

# AutoMADEd customer service

## AutoMADEors

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Sam Lin

Lea Petters

Guru Radhakrishnan



## Mentors

MADE<sup>®</sup>

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Karim Zaoui

pivigo

Lucia Chiappara    Monika Ganjoor



*“Bring high-end lifestyle design to everyone, everywhere at a fair price.”*



### Rapid growth

+40% sales in 2018

Active in 12 countries



### Unique business model

Online shop only

No middlemen

# MADE<sup>+</sup>

*“Bring high-end lifestyle design to everyone, everywhere at a fair price.”*



## Rapid growth

+40% sales in 2018

Active in 12 countries



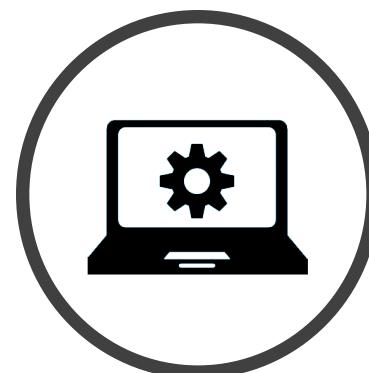
## Unique business model

Online shop only

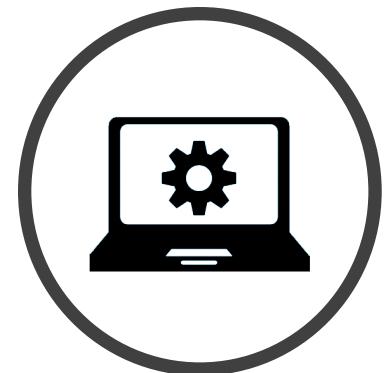
No middlemen

Customer service is the only channel of customer interaction

# Can data science improve customer service?



# Can data science improve customer service?



Automating customer service emails

# MADE<sup>+</sup> customer service

## Template 1 > 2 > 3

When you need to say no or give disappointing news



1

Options  
Something constructive  
A way forward  
Empathy

2

What you're not able to do  
Avoid roadblocking language

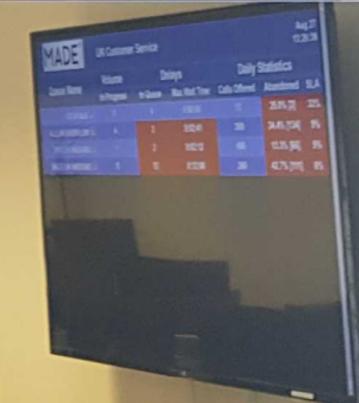
3

Benefits of what you offered in Step 1  
Next steps  
Additional solutions  
Empathy

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TG Mary Golee

# MADE



MADE.COM  
Summer  
Sale.  
Yes.  
Please.  
BALI UP TO 40%

# Current status of customer service

**2,300**  
incoming queries  
per day

**800**  
Email queries per day

## Template 1 > 2 > 3

When you need to say no or give disappointing news



1

Options  
Something constructive  
A way forward  
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What you're not able to do  
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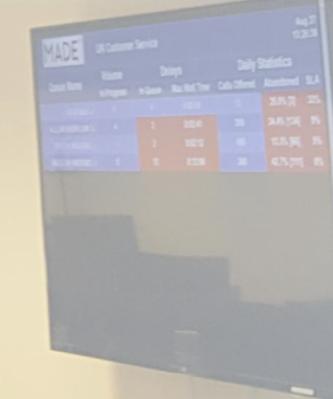
3

Benefits of what you offered in Step 1  
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MADE



MADE.COM  
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Yes.  
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SALE UP TO 40%

# Current status of customer service

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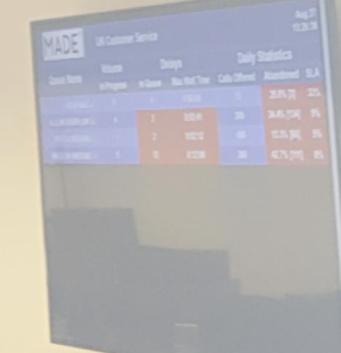
**800**  
Email queries per day

**Template 1 > 2 > 3**  
When you need to say no or give disappointing news



**2 days**  
average time  
to first reply

- 1**  
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Empathy
- 2**  
What you're not able to do  
Avoid roadblocking language
- 3**  
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Sale.  
Yes.  
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Email queries per day

**2 days**

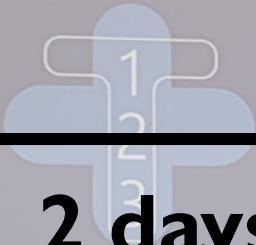
average time  
to first reply

**41%**

of emails  
solved  
in one reply

**Template 1 > 2 > 3**

When you need to say no or give disappointing news



**1**

Options  
Something constructive  
A way forward  
Empathy

**2**

What you're not able to do  
Avoid roadblocking language

**3**

MADE.COM  
Summer  
Yes.  
Please.  
SALF UP TO 40%

# An easy customer service interaction

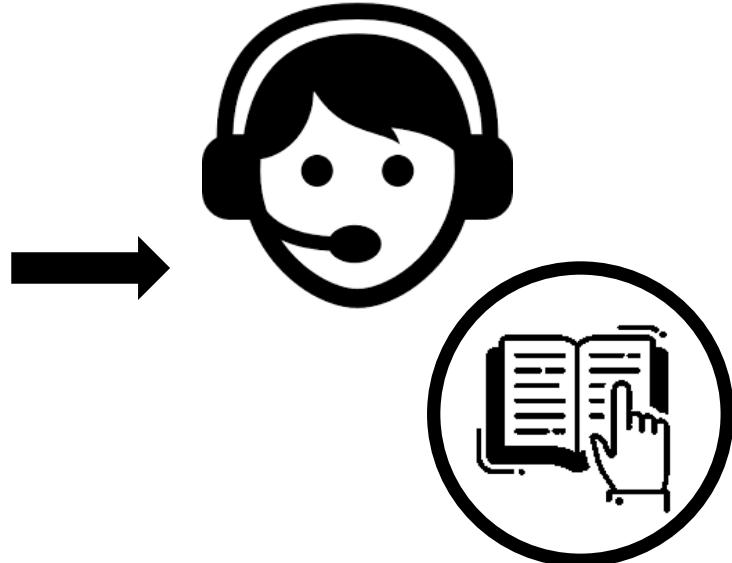
Dear CS Team,  
Can you please, tell  
me:

**Where is  
my order?**

Thanks!  
Best regards,  
S. Lin

# An easy customer service interaction

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# An easy customer service interaction

Dear CS Team,  
Can you please, tell  
me:  
**Where is  
my order?**  
Thanks!  
Best regards,  
S. Lin



Dear S. Lin,  
Thank you very much for  
your email.  
I just looked up the  
scheduled delivery date  
for your order.  
**Your order  
should arrive  
this Friday,  
Sept. 06 2019.**  
Best regards,  
Cindy on behalf of  
MADE.COM CS Team

# A difficult customer service interaction

Dear CS Team,

My order **arrived late**. Several things  
**were broken** and  
the delivery driver's  
shoes were super  
dirty and **ruined**  
**my carpet!!**

I am very angry about  
that!

Best regards,  
S. Lin

# A difficult customer service interaction

Dear CS Team,

My order **arrived late**. Several things **were broken** and the delivery driver's shoes were super dirty and **ruined my carpet!!!**

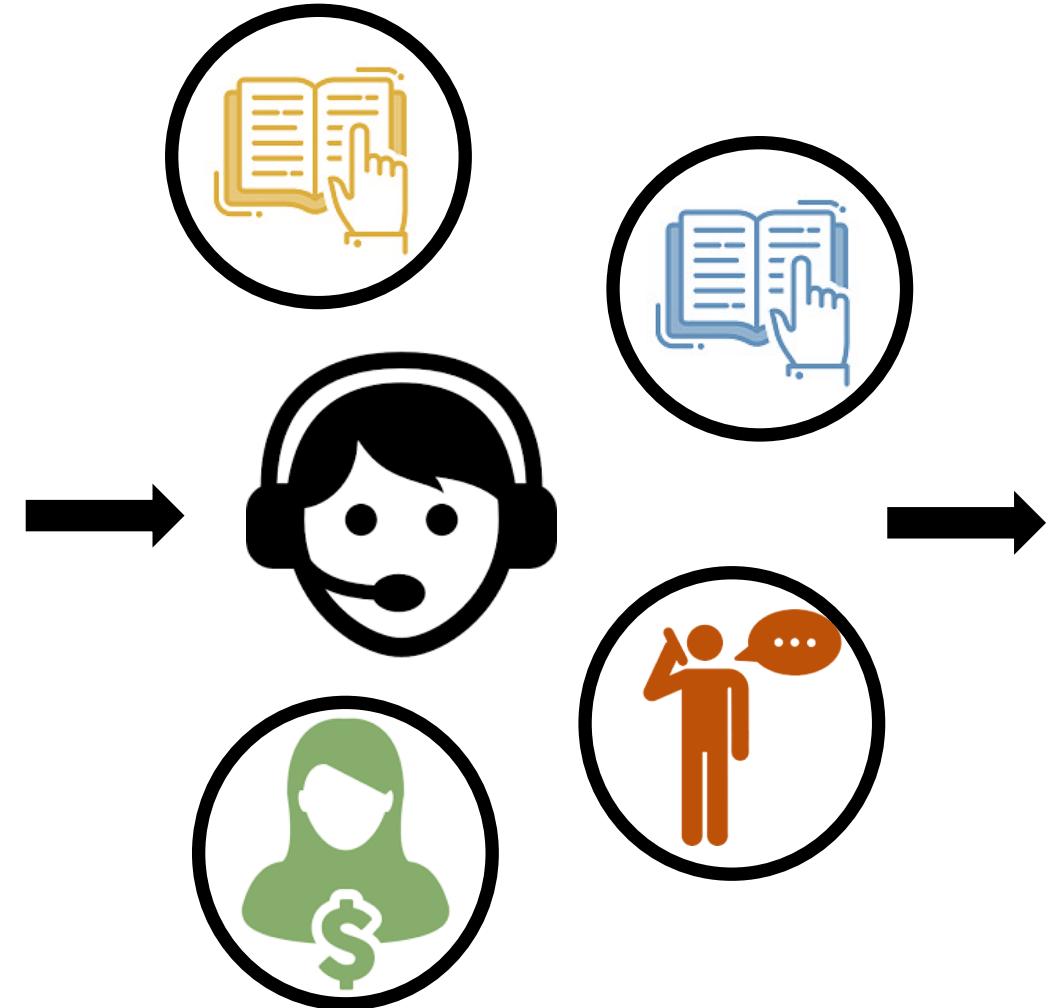
I am very angry about that!

Best regards,  
S. Lin



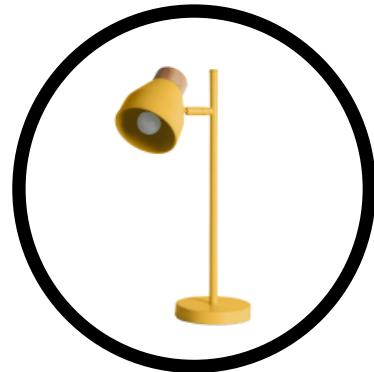
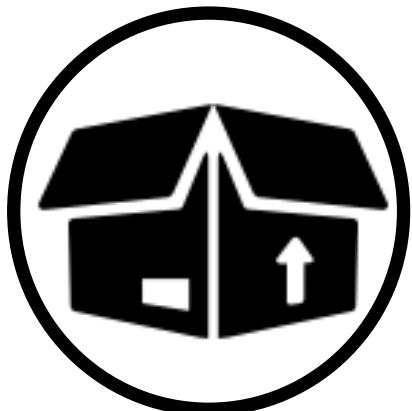
# A difficult customer service interaction

Dear CS Team,  
My order **arrived late**. Several things  
**were broken** and  
the delivery driver's  
shoes were super  
dirty and **ruined**  
**my carpet!!!**  
I am very angry about  
that!  
Best regards,  
S. Lin



Dear S. Lin,  
Thank you very much for  
your email.  
I am very sorry to hear  
that your experience was  
not entirely positive. This  
is below our standards. I  
would like to offer you  
some **compensation**  
[...]  
Cindy on behalf of  
MADE.COM CS Team

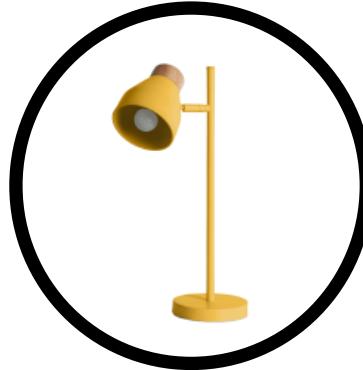
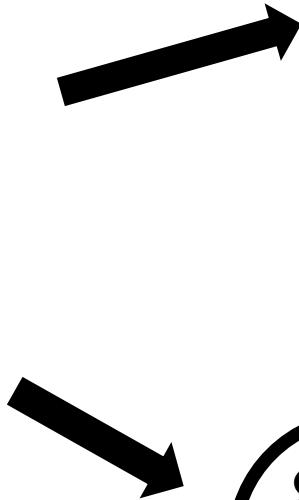
...responding to emails is like assembling furniture



...responding to emails is like assembling furniture



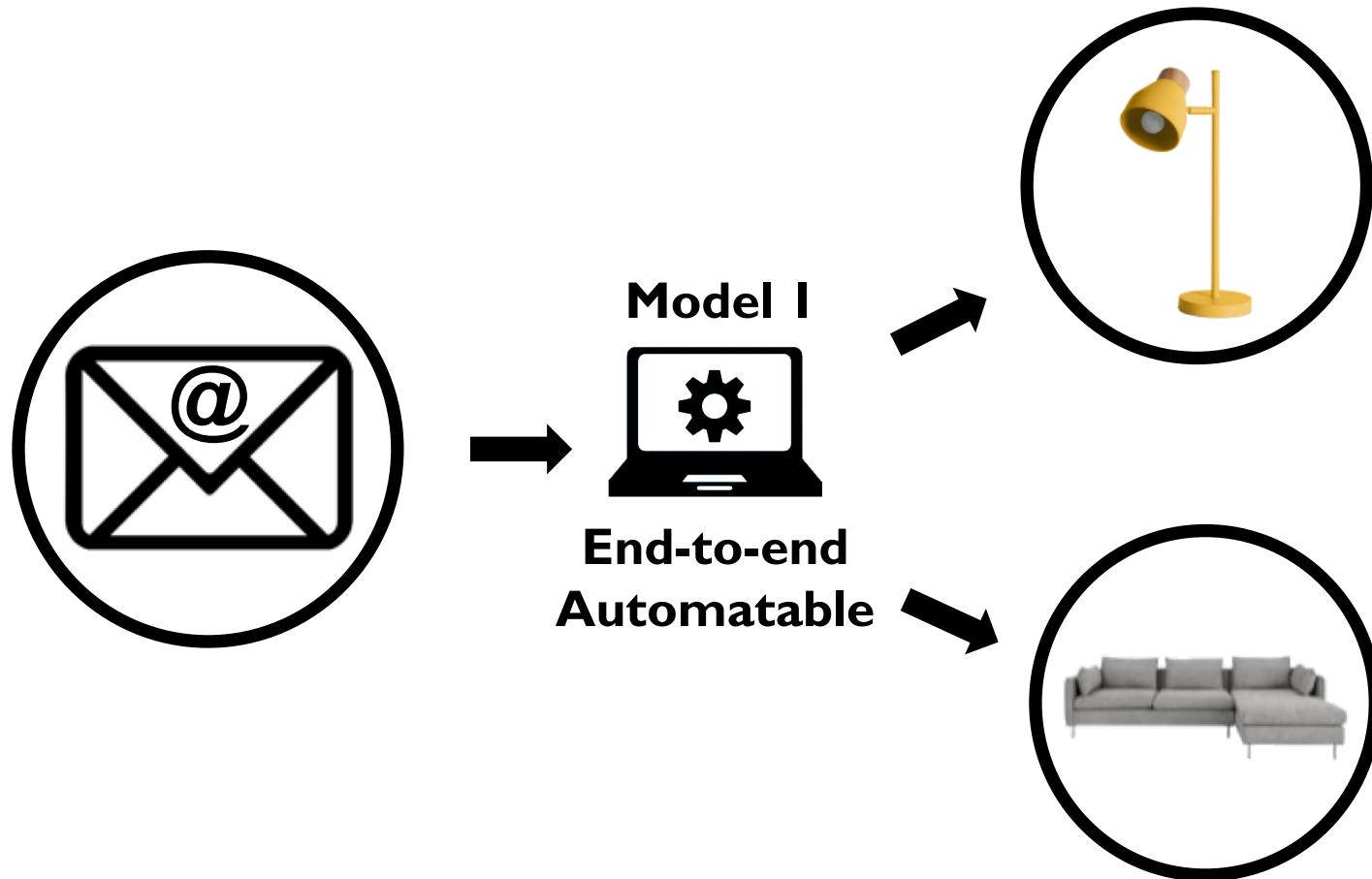
...responding to emails is like assembling furniture



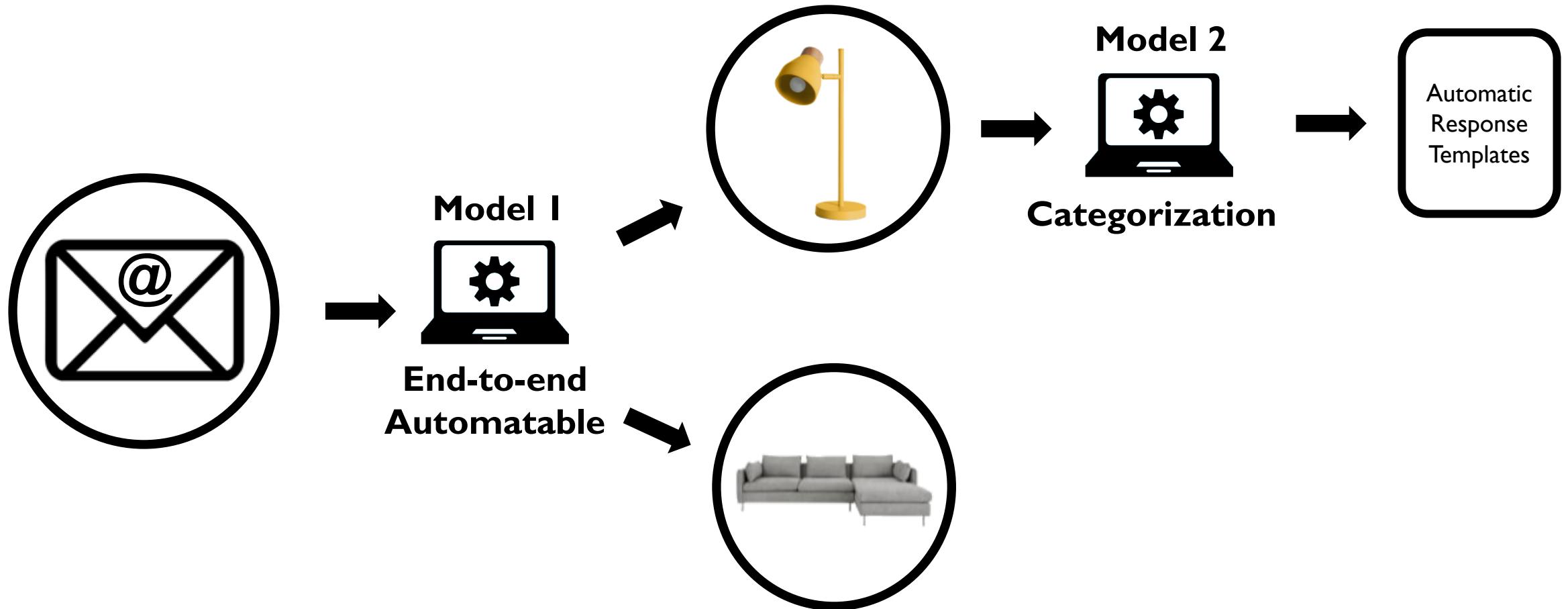
# Our framework to automate customer service



# Our framework to automate customer service



# Our framework to automate customer service



# Components we used to build our framework



## Unstructured datasets

- Correspondences between customer and CS
  - 17M datapoints
  - 6 months of data
  - 46,000 emails

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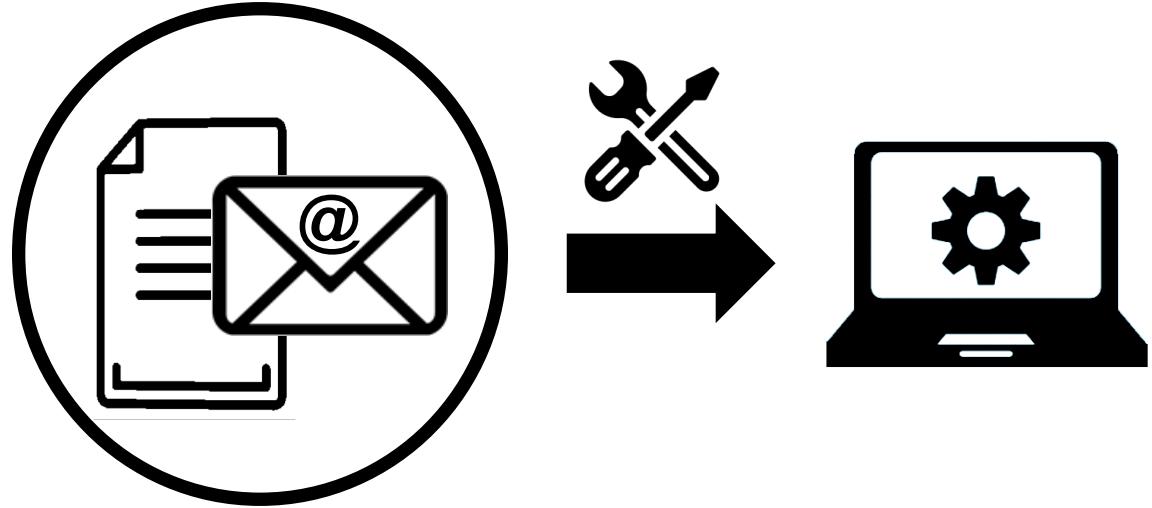


## Structured datasets

- Customer information
- Order information
- 6 months of data

# An exciting and challenging project

- Unstructured datasets
- Text to numbers
  - Natural language processing
- 100+ possible categories
- Easy-to-classify does not mean easy-to-automate

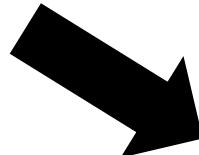
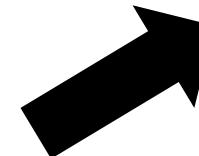
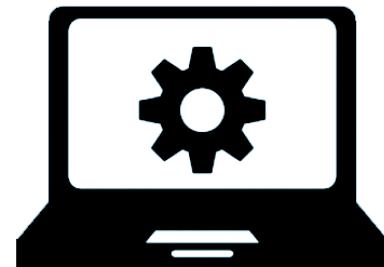


# Model I - Automatability classification

Email body features

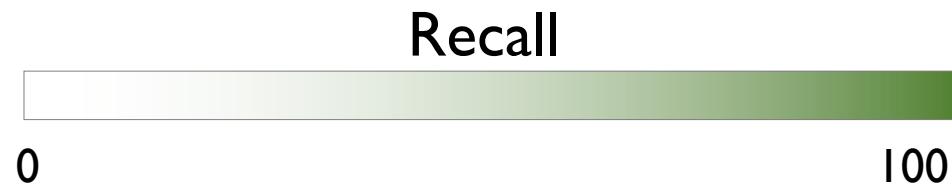


End-to-end  
automatable?



Numerical email features

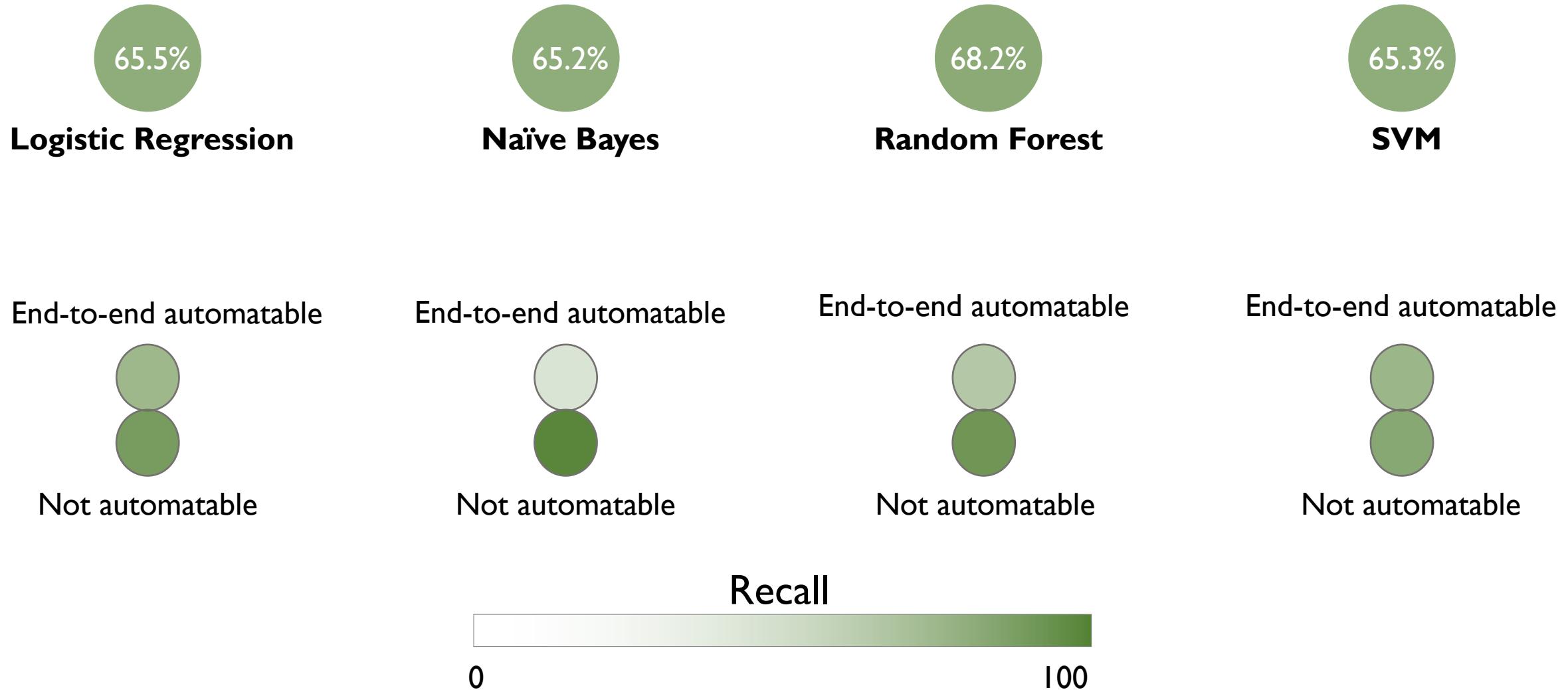
# How does our automatability classifier perform?



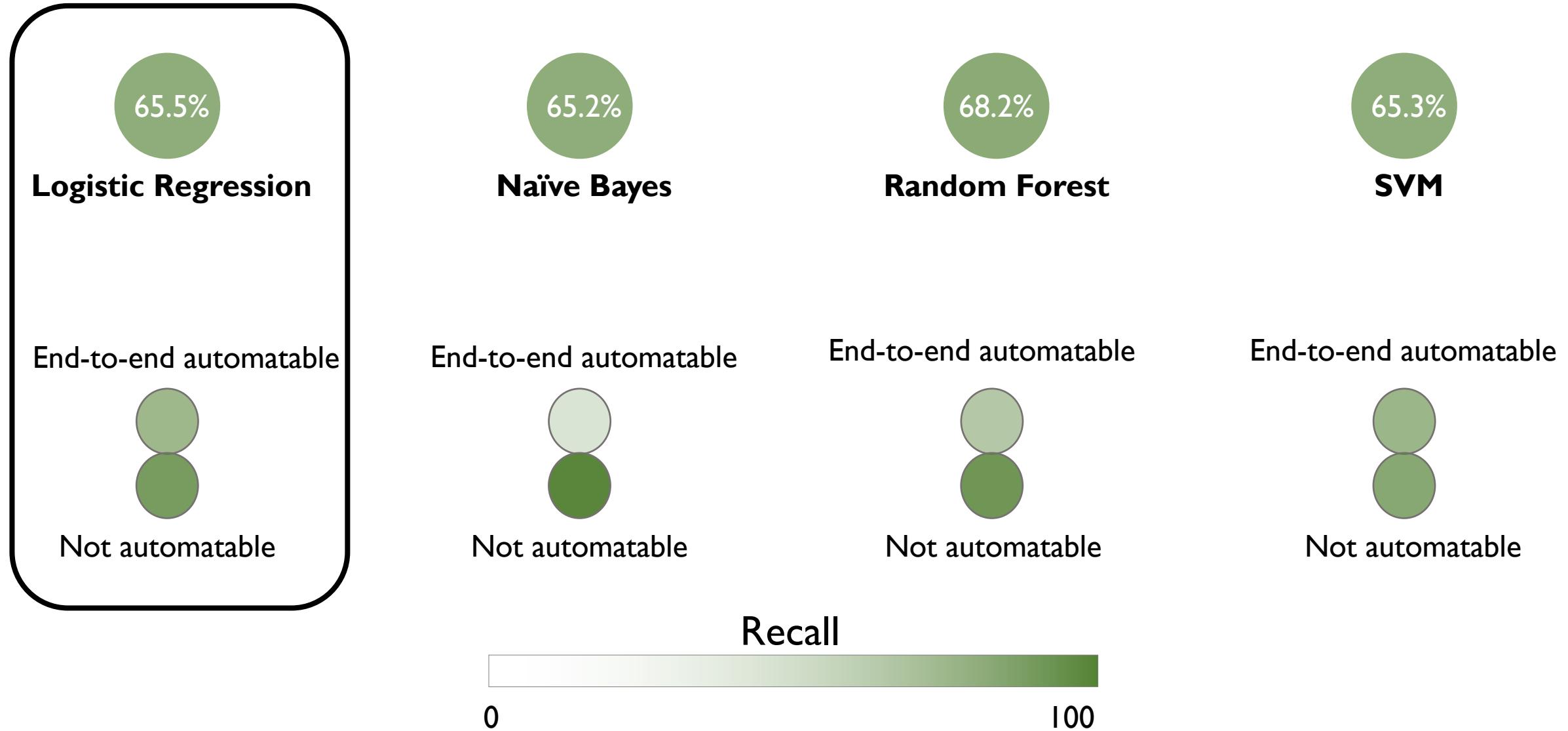
# How does our automatability classifier perform?



# How does our automatability classifier perform?



# How does our automatability classifier perform?



# Automatability classification examples



## End-to-end automatable

*“I still haven’t received my order from last week, can you please tell me where it is?”*

# Automatability classification examples



## End-to-end automatable

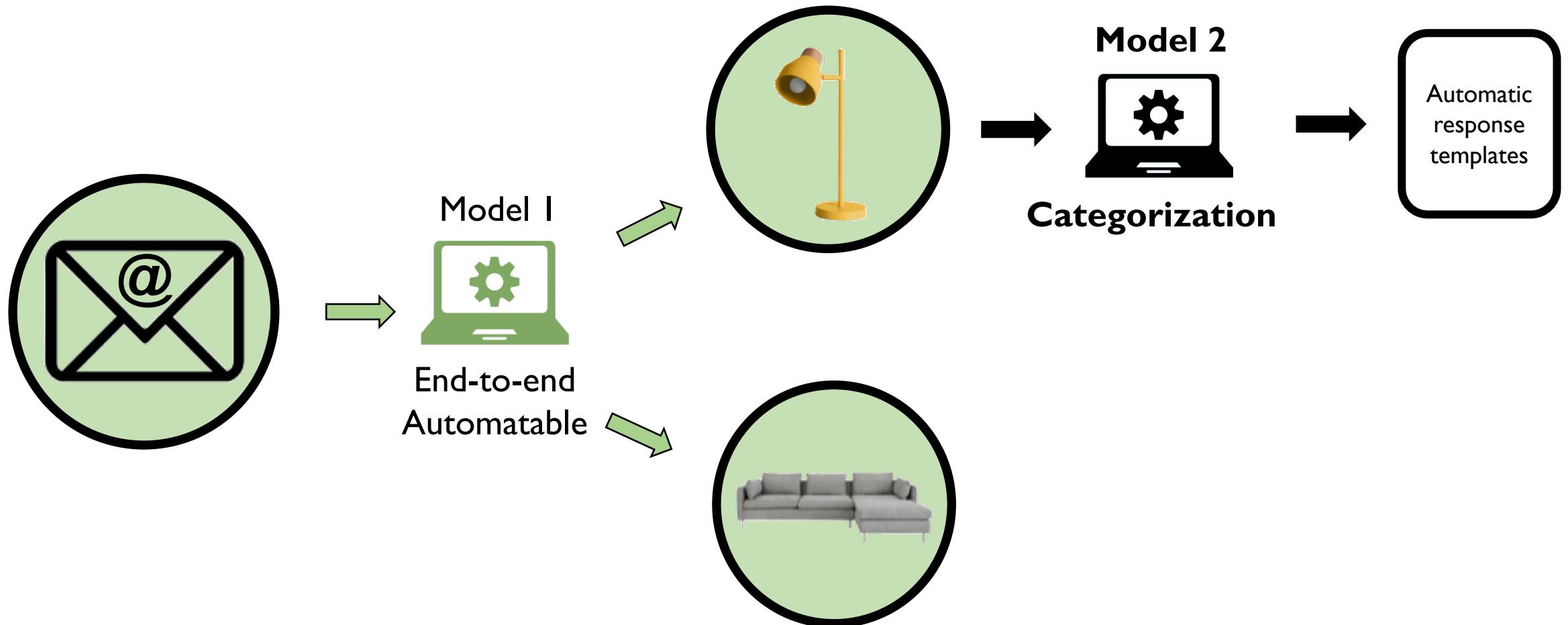
*“I still haven’t received my order from last week, can you please tell me where it is?”*



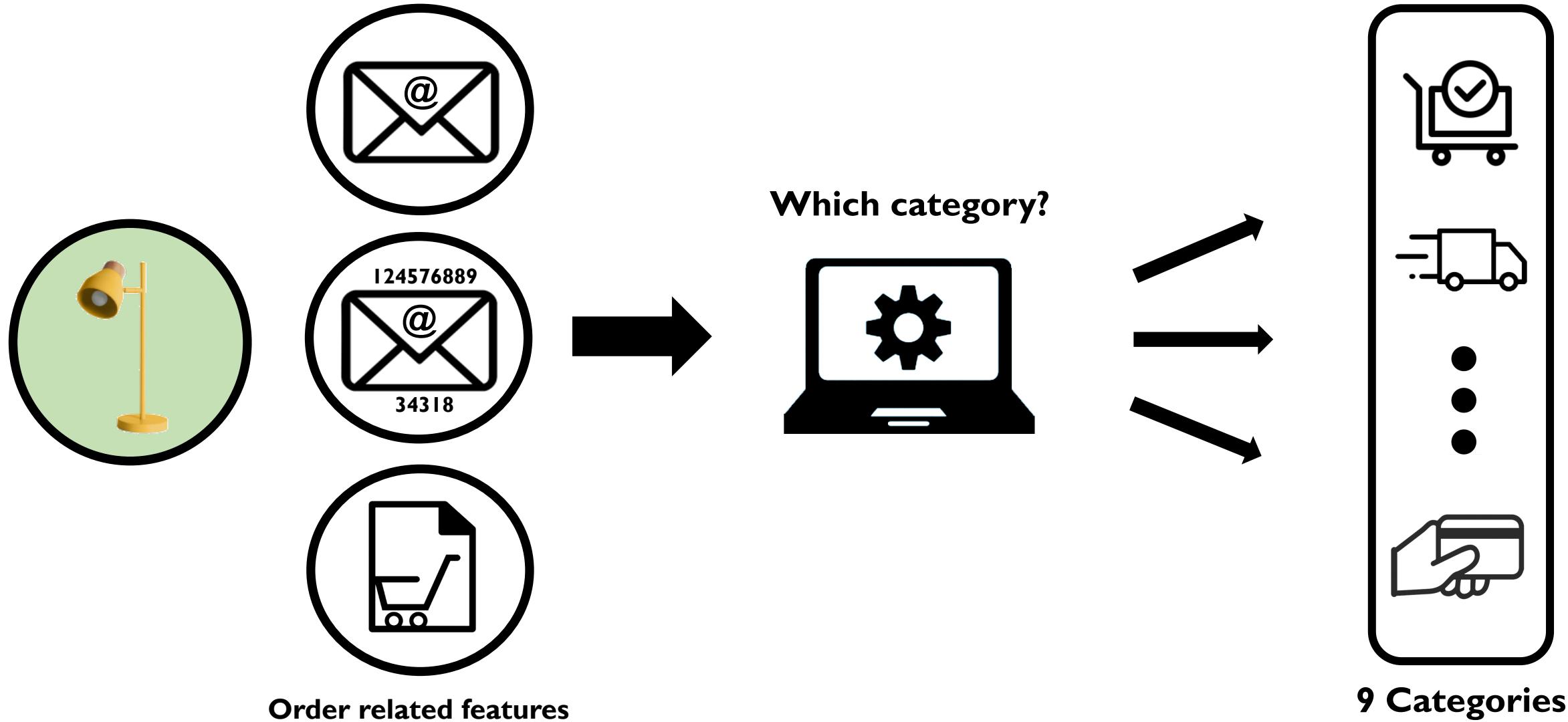
## Not automatable

*“The automatic bin I ordered is not opening. We changed the batteries, but it still seems to be faulty. Is it possible to send a replacement?”*

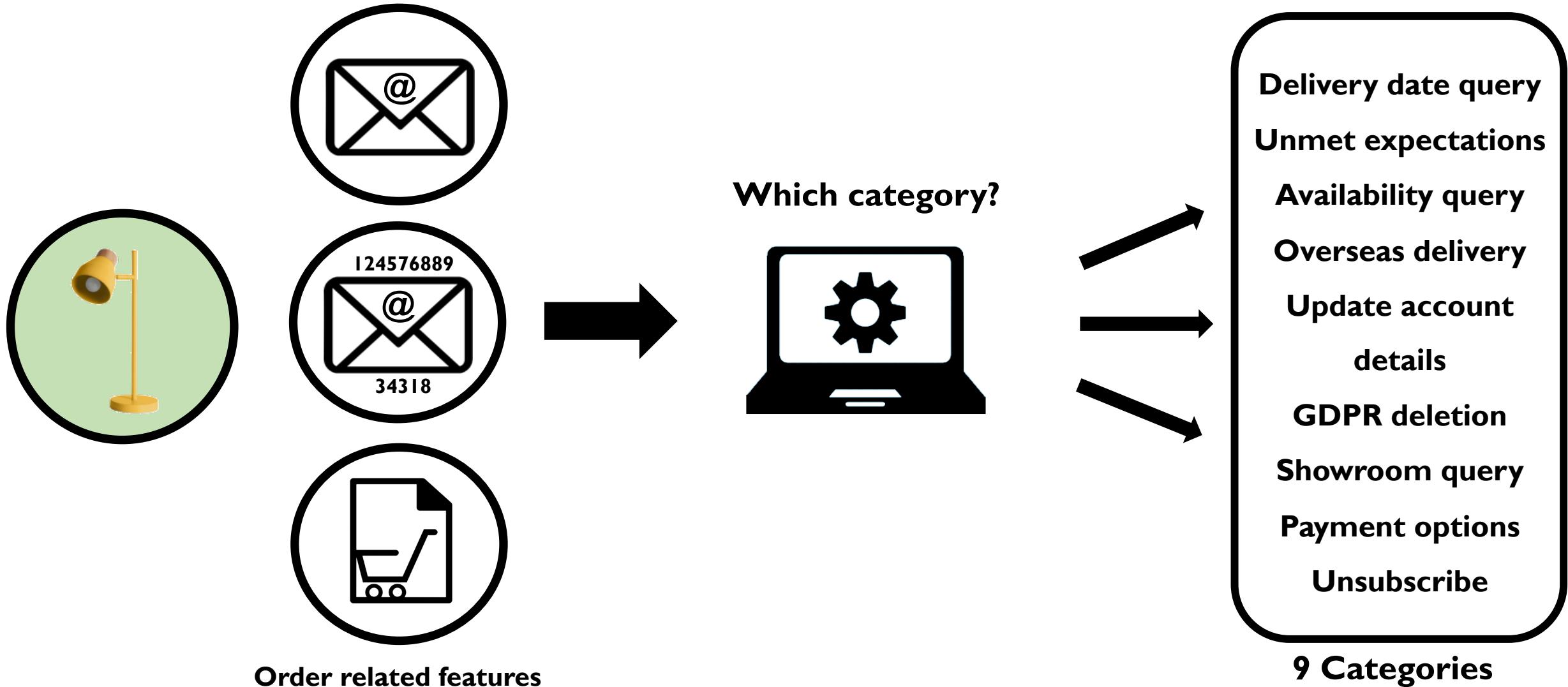
# Our framework to automate customer service



# Model 2 - Email category classification



# Model 2 - Email category classification



# How does our email category classifier perform?



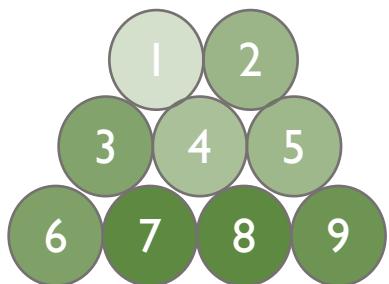
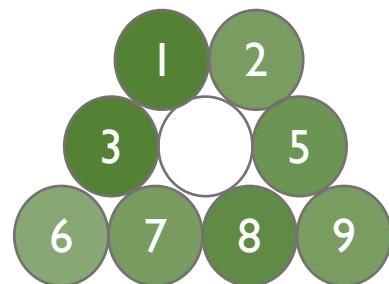
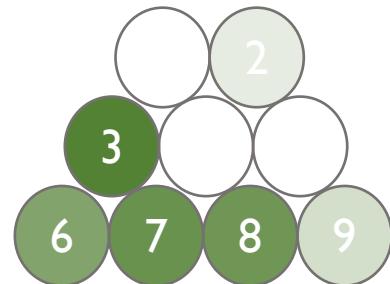
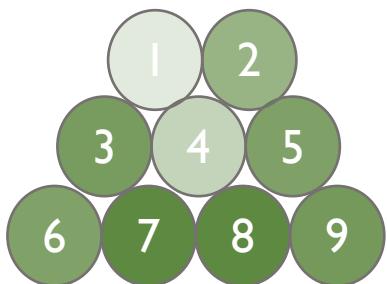
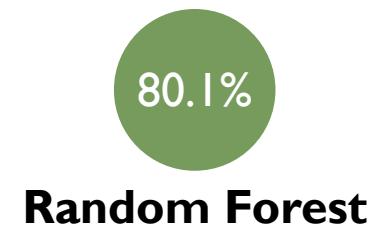
# How does our email category classifier perform?



Precision



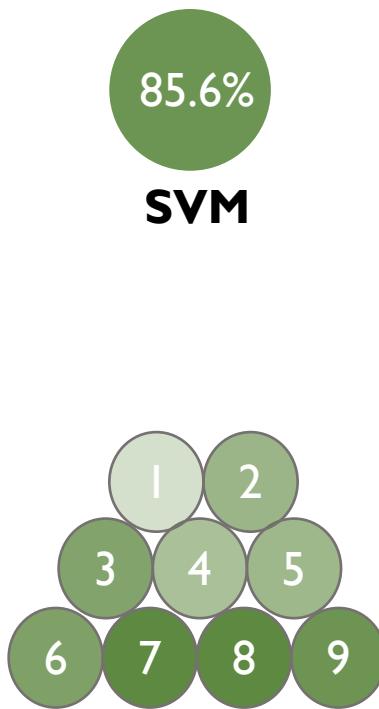
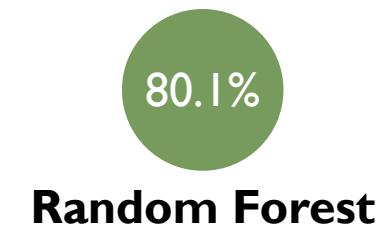
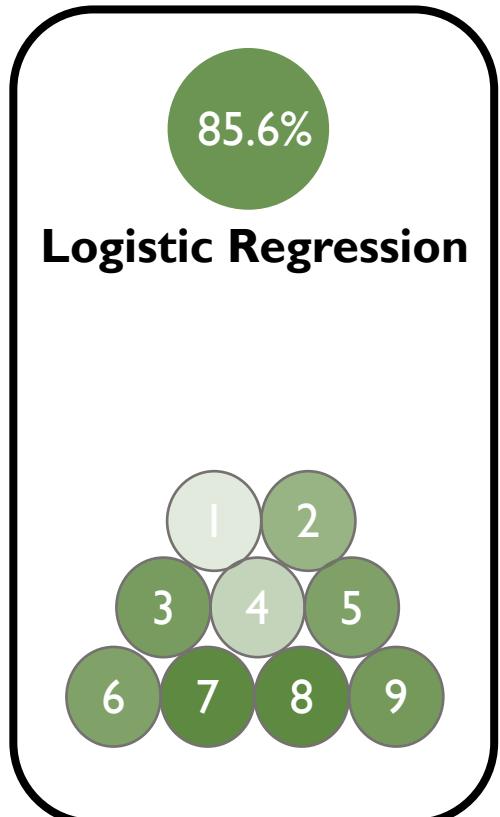
# How does our email category classifier perform?



Precision across all nine categories



# How does our email category classifier perform?



Precision across all nine categories



0

100

# Classification examples



## Overseas Delivery

*“I write you to know if you deliver a sofa also in Italy?”*

# Classification examples



## Overseas Delivery

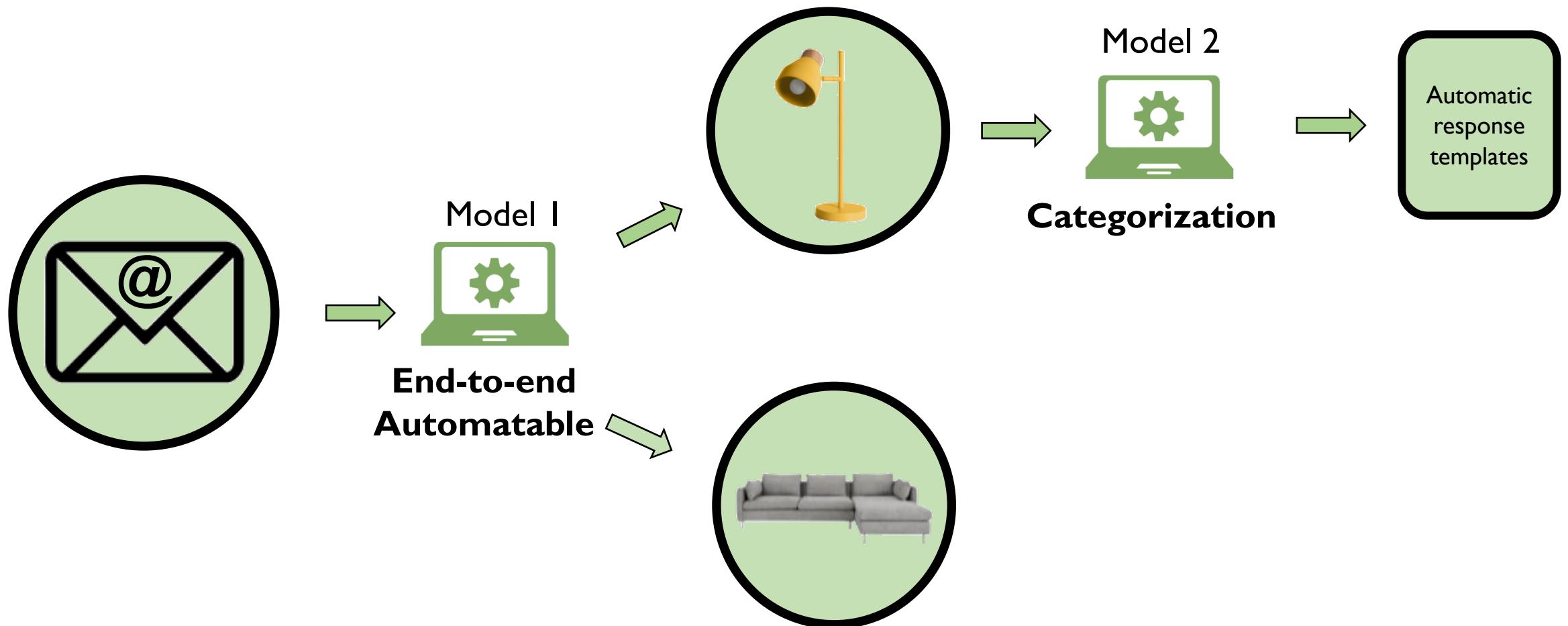
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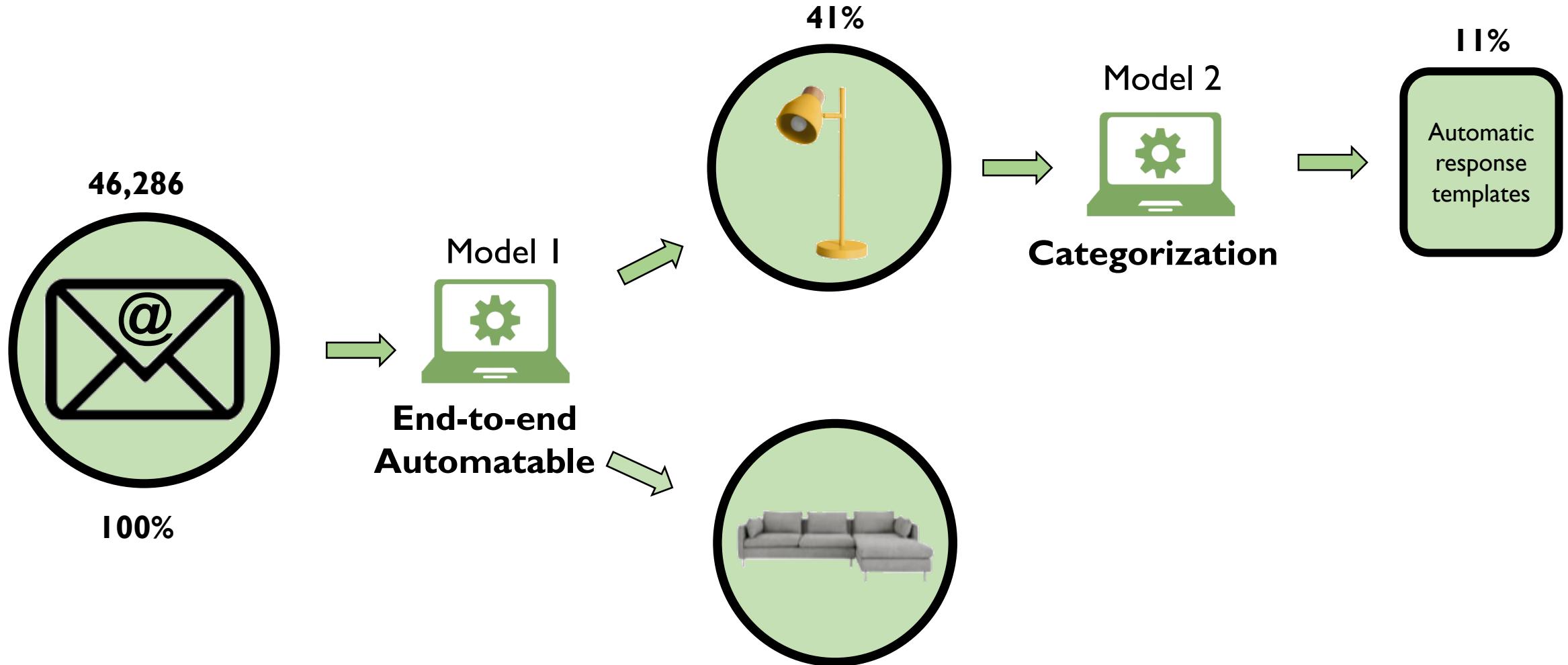
## Availability Query

*“I am looking at buying Monty dining table. Is it currently available in stock?”*

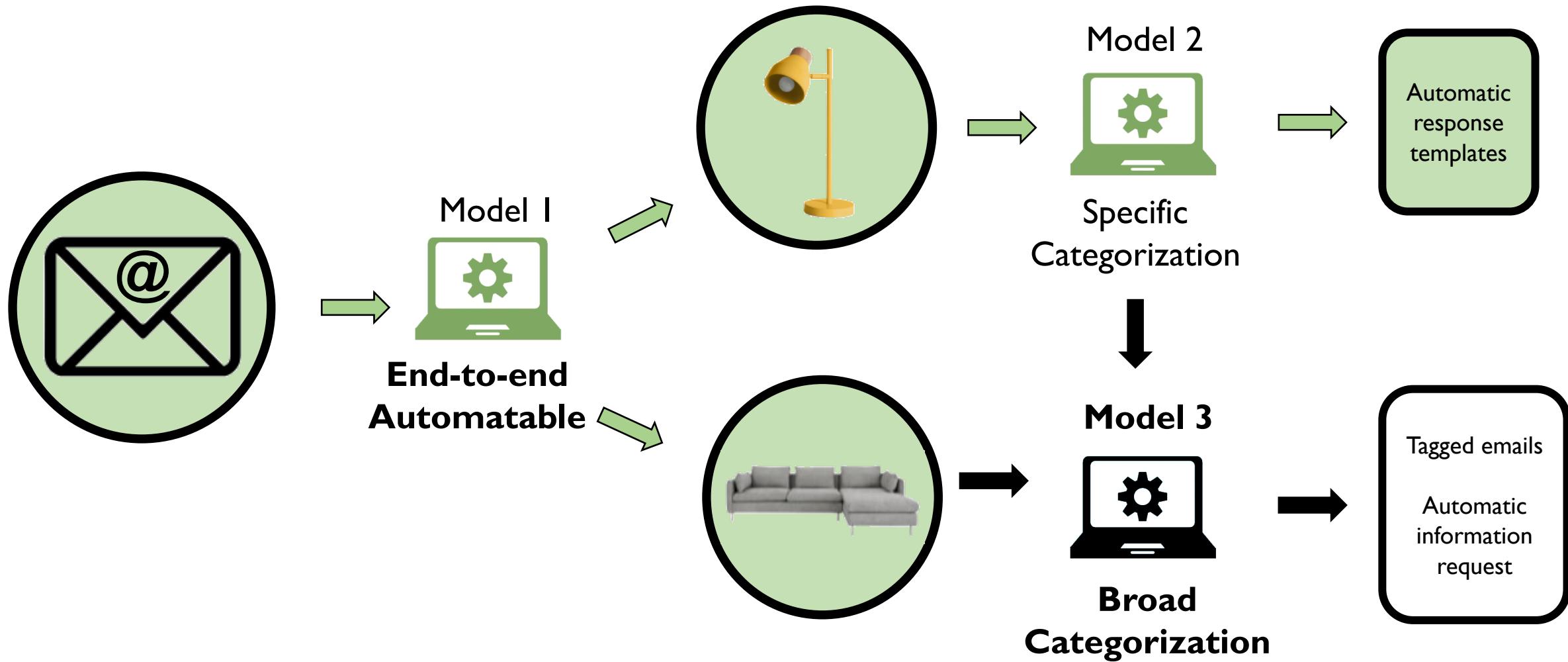
# Our framework to automate customer service



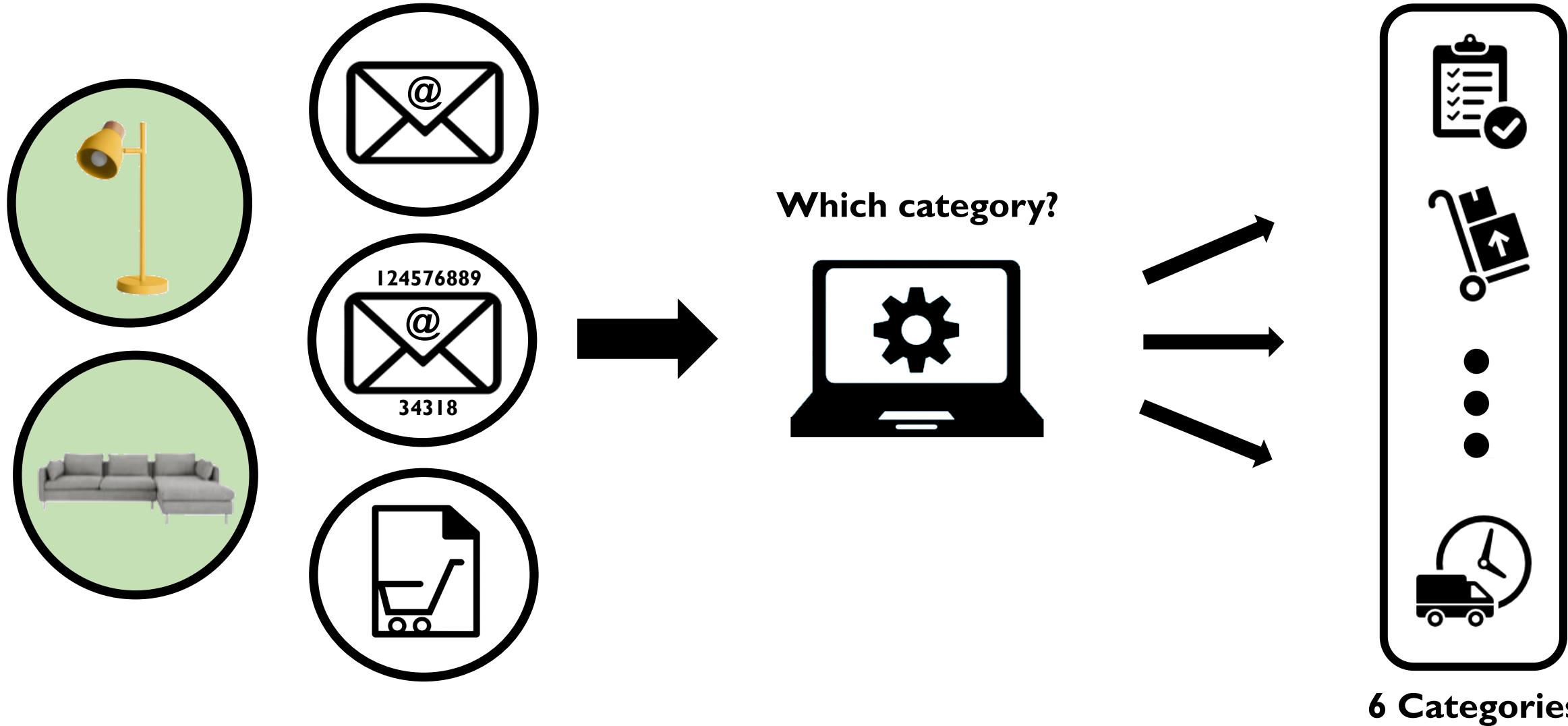
# Our framework to automate customer service



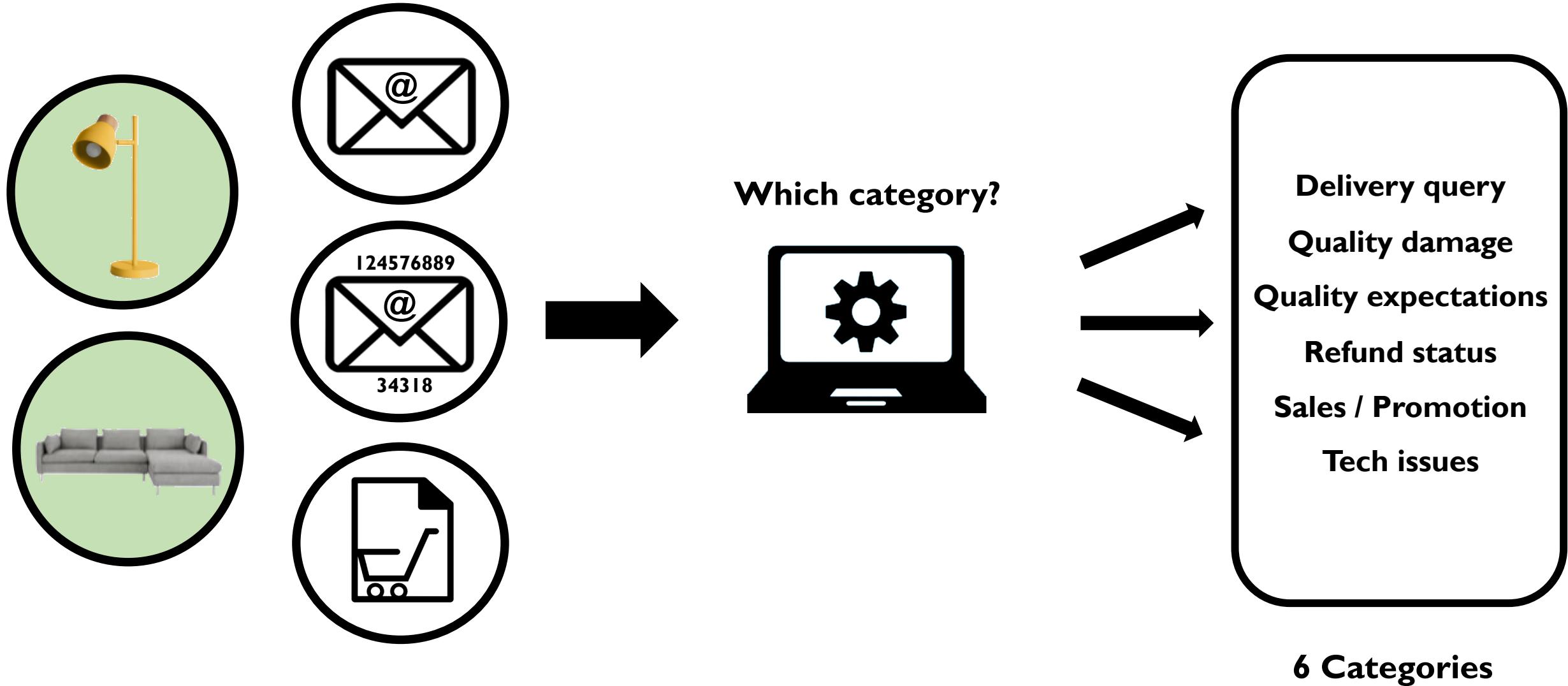
# Our framework to optimise customer service



# Model 3 – Broad email category classification



# Model 3 – Broad email category classification



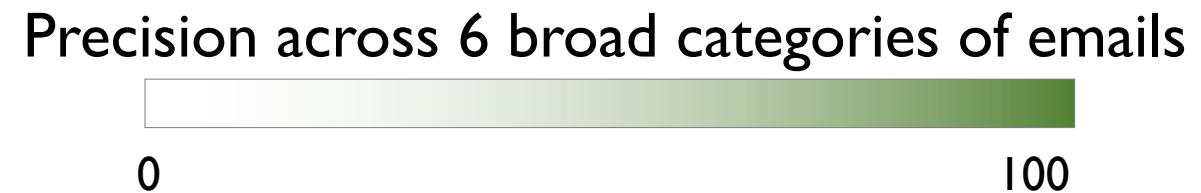
# How does our broad classifier perform?



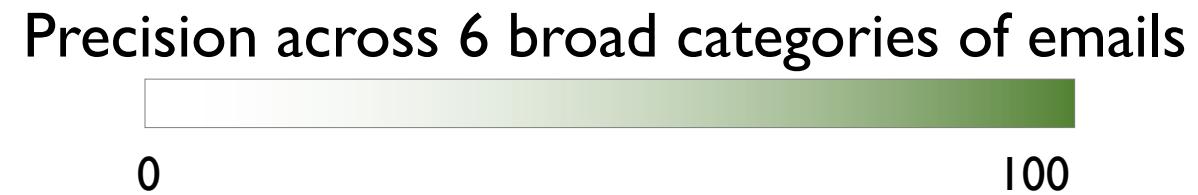
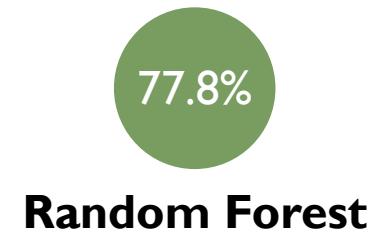
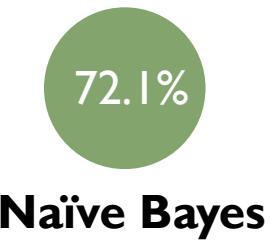
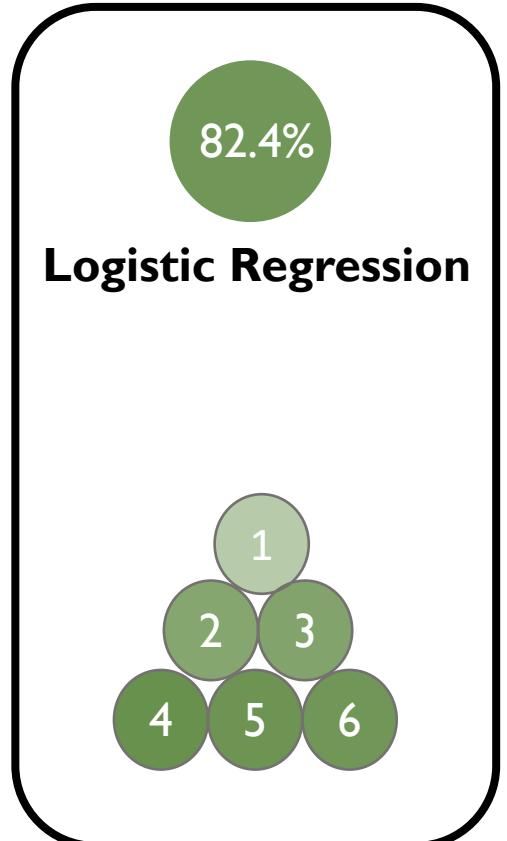
# How does our broad classifier perform?



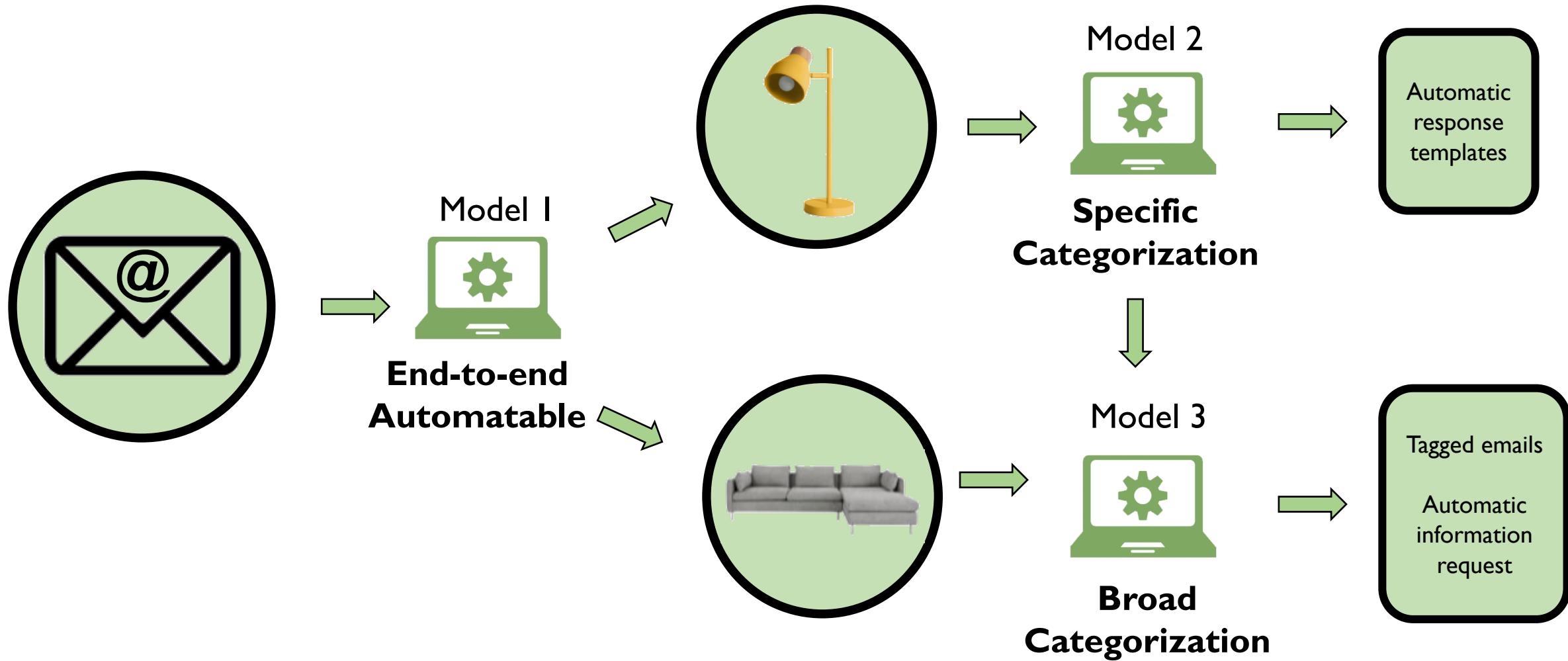
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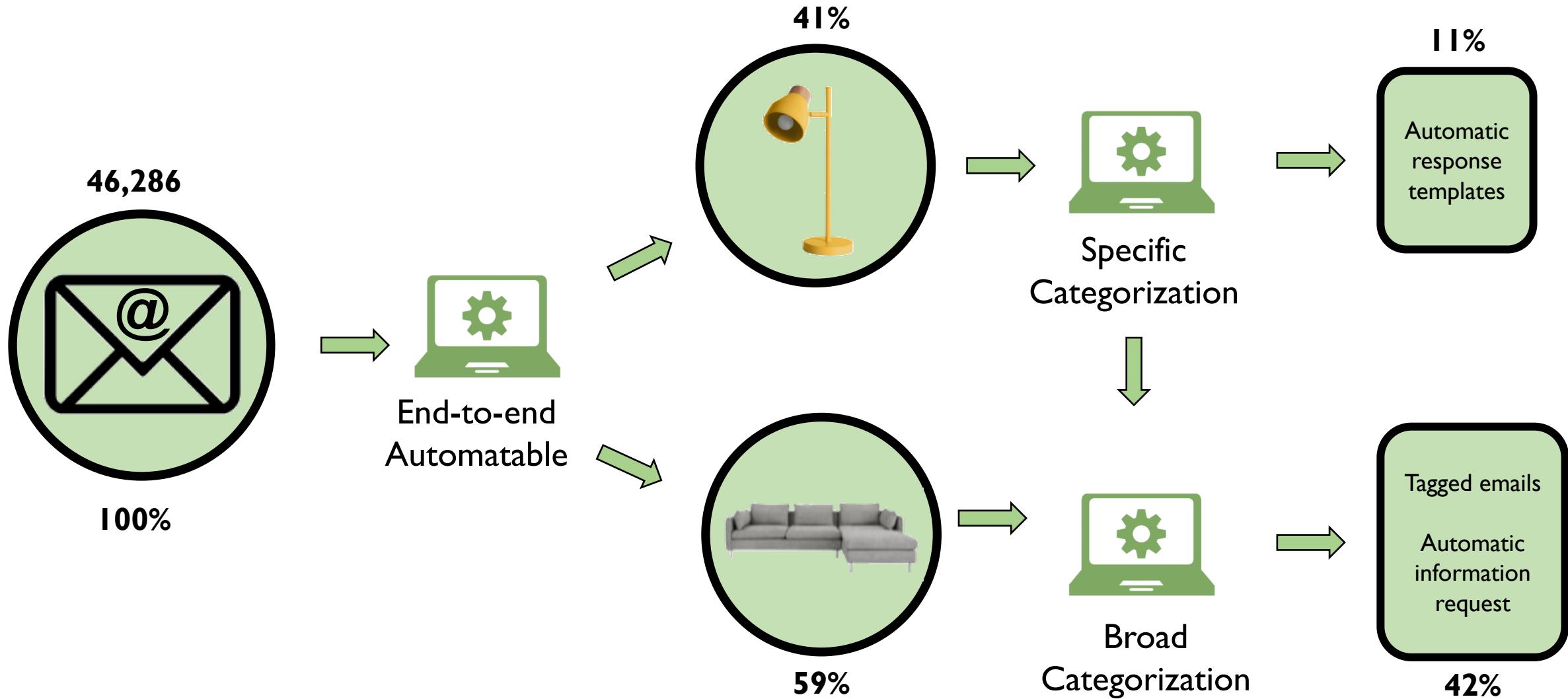
# How does our broad classifier perform?



# Our framework to optimise customer service



# Our framework to optimise customer service



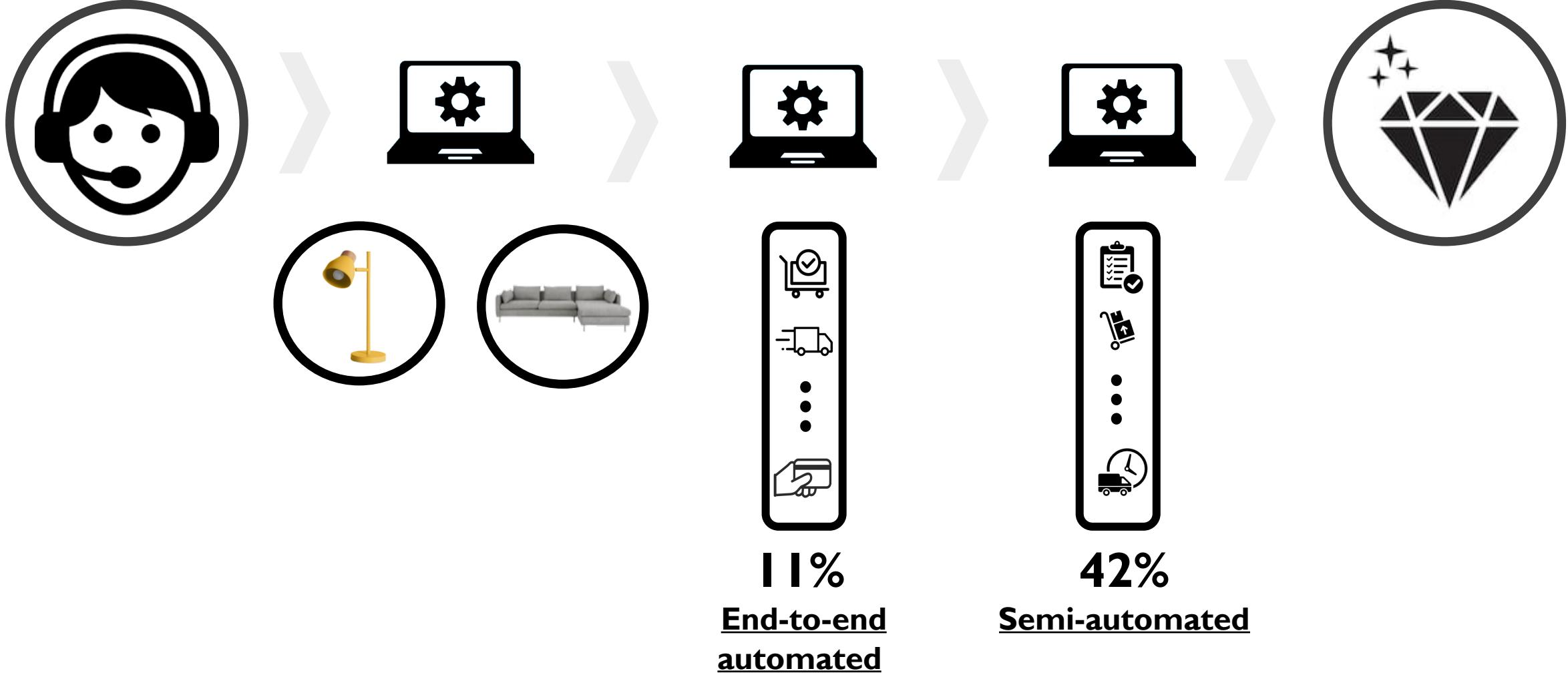
# Teamwork MADE the dream work!



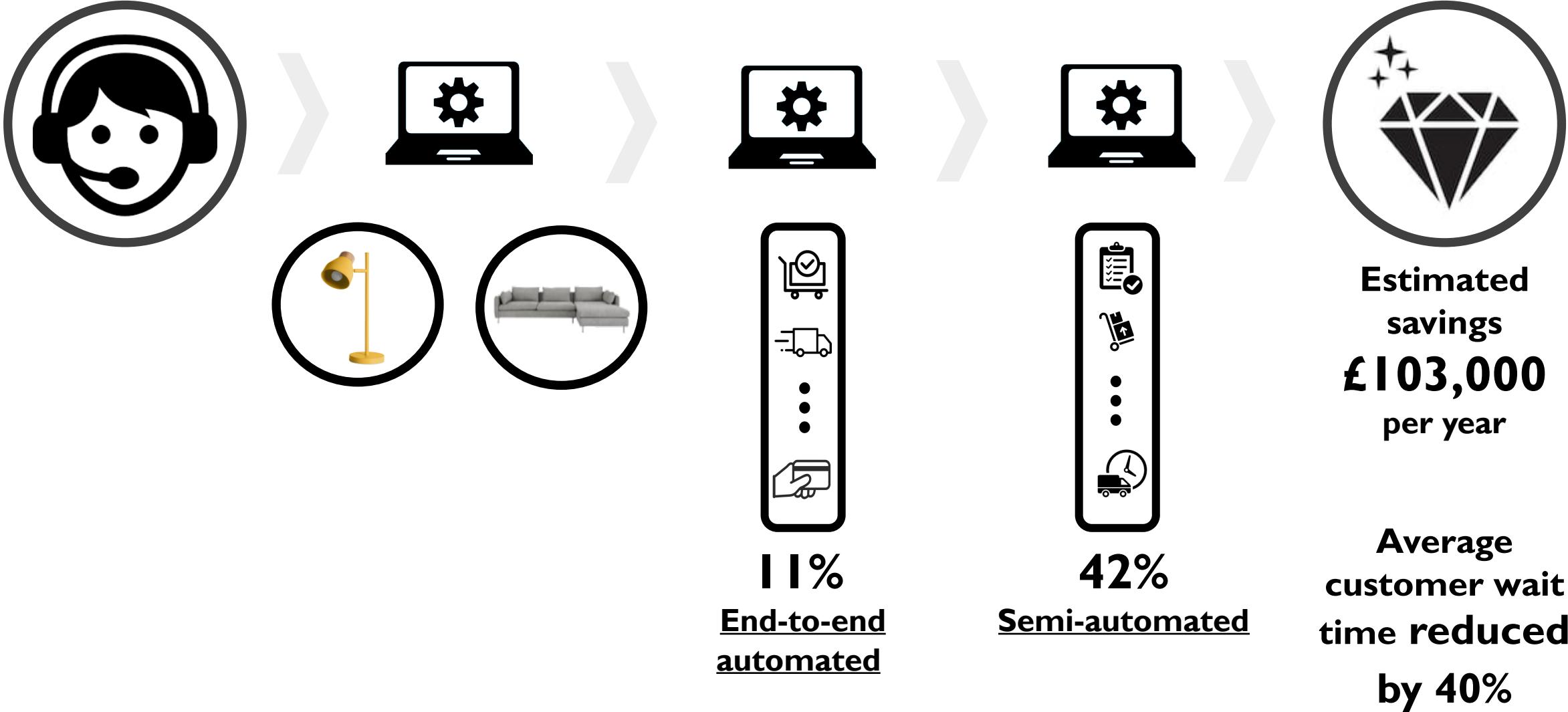
YES,  
AND!



# Summary



# Summary





⊕  
Thank  
you!  
⊕