



# Optimizing Agent Workloads and Marketing Campaigns

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# Background

- We are an European financial services company that sells savings and investment products via direct marketing (phone calls).
- Issues reported by our Financial Professionals:
  - Leads prioritization, client segmentation
    - 88 % of conversations do not result in a sale
- Issues reported by our Marketing Department:
  - Seasonality, economic impacts, campaign effectiveness



# Background

- We have a dataset of 45,211 phone calls across 20 inputs.
  - Client demographics and financial status
  - Campaign information
  - Contact frequency
  - Economic factors (CPI, interest rate, employment rate)
- Each record has data on whether or not the phone call led to the consumer purchasing a banking product (term deposit).



# Agent Workload

500,000 Clients

20 Financial Professionals

Annual touchpoints desired

Requires 25,000 calls per agent per year

Agents can only handle 20,000 per year

Expanding staff 25% is not possible



# Agent Weekly Call Lists

400 calls per week

20% connection rate

80 conversations per week

9 conversations (11%) result in a sale



# Agent Weekly Call Lists

400 calls per week

20% connection rate

80 conversations per week

9 conversations (11%) result in a sale

44 golden leads

44 conversations (55%) result in a sale



# Call Prioritization

## Classification model

- Call outcome (sale vs. no sale)
- Selected for highest precision
- Predicts with probabilities

Sales managers can curate better call lists



# Call Prioritization

~ 15% increase in overall sales even if agents do not change their behavior

Expected success rate (without model): 11.3%

Expected success rate (with model): 13.0%





# Call Prioritization

Success rate scales with total number of customers

If number of customers increases from 500,000 to 550,000

~ 23% increase in overall sales even if agents do not change their behavior

Expected success rate (without model): 11.3%

Expected success rate (with model): 13.9%



# The Old Call List

<input type="checkbox"/>	Name ↑	Company	Mobile	Phone	
1	<input type="checkbox"/> Abraham Kuofeng	Jukebox Fubars	(755) 555-5162	(823) 555-1474	▼
2	<input type="checkbox"/> Adam Esite	Tuning Smop, NA	(412) 555-7182	(113) 555-8467	▼
3	<input type="checkbox"/> Aeneas Sinchau	Barber of Abiquiu	(561) 555-7607	(440) 555-2411	▼
4	<input type="checkbox"/> Afrid Ye-Sho	Risc of La Feria	(232) 555-2158	(833) 555-8234	▼
5	<input type="checkbox"/> Andreas Makoto	Bart of Machipongo	(680) 555-0627	(446) 555-7100	▼
6	<input type="checkbox"/> Andreas Sridharan	Ecp of Yamhill	(284) 555-2382	(225) 555-8252	▼
7	<input type="checkbox"/> Angie Mosis	Flap Gosmacs	(776) 555-1206	(074) 555-3830	▼
8	<input type="checkbox"/> Anna Adib An-Son	Bot Yang, P.C.	(426) 555-5271	(252) 555-4873	▼
9	<input type="checkbox"/> Anurag Bingham	Net by Gino University	(673) 555-8728	(717) 555-1136	▼
10	<input type="checkbox"/> Arijit Cabras	Kirkland of Abernathy	(504) 555-5004	(617) 555-6051	▼
11	<input type="checkbox"/> Arty Roozbeh	Scrogged Exching	(460) 555-1708	(715) 555-5835	▼

# The New Call List

	<input type="checkbox"/> Name	Company	Mobile	Phone	Score ↓	Golden	
1	<input type="checkbox"/> Jerrimy Radha Shih-Tien	Spammed Golf	(865) 555-2780	(661) 555-8770	99	<input checked="" type="checkbox"/>	▼
2	<input type="checkbox"/> Brenda Verona	Chaining Exon		(518) 555-8486	98	<input checked="" type="checkbox"/>	▼
3	<input type="checkbox"/> Trisha Chueh	Loses Plymouth, L.L.C.	(885) 555-8101	(008) 555-7637	97	<input checked="" type="checkbox"/>	▼
4	<input type="checkbox"/> Chandram Prelims	Gorps Eternity	(365) 555-1358	(008) 555-7858	97	<input checked="" type="checkbox"/>	▼
5	<input type="checkbox"/> Salle Kwangchi	Bars Alphabet		(770) 555-0200	96	<input checked="" type="checkbox"/>	▼
6	<input type="checkbox"/> Eva Rimey	Clock Util, Inc.	(454) 555-1666	(321) 555-3458	95	<input checked="" type="checkbox"/>	▼
7	<input type="checkbox"/> Hundt Sproul	Newbies Befunge	(775) 555-8864	(521) 555-5460	95	<input checked="" type="checkbox"/>	▼
8	<input type="checkbox"/> Jeffery Hubbard	Pinged Ripple	(132) 555-4760	(270) 555-8122	95	<input checked="" type="checkbox"/>	▼
9	<input type="checkbox"/> Jen Wenbin	Surfs Fender Bank	(512) 555-0876	(147) 555-1232	95	<input checked="" type="checkbox"/>	▼
10	<input type="checkbox"/> Jaik Shireen	Shrieks Lamination School	(346) 555-7503		95	<input checked="" type="checkbox"/>	▼
11	<input type="checkbox"/> Jihong Muller	Factors Cluster	(333) 555-8300	(278) 555-3015	94	<input checked="" type="checkbox"/>	▼

# Knock On Effects

Increase successful conversations

Agent commission goes up

Agent Confidence Increases

Talking to clients becomes more comfortable

Customer Trust Increases

Confidence and comfort conveys trustworthiness

Attrition Decreases

Up to \$100,000 to recruit, hire, train and license a new agent





# Looking Back: What worked and what didn't

# Successful vs. Unsuccessful Calls

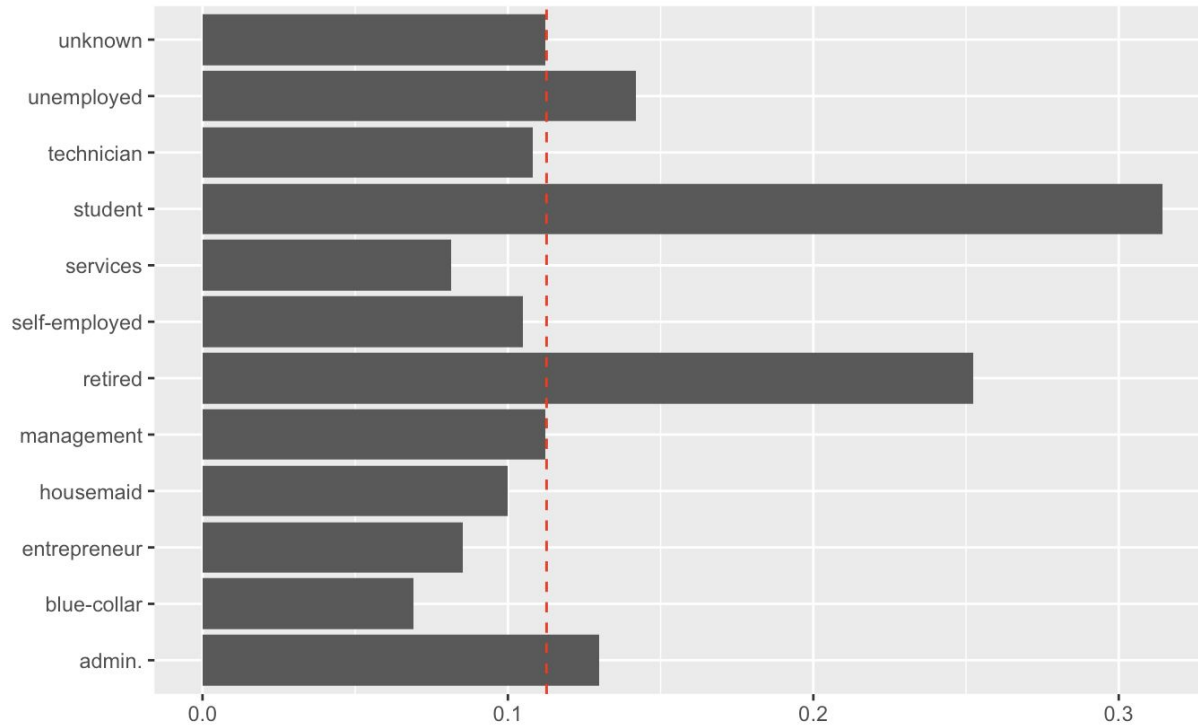
## Successful

- Basic:
  - Single
- Time:
  - March
  - September
  - October
  - December
- Jobs:
  - Retired
  - Student
- Education:
  - University Degree

## Unsuccessful

- Basic:
  - No heavy influencing factors
- Time:
  - May
  - June
  - July
  - August
  - November
- Jobs:
  - Technician
  - Services
  - Blue Collar
  - Entrepreneur
- Education:
  - PhD

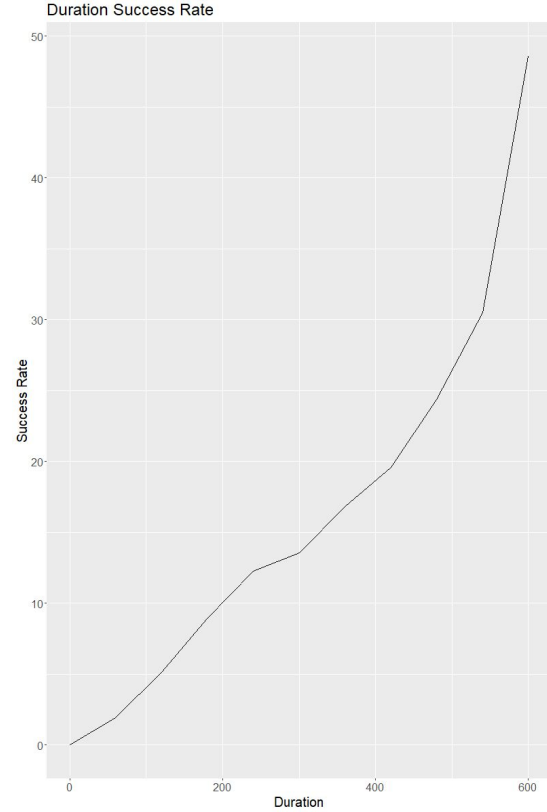
# Very popular with those who don't work



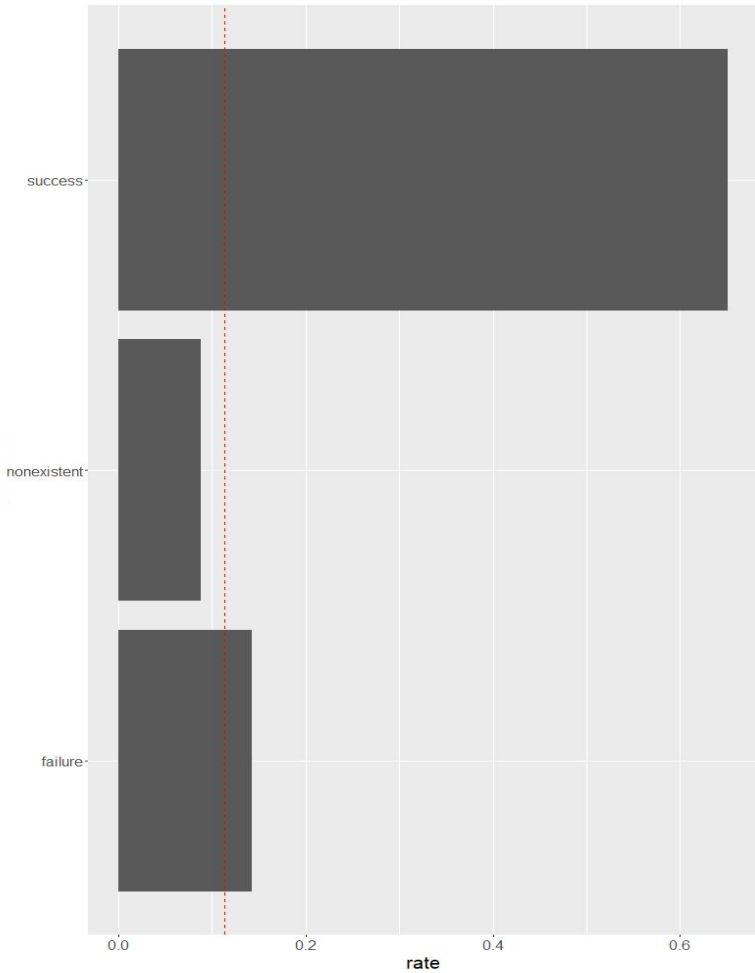
# Duration Matters!

There is a direct correlation between call duration and success rate

Longer calls lead to more conversions







## Rule of thumb:

# Success leads to more success!

- Callers who have previously purchased a term deposit are very likely to repurchase ( $> 60\%$ ).
- Callers who were previously contacted but did not purchase still purchased a term deposit at an above average rate.



Thank you!