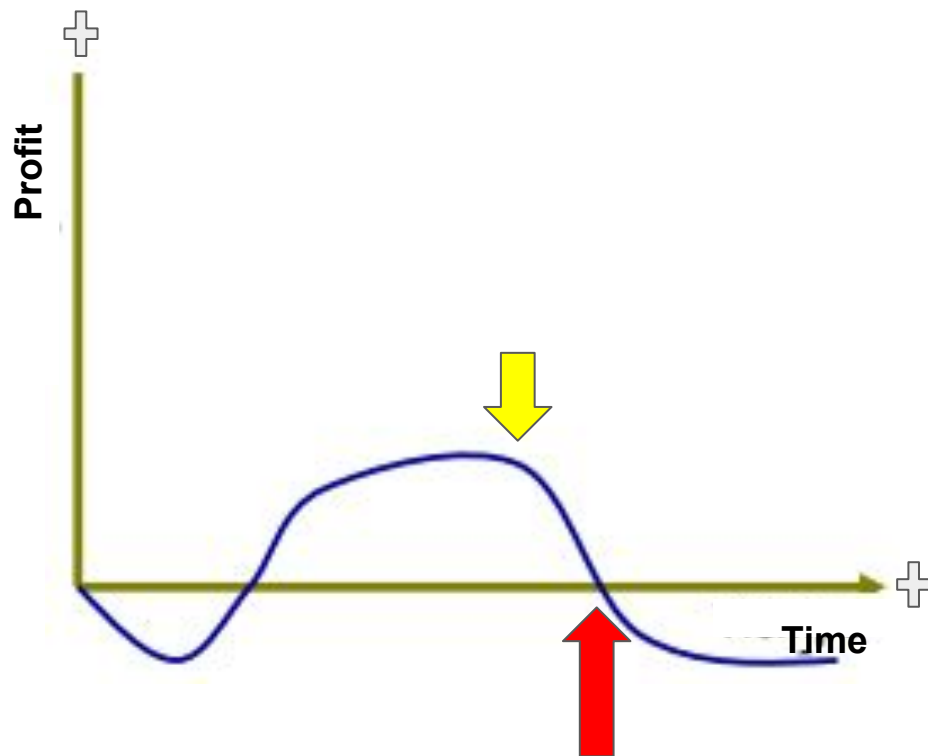**Profit** (vertical axis)

Time (horizontal axis)
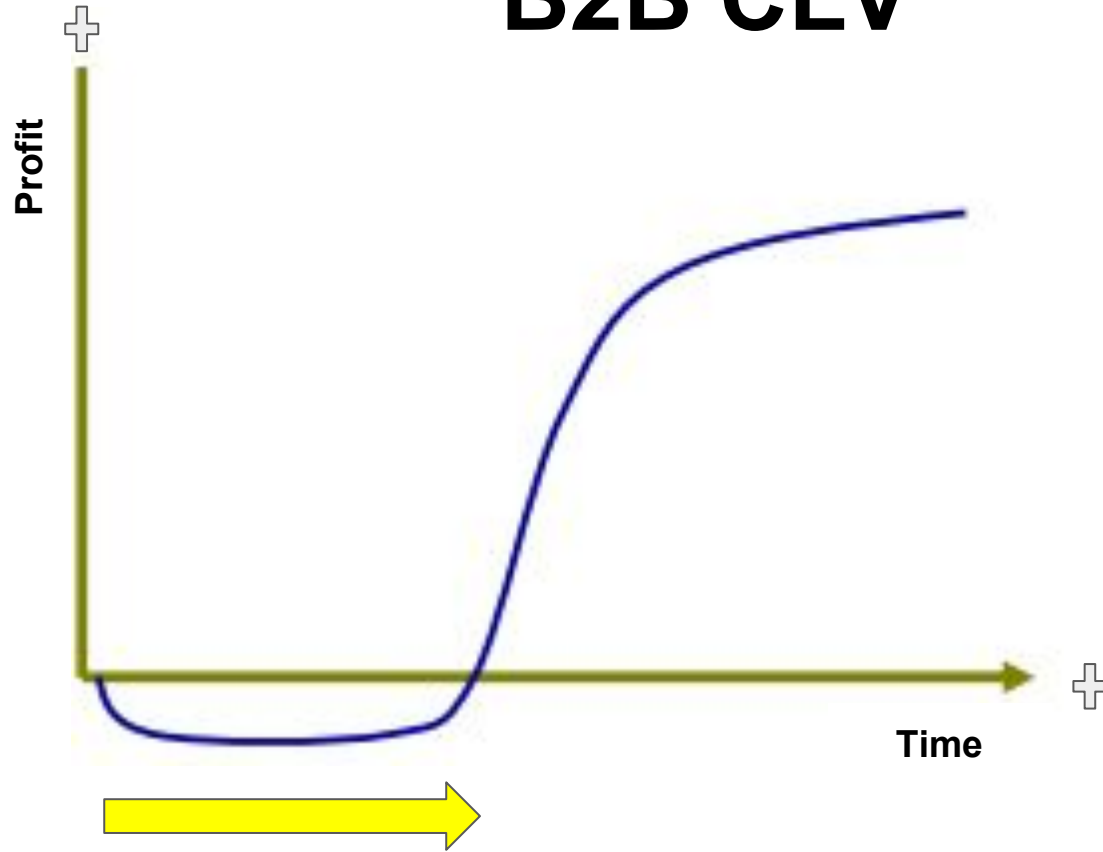
Bargain-hunters CLV
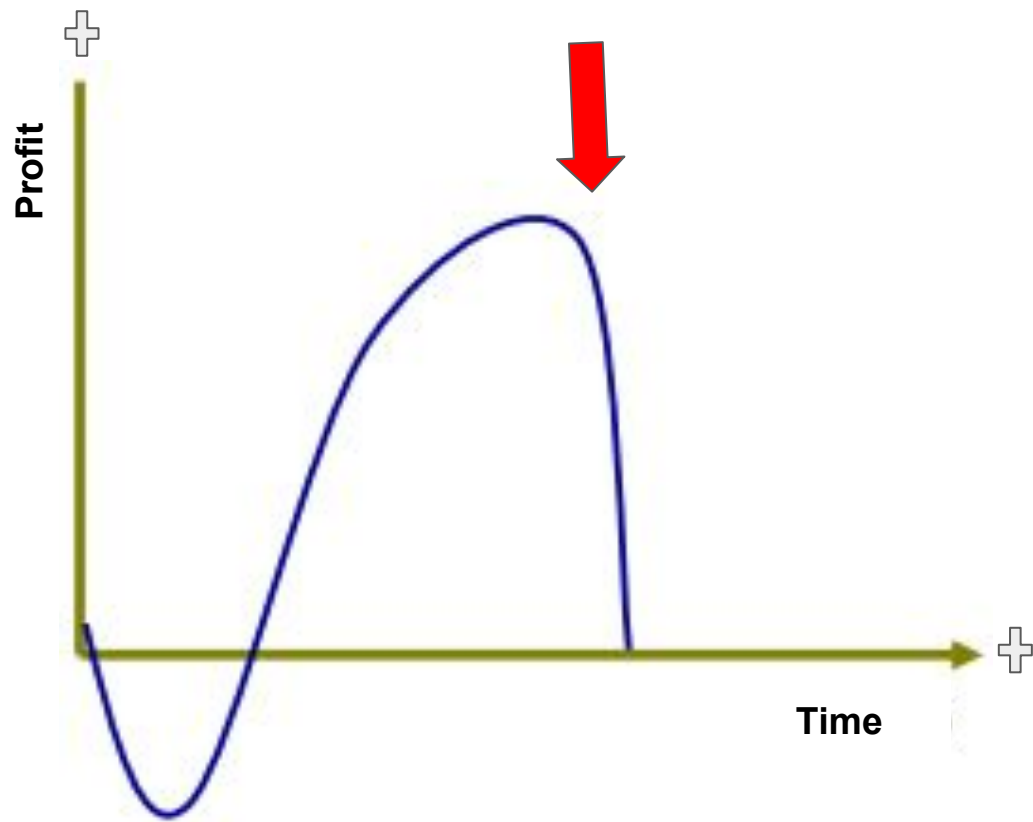
Social-media crisis CLV

Price-war CLV
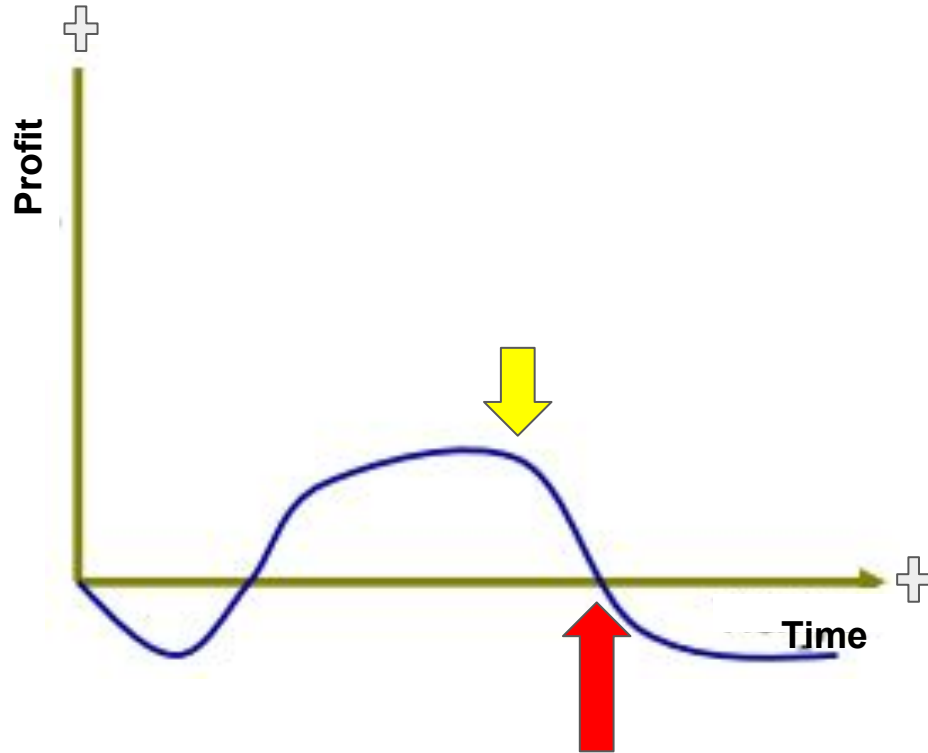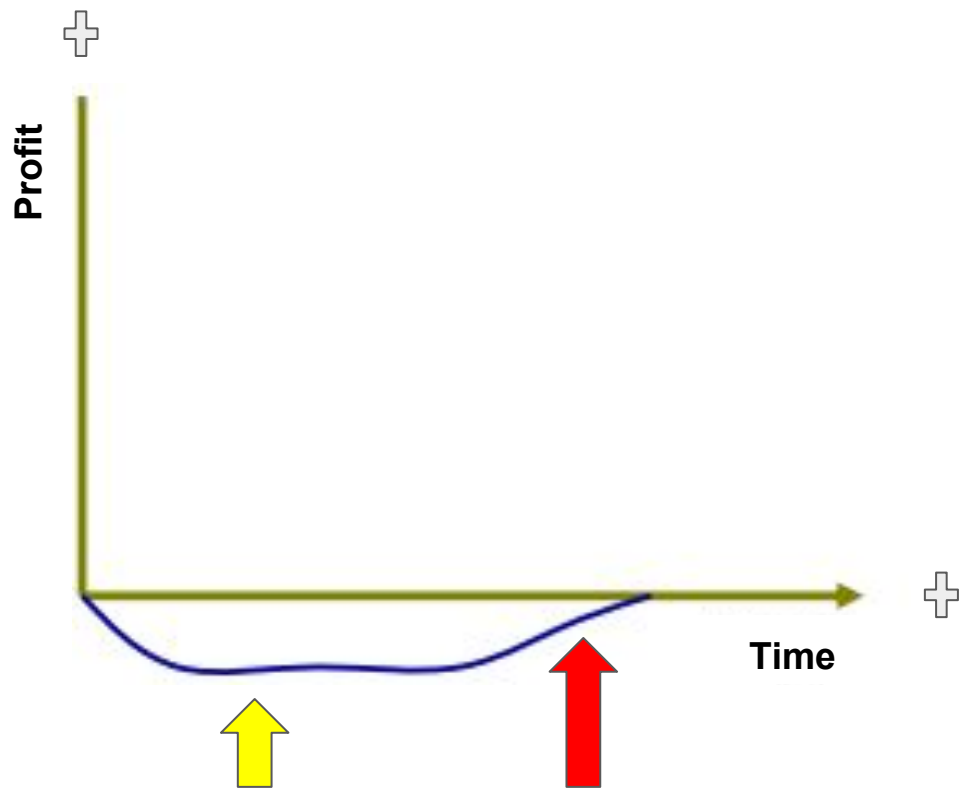
Bad segmentation CLV
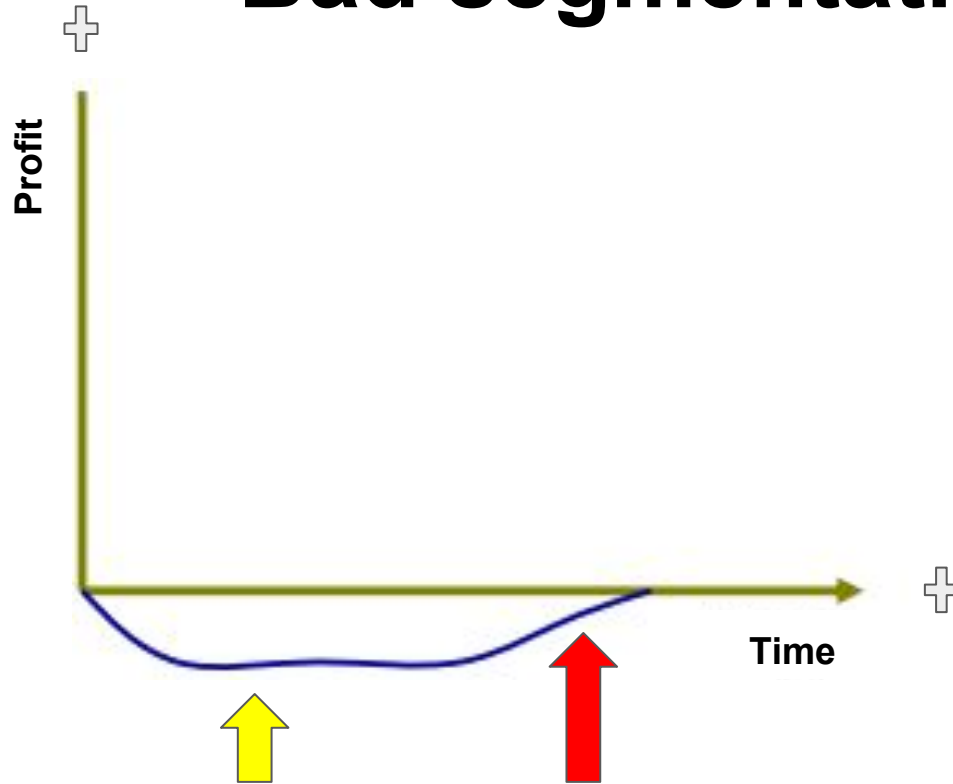
I don't understand at all | I need to go over this again | I think I got it, but am not completely comfortable | I got it | I can explain it to someone else

Key Takeaways for today:

- **Pharma industry "Pipeline" business model**
- **Drugs commercial launch steps**
- **Customer Lifetime Value analytical methodology**
- Practical exercise preparation (Google Data Studio + DataSet)

Practical Exercise Preparation

Your duty as data analyst….

"Select 3 reps to be impacted by team restructuring"
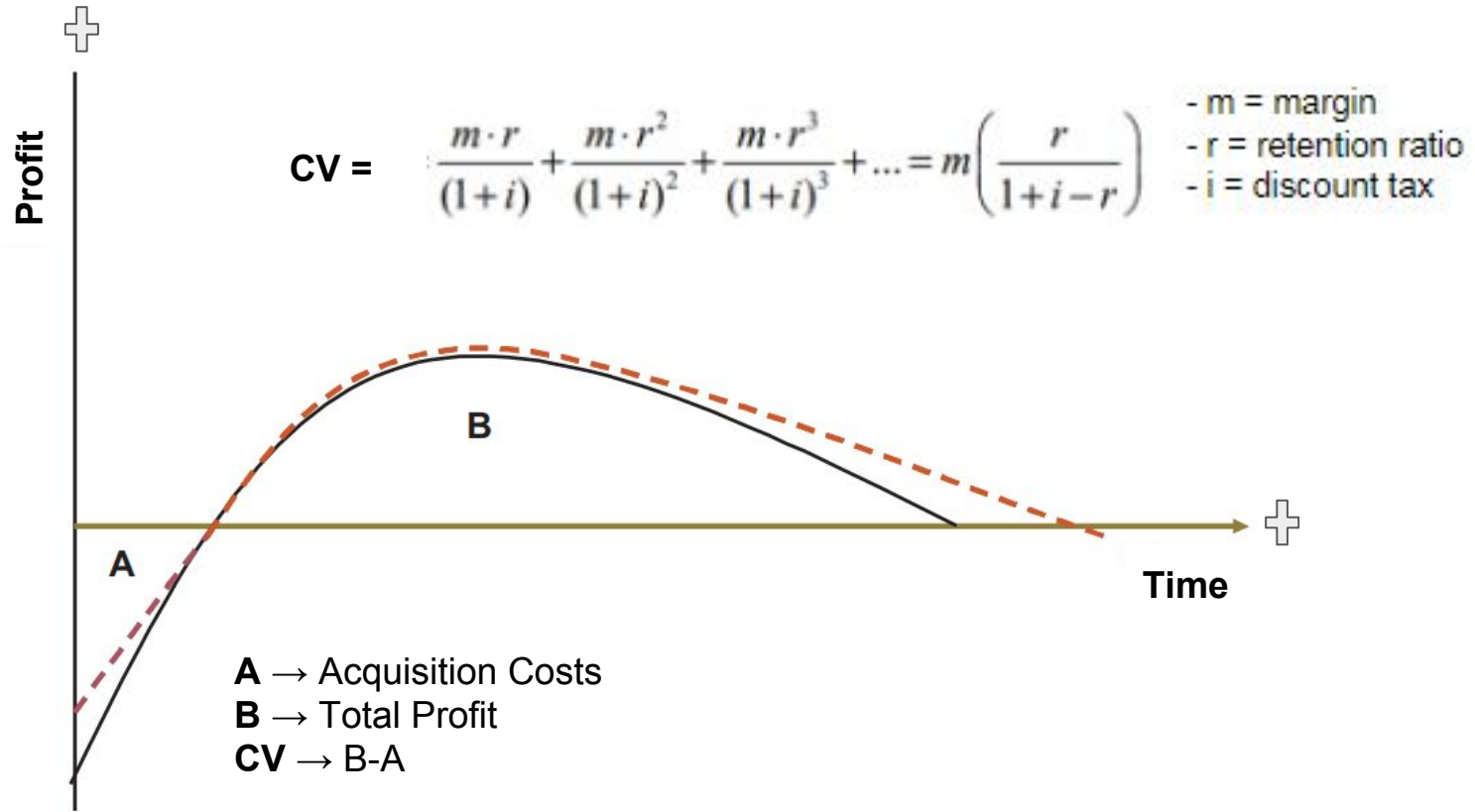
$$CV = \frac{m \cdot r}{(1+i)} + \frac{m \cdot r^2}{(1+i)^2} + \frac{m \cdot r^3}{(1+i)^3} + \ldots = m\left(\frac{r}{1+i-r}\right)$$

- m = margin
- r = retention ratio
- i = discount tax

A → Acquisition Costs
B → Total Profit
CV → B-A

CRM ERP MKTG FINANCE

DW

BCNDI_CLV
File Edit View Insert Format Data Tools Add-ons Help · Last edit was 5 days ago

	A	B
1	OVERALL ASSUMPTIONS	
2	SALES REP LABOUR COST (ANNUAL)	90,000
3	WORKING DAYS	220
4	AVERAGE DAILY VISITS	9
5	AVERAGE VISIT COST	45
6	MAX VISIT COST MULTIPLIER FACTOR	3
7		
8	MARKET DATA DISTRIBUTION AMONG SEGMENTS	
9	A	4.3
10	B	2.5
11	C	1
12	D	2
13	E	0.2

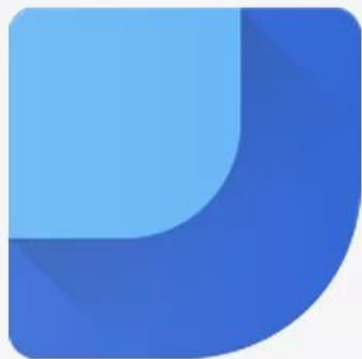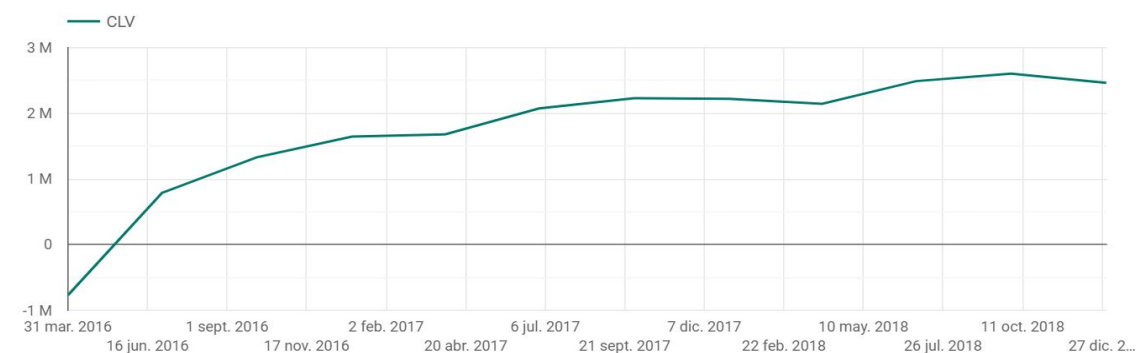|		CLV Y1Q1	CLV Y1Q2	CLV Y1Q3	CLV Y1Q4	CLV Y2Q1	CLV Y2Q2	CLV Y2Q3	CLV Y2Q4	CLV Y3Q1	CLV Y3Q2	CLV Y3Q3	CLV Y3Q4
16	R (Retention Ratio)	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%
17	d (tasa interés)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
18	CLV Index	1	2	3	4	5	6	7	8	9	10	11	12

Treatment Influence hierarchy
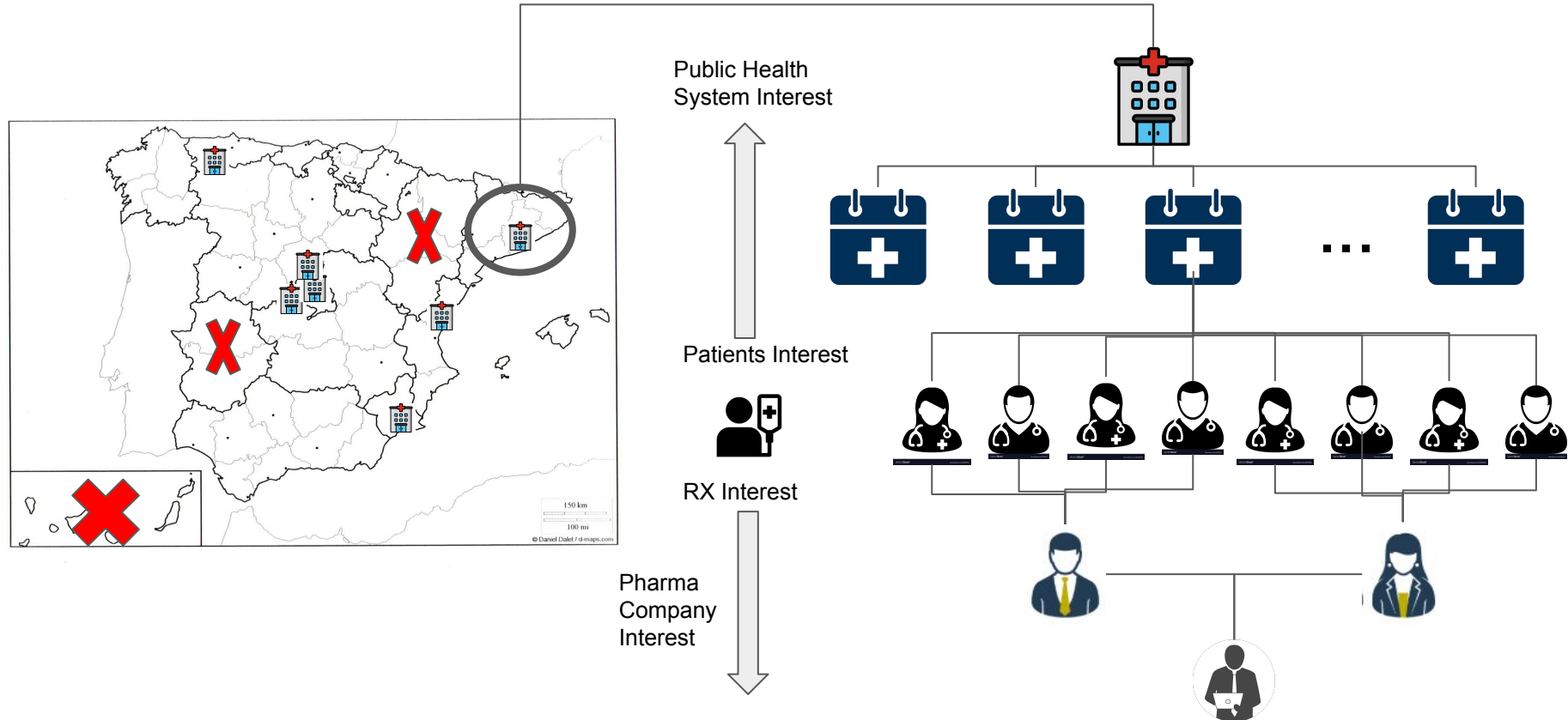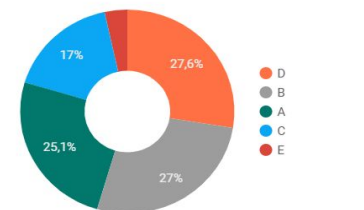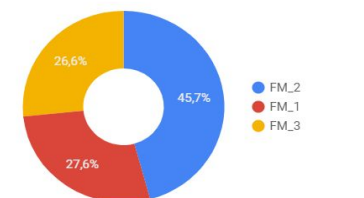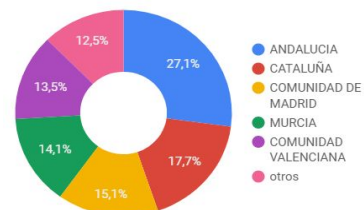
Dataset Fast Facts

- 3 Field Managers
- 28 Sales Reps
- 207 Care Center
- 124 Hospitals
- 1690 Doctors

Google Data Studio

Region donut:
- ANDALUCIA 27,1%
- CATALUÑA 17,7%
- COMUNIDAD DE MADRID 15,1%
- MURCIA 14,1%
- COMUNIDAD VALENCIANA 13,5%
- otros 12,5%

FM donut:
- FM_2 45,7%
- FM_1 27,6%
- FM_3 26,6%

Profile donut:
- D 27,6%
- B 27%
- A 25,1%
- C 17%
- E

CLV (line chart)

Bubble chart legend: REP_28, REP_8, REP_27, REP_2, REP_20, REP_26, REP_25, REP_15, REP_19, REP_24, REP_6, REP_9, REP_23
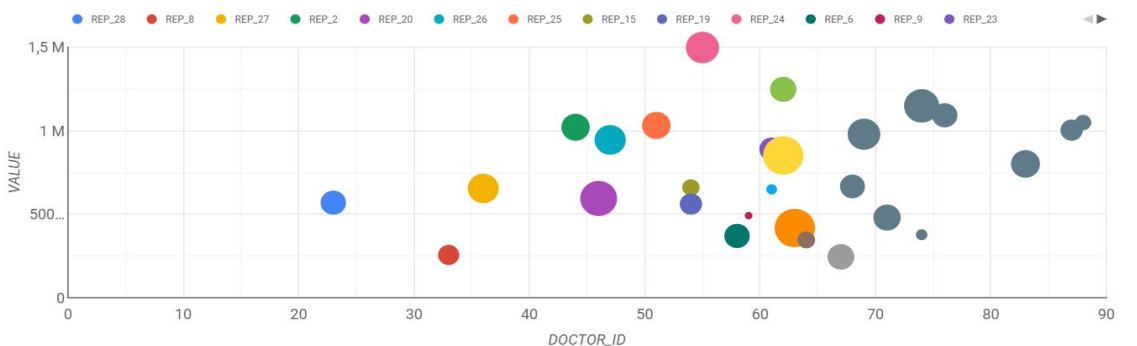
PROFILE / VALUE / SCORE

POTENTIAL	A VALUE	A SCORE	B VALUE	B SCORE	C VALUE	C SCORE	D VALUE	D SCORE	E VALUE	E SCORE	Total VALUE	Total SCORE
High	1,9 M	47,6 mil	1,8 M	55,9 mil	473,1 mil	28,6 mil	1,4 M	28,2 mil	64,1 mil	7,8 mil	5,7 M	168,1 mil
Low	140,6 mil	3,5 mil	1,2 M	17,1 mil	1,4 M	39,4 mil	2,1 M	21,7 mil	444,1 mil	46,1 mil	5,3 M	127,7 mil
Medium	705,2 mil	12,4 mil	1,5 M	31,9 mil	1,4 M	47,1 mil	1,8 M	28,1 mil	213,4 mil	21,2 mil	5,6 M	140,8 mil
Very_High	2,5 M	68 mil	1,2 M	52,2 mil	254 mil	16,7 mil	449,6 mil	12,5 mil	-6 mil	972	4,3 M	150,4 mil
Total	5,2 M	131,5 mil	5,6 M	157,1 mil	3,5 M	131,8 mil	5,8 M	90,5 mil	715,6 mil	76,1 mil	20,9 M	587 mil

Key Takeaways for today:

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