AI for CRM –
One small step for machines
One giant leap for mankind

MICHAEL NATUSCH
Global Head of Artificial Intelligence
Prudential
Building an AI-first world

“ML is a core, transformative way by which we’re rethinking how we’re doing everything.”
Sundar Pichai, Google

“We need to make AI be so completely part of our engineering fabric that you take it for granted.”
Joaquin Candela, Facebook

"AI is the new electricity!" Electricity transformed countless industries; AI will now do the same.

Andrew Ng
@AndrewYNg
what are we trying to build?
Automating what Actions?

**Lead to Cash**
- Customer acquisition
- Up/cross-selling
- Customer retention
- Cash collection

**Trouble to Resolve**
- Customer feedback
- Customer service
- 1st line complaint handling
- Claims management

**Concept to Market**
- Product ideas/ improvements
- Fraud detection
- Risk understanding by experience
How can we drive actions?

data + intelligent agent + UI → UX → Action

learning loop
Our UX – The (wo)man from the Pru

UI

intelligent agent

data
But what about…

• **Industrialization**
  – scalability
  – availability
  – repeatability

• **Customer Experience**
  – right first time
  – consistency
  – cycle times
  – customer satisfaction

• **Automated Learning**

  augment and/or automate where possible & desirable human based UX with software-driven experiences
How can we build this?

- data
- intelligent agent
- UI
- UX

Learning loop

→ Action
what’s the value of data?
data

more users

powered by AI

better product experience

more data

improved model
what algorithm when??
Source: Wolfgang Ertel, "Introduction to Artificial Intelligence", Springer Verlag, 2011
what algorithm when??

unit cost
($/transaction)

volume
(# transactions)

Hospital

probabilistic
graphical
models

need causation

gradient-boosted
decision trees

deep
learning

correlation is good enough

Google
choosing the most appropriate UI
choosing the most appropriate UI

user relevance
- frequency
- importance
- design

web apps

institutional customers

agents/brokers

mobile apps

portfolio customers

games

occasional users

bots

notifications

messenger platforms

task specificity
who wants to talk to a robot?
who wants to talk to a robot?

Penetration

<table>
<thead>
<tr>
<th></th>
<th>55-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Phone</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Web</td>
<td>55-64</td>
<td>65+</td>
</tr>
<tr>
<td></td>
<td>74%</td>
<td>39%</td>
</tr>
<tr>
<td>Social</td>
<td>55-64</td>
<td>65+</td>
</tr>
<tr>
<td></td>
<td>48%</td>
<td>29%</td>
</tr>
</tbody>
</table>
reality check
reality check – e.g. speech recognition

Source: “Achieving Human Parity In Conversational Speech Recognition” Microsoft Research Technical Report MSR-TR-2016-71
combine algorithms for accuracy

- True Positive Rate
- True Negative Rate

- dual
  - 76%

- single
  - 61%

perfect accuracy
what are we trying to build?
what are we trying to build?

- data
- intelligent agent
- UI

UX

→

Action

learning loop
so, any progress @ Pru?
so, any progress at the Pru?

unit cost
($/transaction)

20-75% automation

+£1m AUM/wk

94% automation @ 76% accuracy

volume
(# transactions)
thank you
Take aways

• think of the electricity analogy
• get the data flywheel going now
• build automated learning loops
Thank you

@cumulyst