



# Balancing Data Needs with UX: Designing AI Products

November 12, 2020

**Amanda Dorsey**

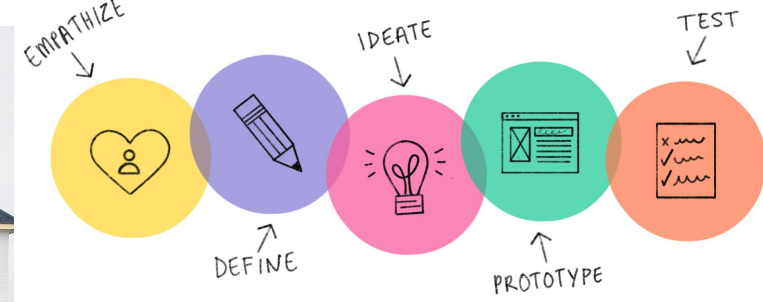
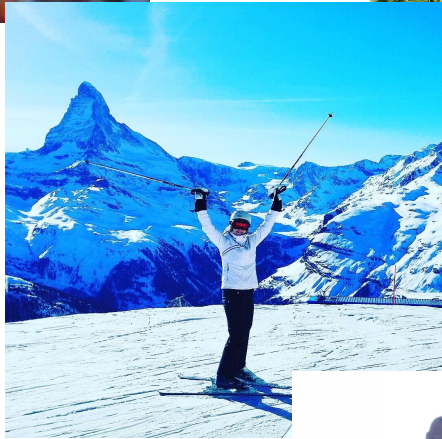
**Director of Product Management**

**Capital One**

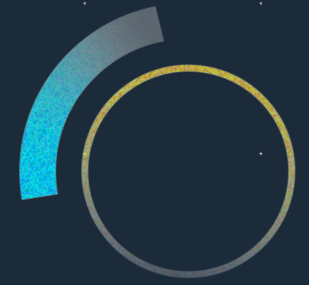
# Agenda

- Intro
- What is AI?
- AI for Product & Design
  - Keep Your Customer Problem Front and Center
  - Build the Right Team
  - Validate Your Ship-Sinkers Fast and Early
  - Balance UX & Data Needs
  - Design for Reuse
  - Sell the Benefit
- Case Study: SmartQueues
- Q&A

# About Me



Poll: What does AI mean?

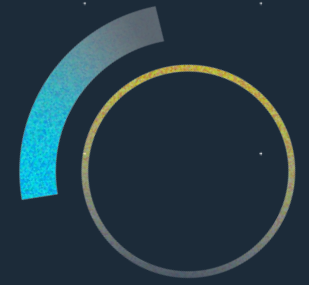


## Artificial Intelligence

“The branch of computer science concerned with making computers behave like humans.”

- Dartmouth Conference on AI





## Machine Learning

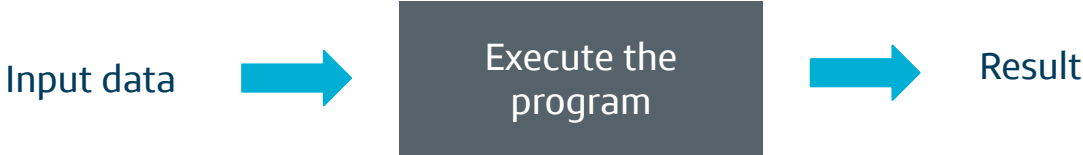
“Field of study that gives computers the ability to learn without being explicitly programmed.”

-Arthur Samuel

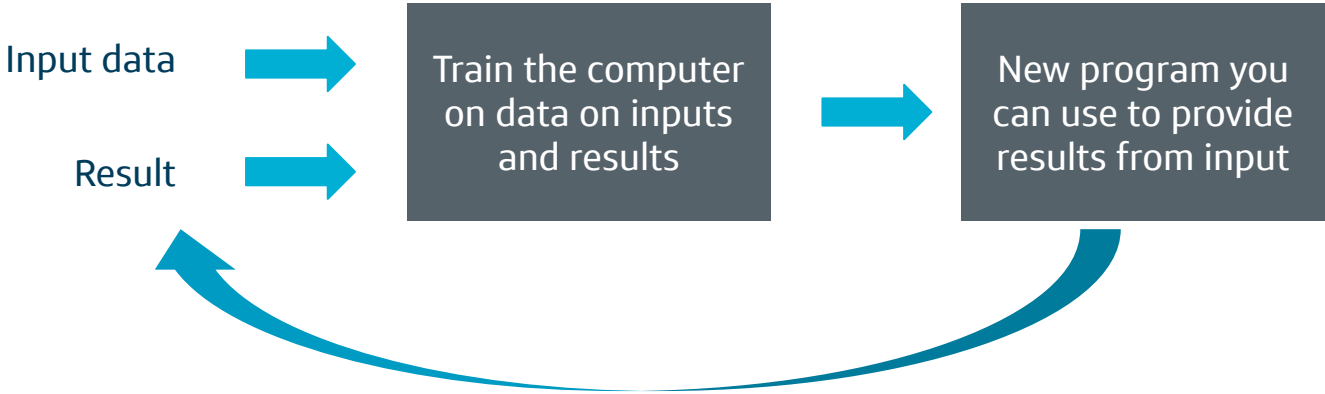


ML involves giving the computer the answer key from existing data and training it to replicate that answer

### Traditional Programming



### Machine Learning



# Good use cases for ML

## Human-like processing, where scale is limited by headcount

- Reviewing phone calls for quality or compliance
- Reviewing transactions for fraud
- Answering common customer questions

## Situations where data is large or complicated, making it difficult for humans to find patterns

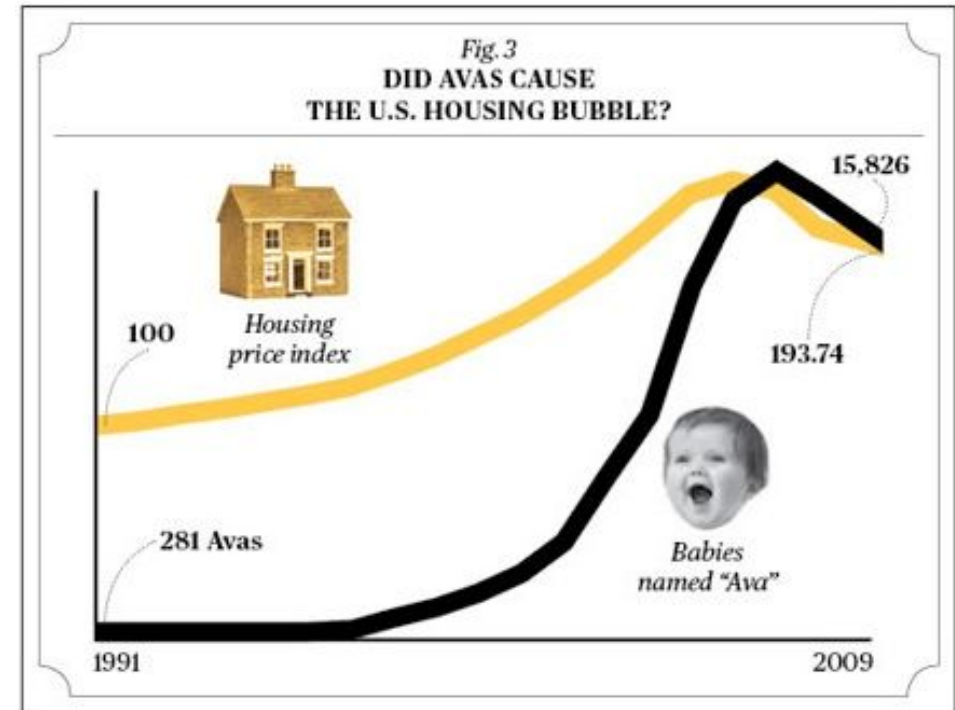
- Credit risk modeling
- Workflow optimization
- Identifying customer segments



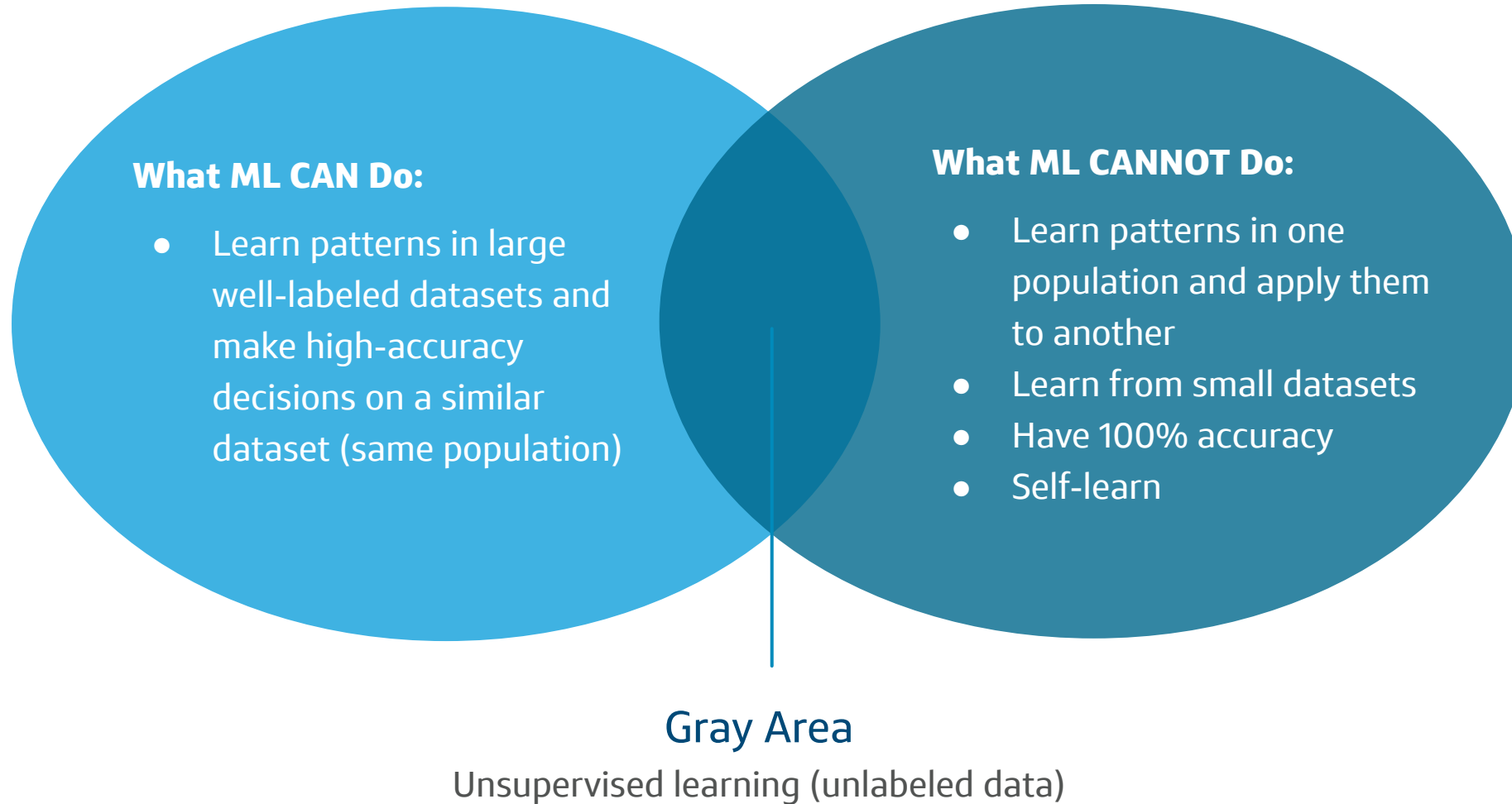
# Bad use cases for ML

## Use Cases

- When a simple algorithm can be used
- Humans can do the work, cost-effectively
- Regulations mandate no room for error
- You don't have (and can't get) quality data to learn from
- There's no clear business customer



# Machine Learning Doesn't Mean Self-Learning



# AI for Product & Design

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## Tip #1: Keep your customer problem front and center



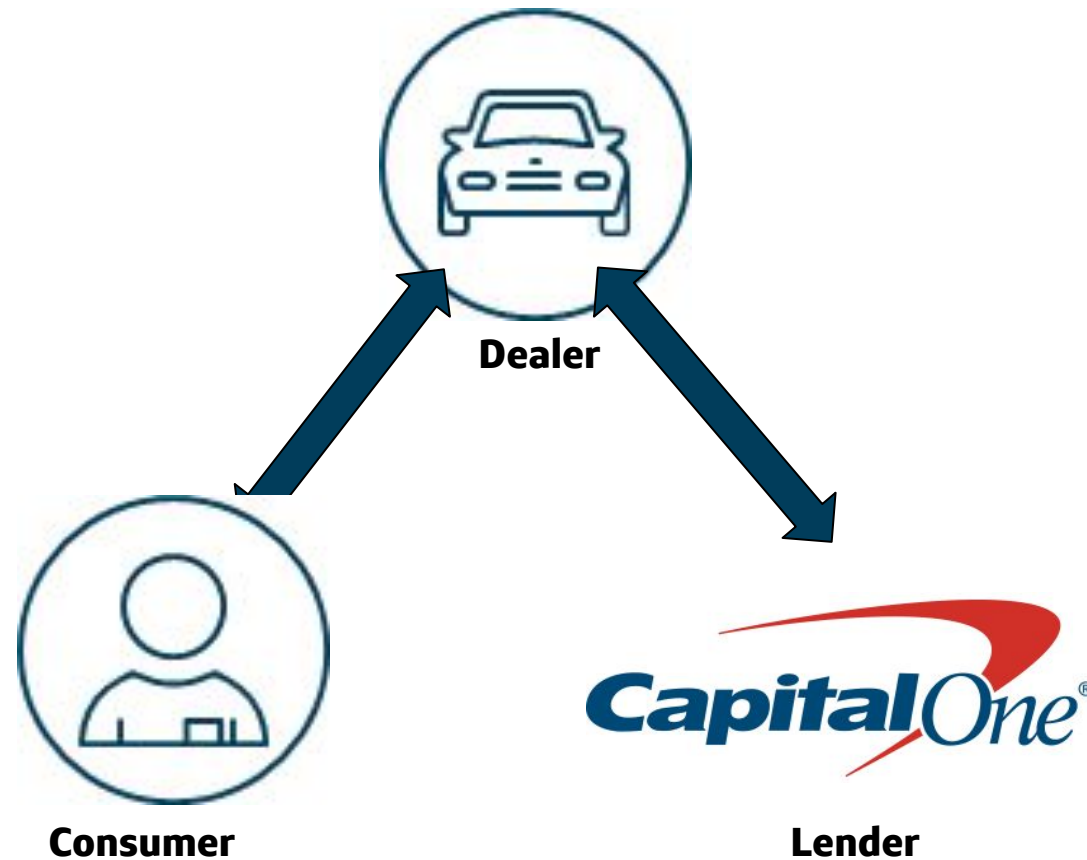
- Be crystal clear and laser focused on the most important problem you're trying to solve
- Define what success looks like in a measurable, binary way
- Measure your results until you succeed

Think of AI as another type of technology - a how, not a why

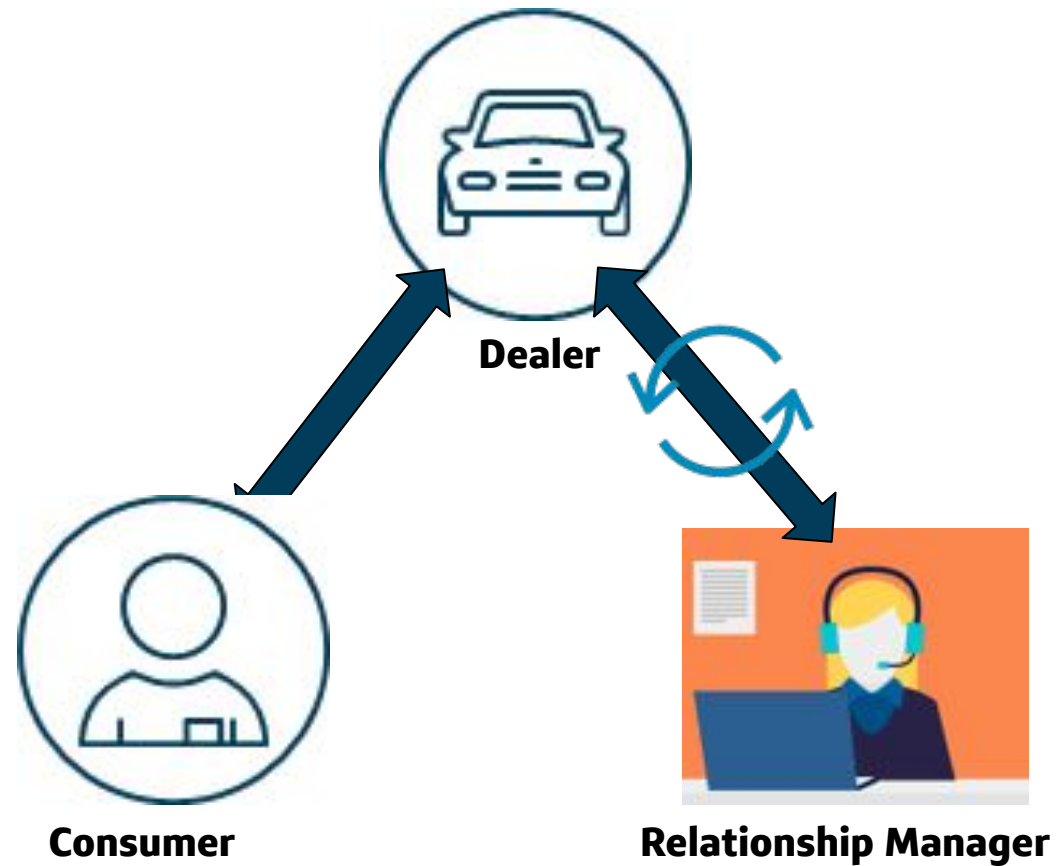
# Case Study: SmartQueues

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When a Consumer decides to finance a vehicle, the dealer purchases that contract and sells it to a lender



At Capital One Auto Finance, Relationship Managers (RMs) negotiate with dealers to convert approvals into contracts



RM's use judgment to choose which approvals to contact a dealer about, but it is not always clear to them what the best strategy is



**Examples of Strategies Employed by RMs:**

**Dealer information**

**Time**

**Competitiveness of our offer**

**Deal potential profitability**



# We leveraged user research to define a clear problem statement



## User Research Methods

- Empathy interviews
- Iterative prototype testing
- Usability research
- Observation

## What we learned from RMs

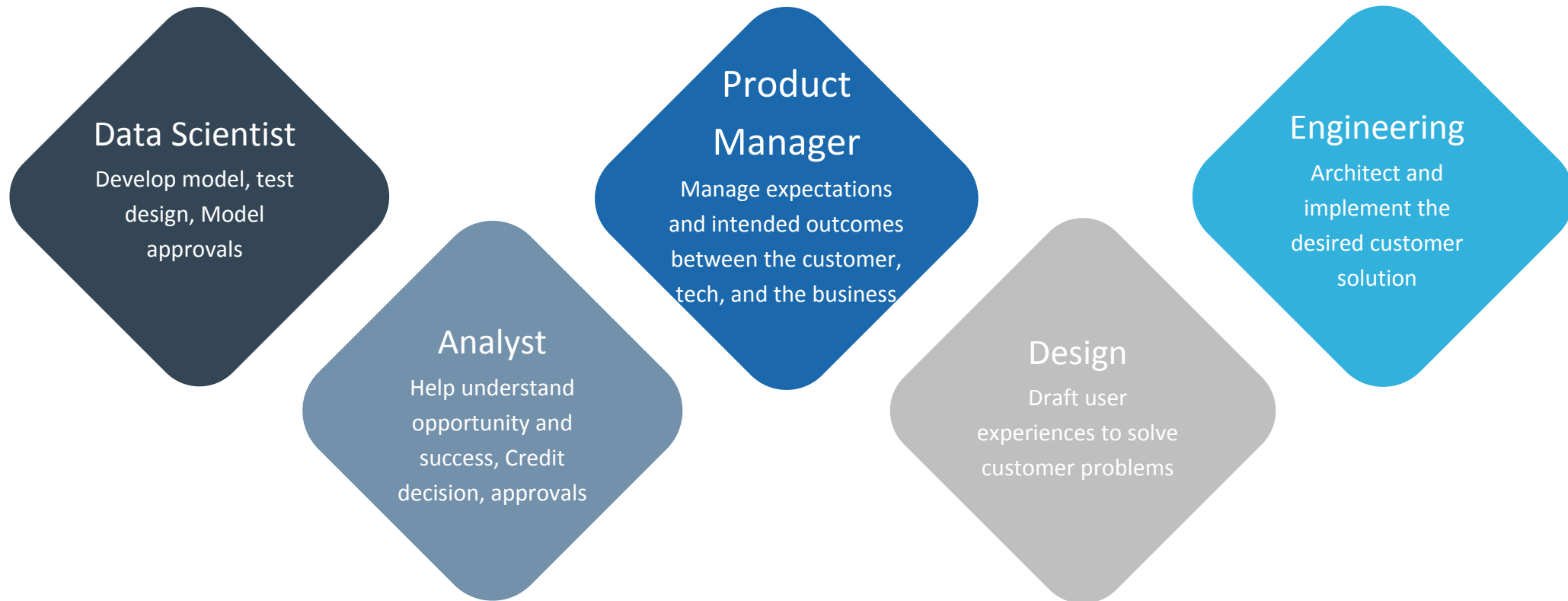
- Rely too much on **judgment**
- Hard to know how **effective** I am
- **Lots of data**, hard to synthesize
- Spend too much time **reacting**



As a RM, I try to win as much business as possible, but I do not know effective I am or how to improve my strategy

# Tip #2: Build the right team

Developing a machine learning product is often a complex and cross-functional effort





SmartQueues involved a very large cross-functional project team

PdM

BA

DS

Tech

Design

Sales  
Associates

Legal /  
Compliance

## Tip #3: Validate your ship-sinkers fast and early

**Auction Web**



ebay

- Identify your riskiest unknowns that must be true for your product to work
- Rapidly experiment to turn unknowns → knowns
- Iterate quickly and scrappily
- As with any product, increase fidelity and reduce # prototypes as confidence improves

# We quickly rolled out a series of tests to validate our key unknowns



**Can the model accurately predict the likelihood of us winning a deal?**



**Will augmented intelligence be able to win more business than a RM on their own?**



**Will users understand and trust the product?**

# In order to rollout the tests quickly, we balanced usability and speed-to-market in our test and product designs



No UI changes

Application Inventory

All Approvals 13 | All Messages | Focus Dealers 155 | Dealer Nav Apps 11

All Approvals Within last week Refresh

DATE	DEALER	SUBMITTER	CUSTOMER	TYPE	TIER	CALLBACK	MESSAGE	STATE
06/27/18 4:22 PM	Executive			DN	1	As Submitted		
06/27/18 2:11 PM	Executive			DN	4	As Submitted		
06/27/18 1:05 PM	Executive			DN	1	Counter		
06/27/18 12:39 PM	Executive			DN	1	As Submitted		

Filter Results Reset Filters

+ New List

Show Apps For

Search for RM

Dealers

Lookup Dealers

Dealer Type

- RM Focus Dealers
- ASM Focus Dealers
- Near Uptier
- Big Opportunity
- Risk of Demotion

Refresh button re-runs model

Existing buttons used to track calls

RMs trained NOT use filters

For later iterations, we made some design changes to improve the user experience and allow necessary data capture

The screenshot shows the 'Application Inventory' page. On the left, a vertical green double-headed arrow indicates a 'Highest Score' at the top and 'Lowest Score' at the bottom. A green circle with the number '2' is positioned in the middle of this arrow. The interface includes a 'SMARTQUEUES' toggle switch (callout 1), a 'SUBMITTER' column header (callout 4), and a 'SUBMITTER' cell in the first row of the table (callout 3). The table has columns: DATE, DEALER, SUBMITTER, APPLICANT, TYPE, TIER, CALLBACK, MESSAGE, and STATE. The first row shows a date of 03/24/17 at 5:23PM, dealer 'Executive', and a submitter link. The second row shows a date of 03/24/17 at 4:57PM, dealer 'Diamond', and a submitter link. The third row shows a date of 03/24/17 at 3:24PM, dealer 'Executive', and a submitter link.

**1 Smart Queues Toggle**  
*Turns Smart Queues On and Off*

**2 Smart Queues Ranking**  
*Re-orders RMs' queue from highest score to lowest score*

**3 Submitter Phone Number**  
*Used to indicate that an RM is making a proactive outbound dealer call*

**4 Link by dealer or submitter**  
*Used to group approvals from either same dealer or same submitter*

We missed a key unknown! Any guesses?





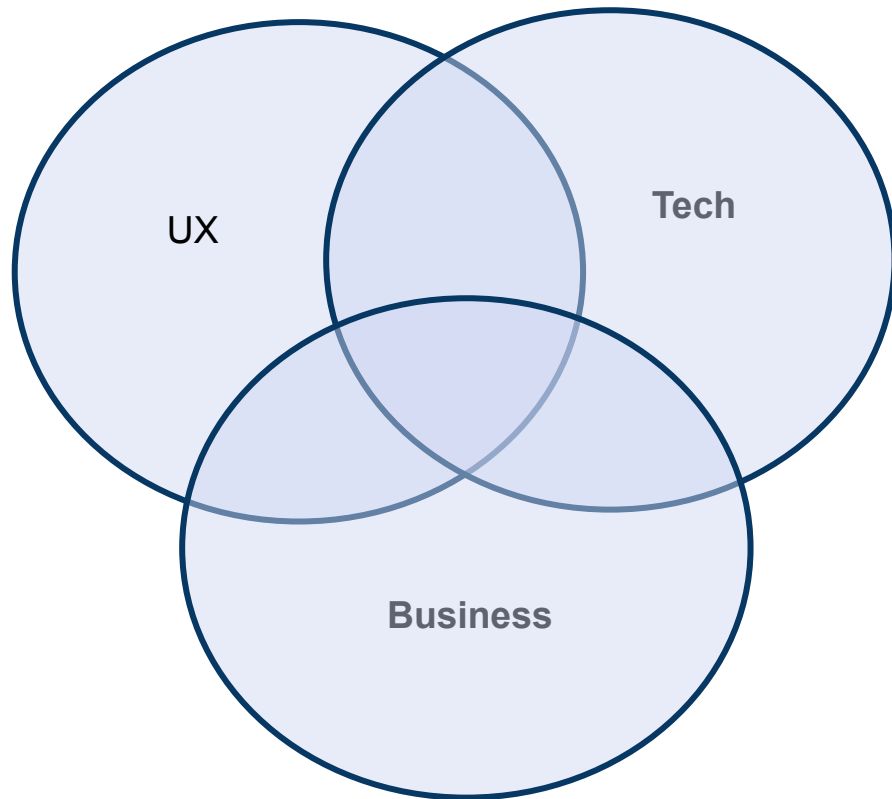
We missed a key unknown!



**Will users have time  
to use the product?**



## Tip #4: Balance UX and Data Needs



Data fuels your model!

- If there are no available sources of data, we need to create a data flow
- We must be able to validate the product's success
- If the model will be enhanced, data to measure performance is key

UX fuels your customer experience!

- Define 'good enough' at each stage of your product; do not sacrifice 'good enough'
- Get feedback often and early
- Know that just like the model, your design will improve over time

## Tip #5: Design for reuse



Break capabilities (product, design, technology) down to the smallest chunk possible.



Spend some time exploring reusable capabilities.

# Tip #6: Sell the benefit

Sell based on the benefits, not the features

## Feature



A 5 GB hard drive in a 4x2 inch case.

## Benefit

*1,000 songs in your pocket*



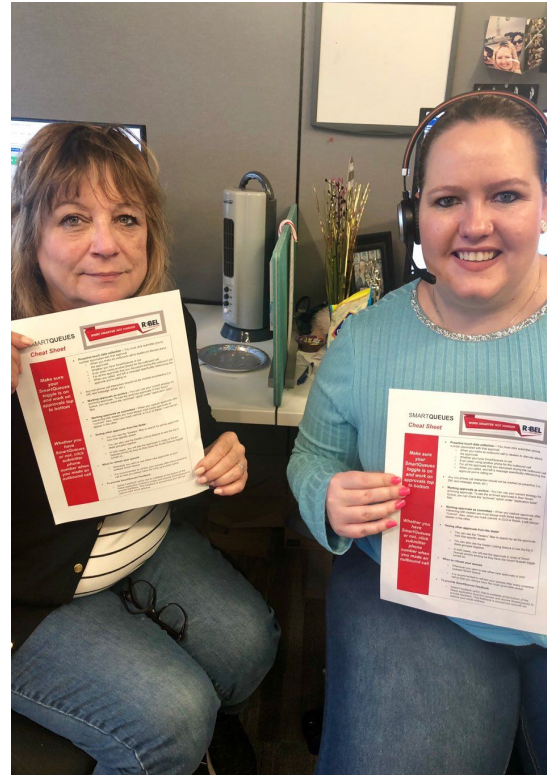
Drive for up to 50 miles at speeds up to 50 mph on a flat.

- Safer handling as the flat occurs
- Able to move to a safe location to change the tire or call someone
- Able to continue your day and call while arranging for a fix.

*Never stuck on the highway for a flat tire again.*

# Creative internal PR and reporting on product value helped us gain user trust

## SmartQueues Launch Celebrations



## User-facing Dashboard + Monthly Results Communications

Amanda Dorsey  
to #Sales,



Amazing Regionals,

Thanks for your continuous support of SmartQueues. I wanted to share some amazing SmartQueues

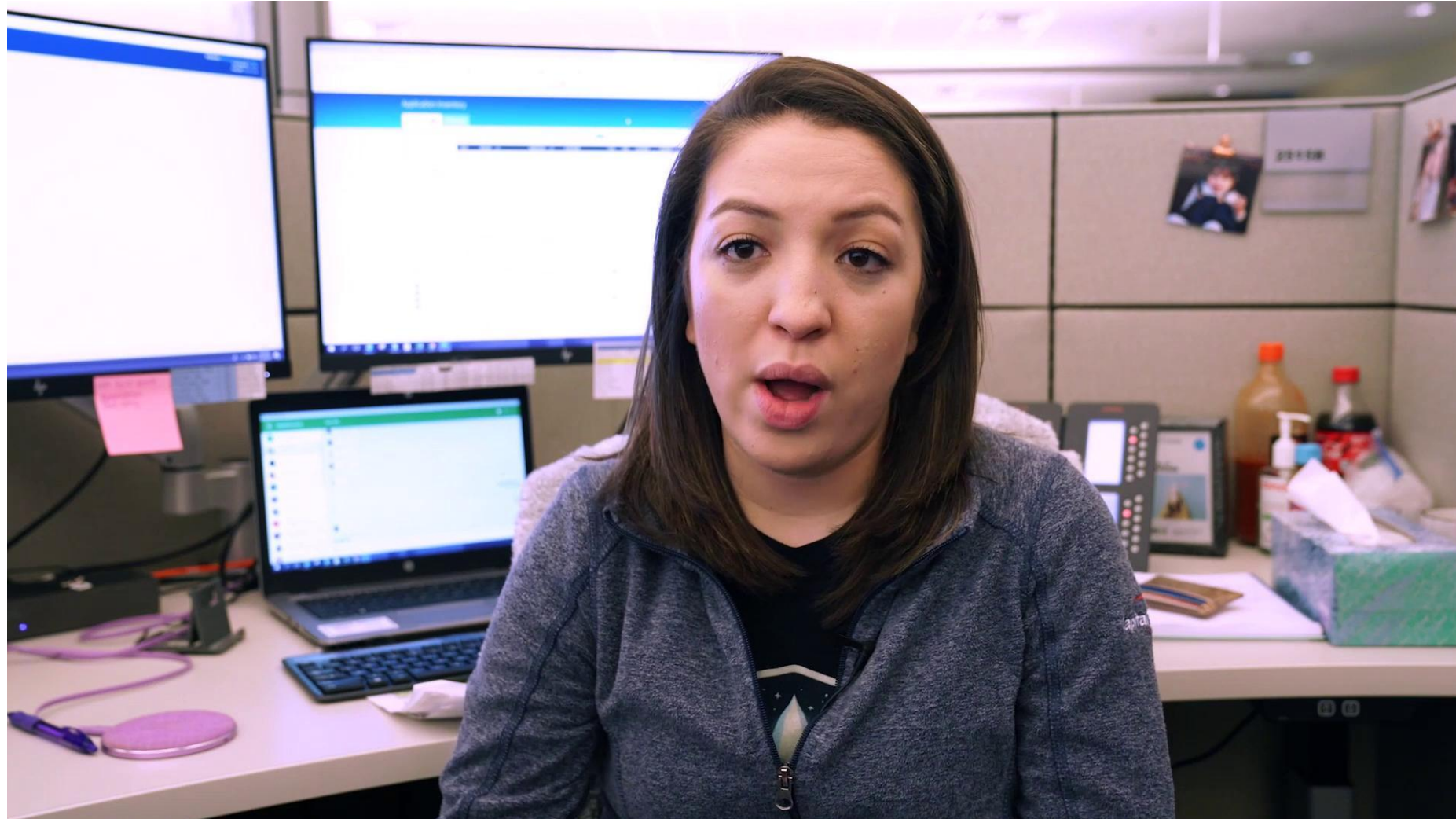
- You have used SmartQueues **91% of the time when you made a proactive call**
- SmartQueues is helping you win **45% of the approvals that you proactively touched**

We are seeing that proactive touch rate is **3.2%**, which is lower than 7-9% that we have seen during activities than expected. However, I wanted to make sure that RMs are clicking on the submitter phone number while proactively reaching out on approval. This way we can correctly track the pr

Attached to this email are two documents:

- 1) SQ Update - Provides the RBC level summary of conversion metrics-**Please share these with you**
- 2) SQ Region wise summary - Provides team level and RM level summary of the metrics. To see metr

# Let's see what RMs are saying



Lets see what RMs are saying

# Recap

- Keep Your Customer Problem Front and Center
- Build the Right Team
- Validate Your Ship-Sinkers Fast and Early
- Balance UX & Data Needs
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# Q&A

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