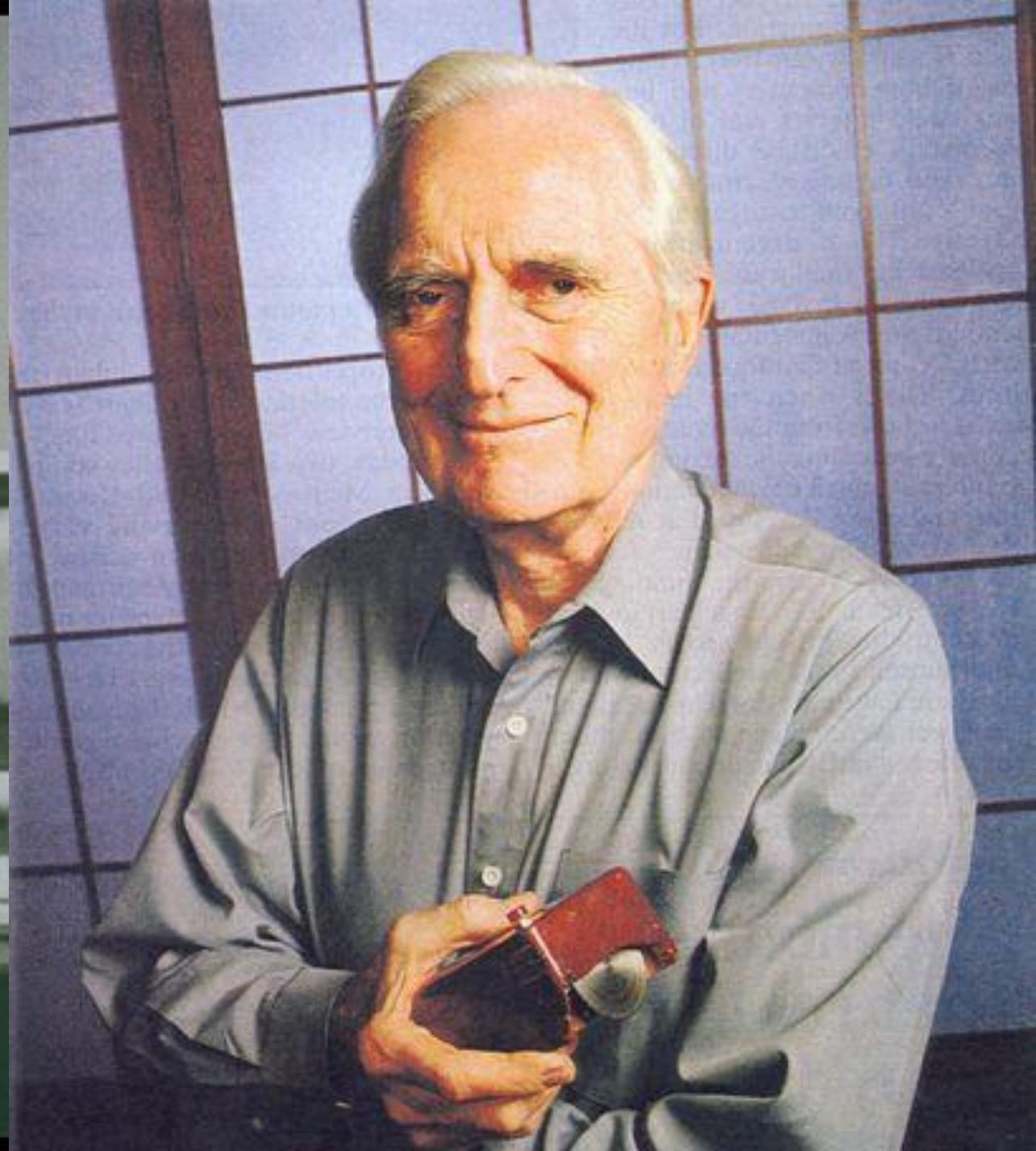
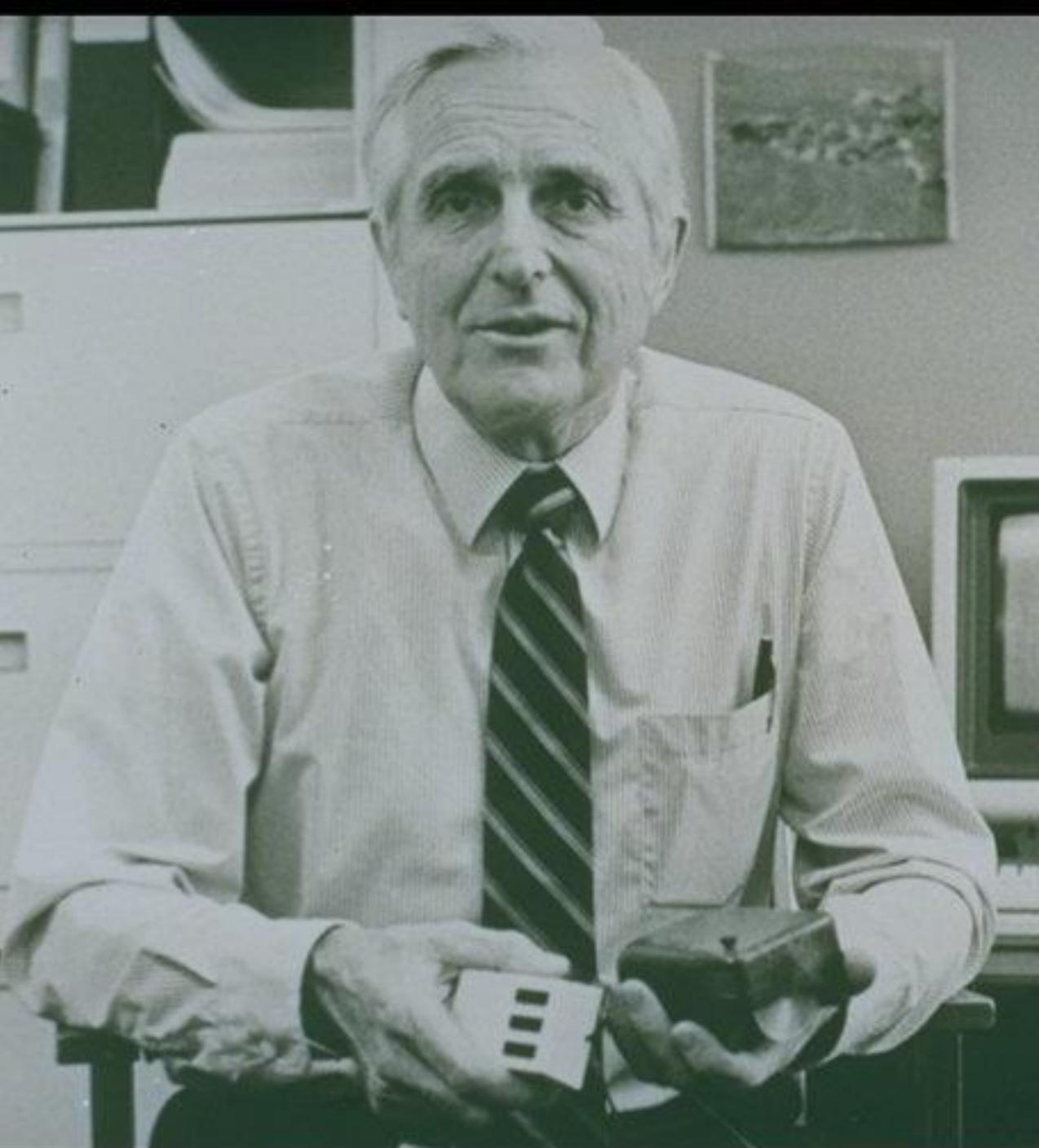


Artificial Intelligence: The Power of AI and the Future of Banking

Presented by: Carl Ryden
CEO & Co-Founder, PrecisionLender

CONNECT. SHARE. GROW.



“If in your office, you, as an intellectual worker, were supplied with a computer display backed up by a computer that was alive for you all day, and was instantly responsive to every action you have—how much value could you derive from that?”

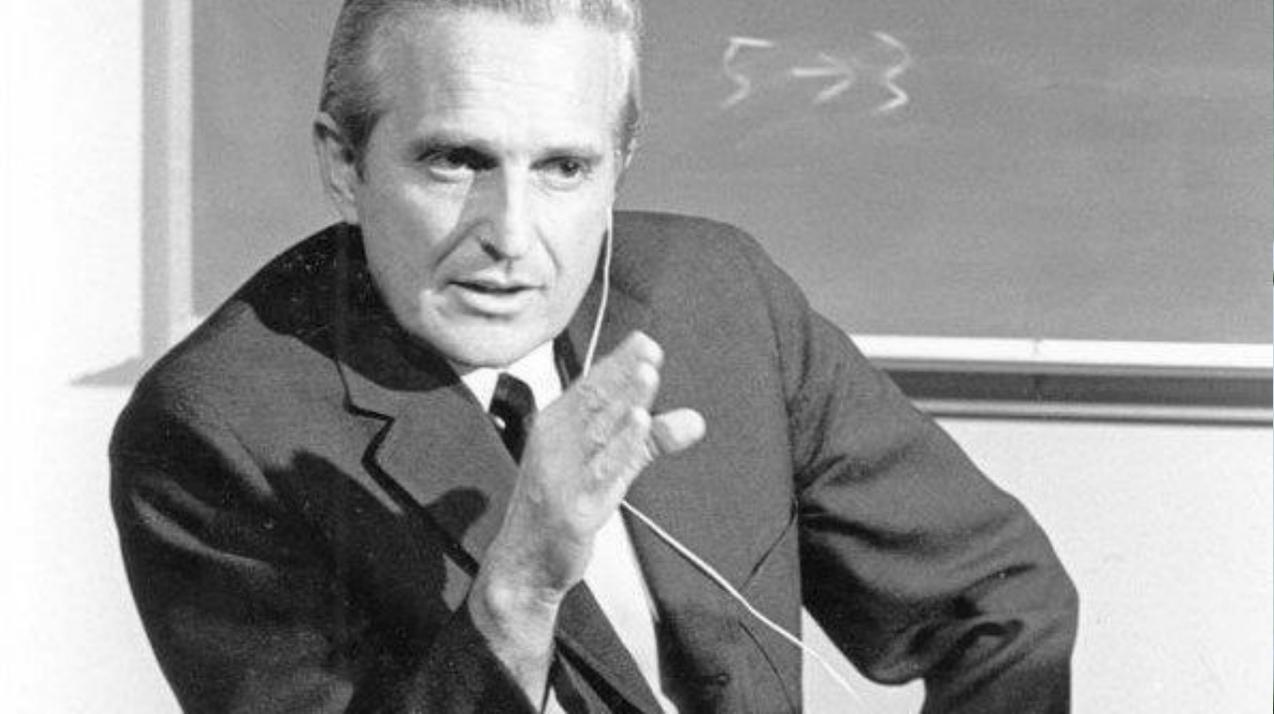
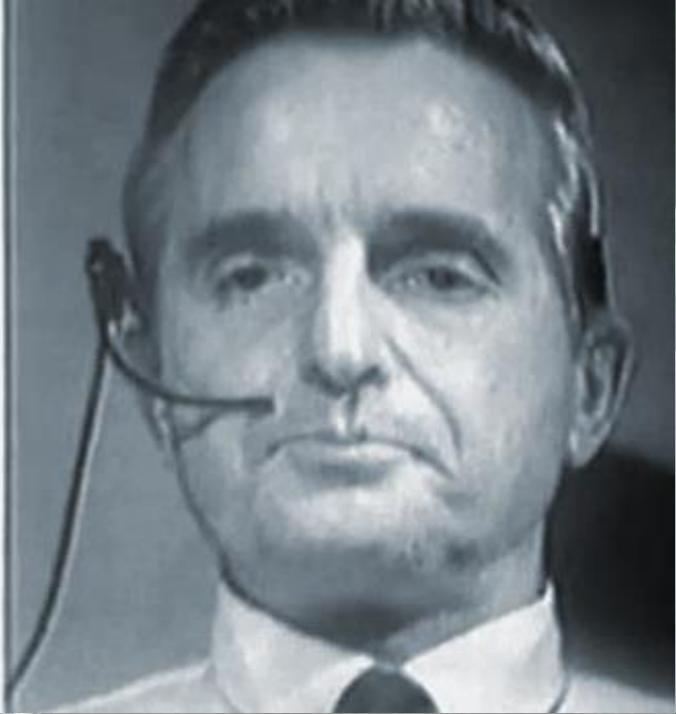


ORANGES
APPLES
BANANAS
CARROTS
LETTUCE
BEANS

CANS:
APPLE SAUCE
BEAN SOUP
TOMATO SOUP

CEREALS:
BREAD
NOODLES (ELBOW FIND)
FRENCH BREAD

COLD LOCKER
MILK



Intelligence Augmentation (IA)





Digital Transformation

Our Journey to Andi

Where we started

Carl

PrecisionLender - Opport: X

https://application.precisionlender.com/price/opportunity/#/a1ce7c96-90a9-4b57-922c-52134f451777

precisionlender® Need Help? Carl's Account Logout

Print Save Transfer Delete Close Advanced Analytics Assumptions

Name: New Opportunity Stage: Quoted - 10%

Lender: Carl Ryden Pricing Date: 4/9/2016

Relationship: None Projected Close Date: 7/08/2016

Current Scenario (1 of 1): 5 yr Fixed, 4.25%(UST5Y+3.09%), \$7,500 Fees, \$... Pipeline Scenario: 5 yr Fixed, 4.25%(UST5Y+3.09%), \$7,500 Fees, \$1.8...

Add Commercial Real Estate - Investment Deposits 0 Other 0 Financial Statements Notes

Amount: \$1,500,000

Initial Rate: 4.25%

Payment Type: Amortizing

Interest Options: Actual/360 / Monthly

Maturity: 60

Amortization: 240

Rate Type: Fixed

Fees: \$7,500

Origination Channel: Average

Servicing Channel: Average

Risk Rating: 3. Average

Collateral: \$1,875,000 / 80% LTV

Guarantees: None

Prepayment Option: None

Participations: None

Payoff/Renewal: None

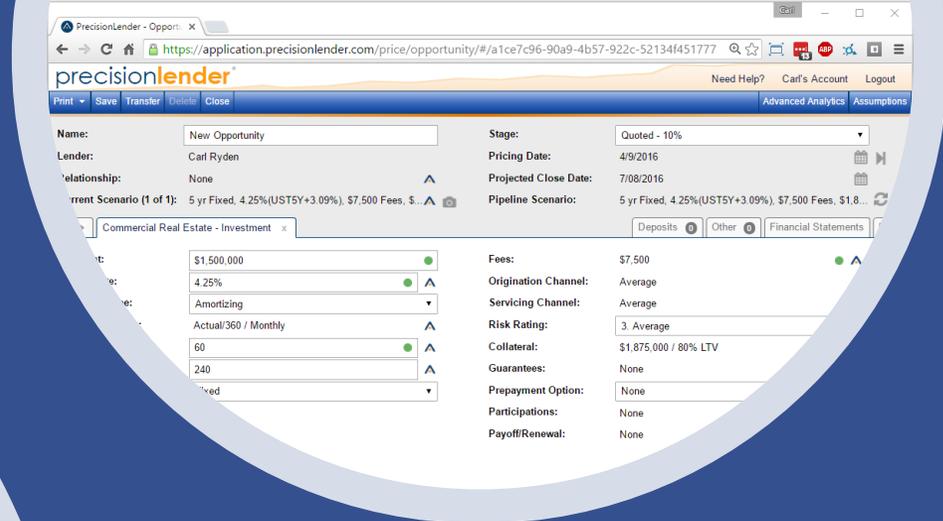
Net Income: \$20,818 \$21,728

ROA: 1.51% 1.58%

ROE: 18.2% 19.0%

loan target opportunity target

- Adding 10 bps to Initial Rate reaches the target
- An Initial Fee of \$6,988 reaches the target
- Adding 0.47% to Initial Fee reaches the target
- Reducing LTV to 75% reaches the target
- Reducing Maturity to 56 months reaches the target
- Consumer DDA of \$107K reaches opportunity target
- Commercial DDA of \$118K reaches opportunity target
- Consider a Floating or Adjustable Rate to reach target



Andy and the Magic Dots

...every PrecisionLender user

...now has their own pricing analyst

Her name is Andi.

She is new on job, but she learns very quickly.

She works 24x7. She never sleeps.

She sees every deal within your bank. She learns what is working and what is not.

She helps you to price each new opportunity, offering suggestions on structure and how to compete.

She monitors your relationships and alerts you to threats and opportunities.

..and a completely extensible “Andi Skills Framework” for adding, deploying and managing new skills

Here are ways to reach the target:

- Increase the Initial Rate by 15 bps
- Add \$13,603 to the Initial Fees
- Add 0.68% to the Initial Fees
- Reduce LTV to 71%
- Adding \$105K of Commercial DDA reaches opportunity target

Here are things to consider:

- If a Floating or Adjustable rate is an option

How does maturity affect ROE

I found these help resources:

- ? Why does your return improve if you reduce maturity?
- ? Why does my return change when I change Loan-To-Value (LTV)?
- ? Why does adding deposits decrease the return of the opportunity?

Does this answer your question?



What have we
learned? (so far)

Context is King

- Narrowing the context makes everything exponentially easier (both to build and to validate)
- User Experience (UX) matters immensely – not merely from an ease of use, but the UX must be built around influencing and “seeing” the resulting behaviors and outcomes.

Not All Data is Created Equal

- Behavioral data is valuable.
- Labelled behavioral data (grounded to outcomes) is most valuable.
- Most of the data within the bank is not this. No amount of big data projects will change this.
- Focus on narrow contexts, build the data organically to drive results.
- Consider the WAZE example where every interaction makes the system better

Nobody
actually wants
Artificial
Intelligence.
They just want
Intelligence

- The “Artificial” kind should be your last resort and should always be benchmarked against simple heuristics.
- Build Iron Man suits not Terminators.
- Amplify the human in the loop. Arbitrage what the best humans do to everyone else.

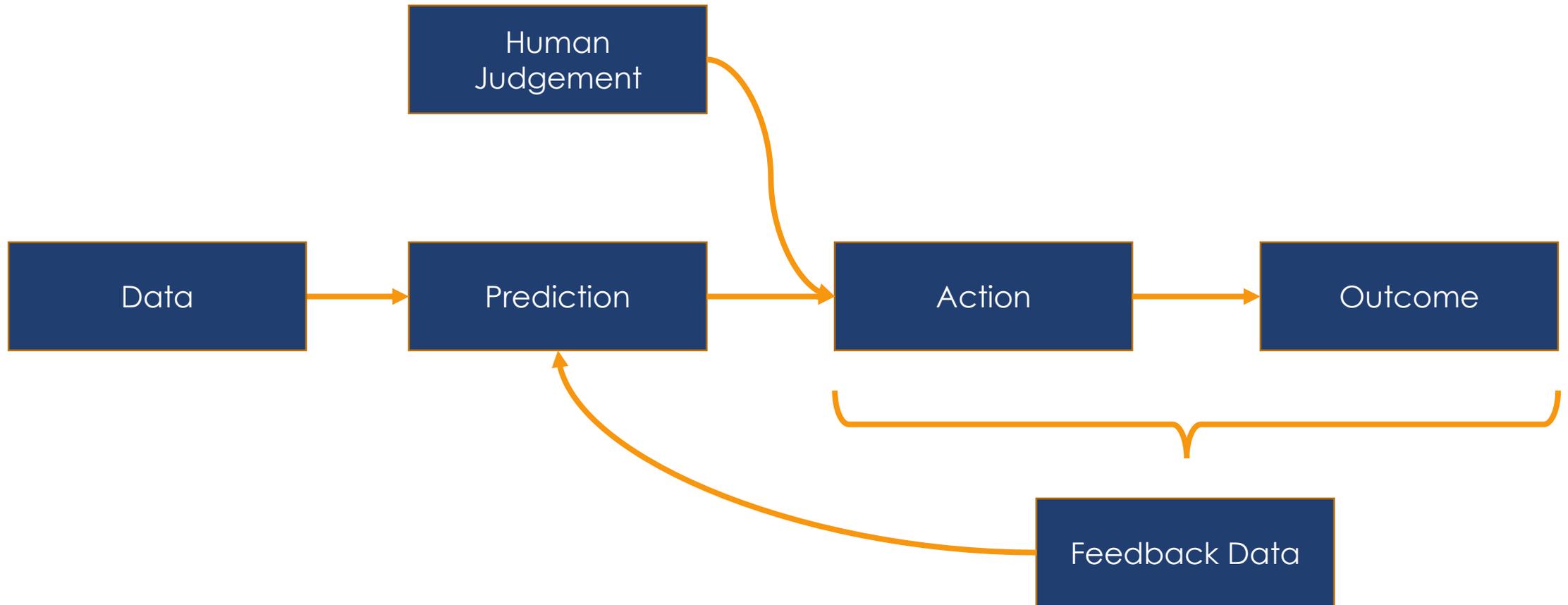
The impact
of the
personification
of “Andi” has
amazed me.

- It is relatable and human. RM’s response “I so need an Andi.”
- It humanizes the machine instead of mechanizing the human.
- It guides development to the actual “job to be done” instead of “put a button here.”
- Extensibility through adding “skills” to Andi has opened the floodgates of “could Andi do X for me?”

There is an intelligence value chain

- To win, solutions must implement the entire value chain.
- Most that we see die at the “last mile” of AI: translating insight into action.
- Even better build in “Coaching Network”-type feedback loops.

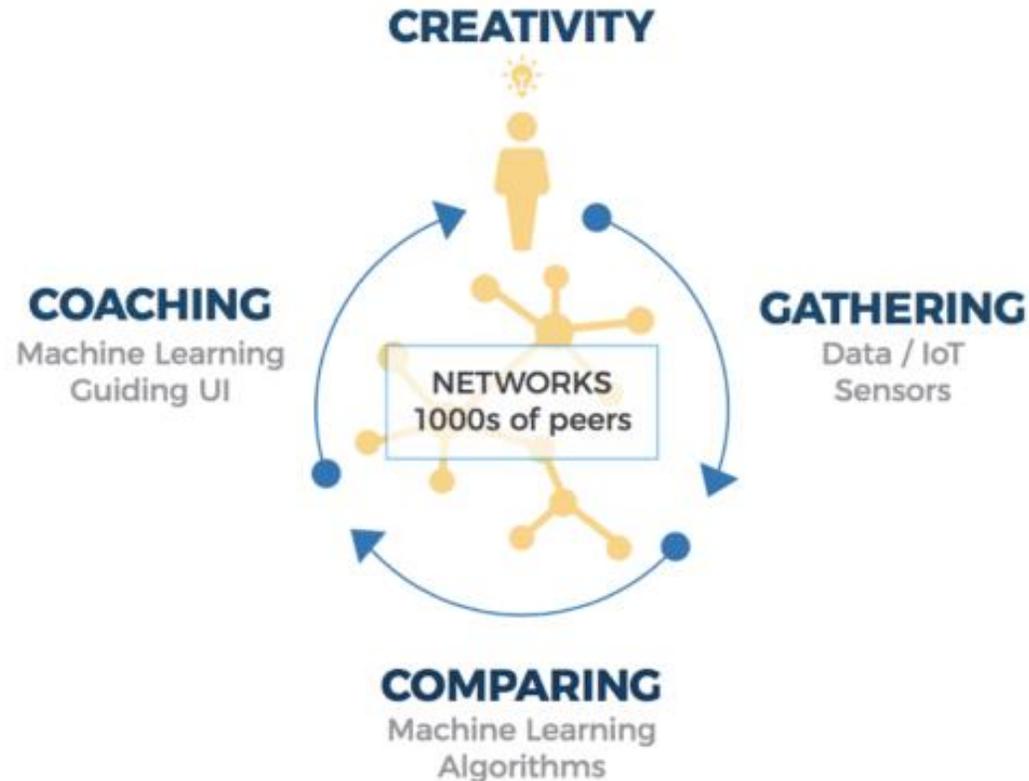
Ajay Agrawal's Anatomy of a Task



Gordon Ritter's Coaching Networks

COACHING NETWORKS

Real-time, in-context digital coaching



Gather Behaviors

Sensors passively gather detailed user activity and behavior: written, verbal, physical.

Combine With Peers

Machine Learning (ML) analyzes this data to identify the best practices of workers across the network.

Predictive Advice

Based on ML findings, user is coached real-time with unique, individually tailored advice.

Human Creativity

Human ingenuity advances the network, where brilliant outliers improve outcomes.

SoR, SoI, SoE...oh my

Systems of Record (SoR)

Systems of Intelligence (SoI)

Systems of Engagement (SoE)

What is it?

Captures data around what happened, when it happened and who was involved.

Uses machine learning algorithms to transform facts from systems of record into “beliefs” about the business/ world (predictions are just beliefs about the future).

Rides “shotgun” with the end user while they “do what they do” and translates facts and beliefs into discrete, measurable actions to coach or nudge the user to a better outcome.

Deals in:

Facts

Beliefs/ Predictions

Actions

Examples:

CRM, ERP, SCP, etc.

Data Robot, Tensorflow, etc.

PrecisionLender, Hemingwayapp, Chorus.ai

Many ways of saying the same thing...

**Greylock's
Jerry Chen**

Systems of Record
(SoR)

Systems of Intelligence
(SoI)

Systems of Engagement
(SoE)

**Microsoft's
Satya Nadella:**

Perception

Cognition

Action

**Emergence's
Gordon Ritter:**

Gathering

Comparing

Coaching

**U of Toronto's
Ajay Agrawal:**

Data

Prediction

Action



Centaur or Freestyle Chess

When you create a Human + AI team,
the hard part isn't the "AI".
It isn't even the "Human".

It's the "+".

Again, many ways of saying the same thing...

Gartner

Cognitive Expert Advisors

Accenture

Citizen AI

**Emergence's
Gordon Ritter:**

Coaching Networks

Deloitte

Cognitive Collaboration

Cognitive Coaching

Contextual

Contemporaneous

Constructive

Individualized

Actionable

Attributable

“If in your office, you, as an intellectual worker, were supplied with a computer display backed up by a computer that was alive for you all day, and was instantly responsive to every action you have—how much value could you derive from that?”

