Ben Magnuson

DIRECTOR, DATA STRATEGY

2:00 – 2:30 PM

AI and the Workforce: The Teams and Talent Most Likely to Win

Ben Magnuson

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one north A TEKsystems Company

JUST LIKE THE PHOTO IN BACK TO THE FUTURE

BUMMERS

Data quality is degrading.

While data quality within organizations may be improving—data quality outside the org is on a slow descent.

DATA DEGRADATION

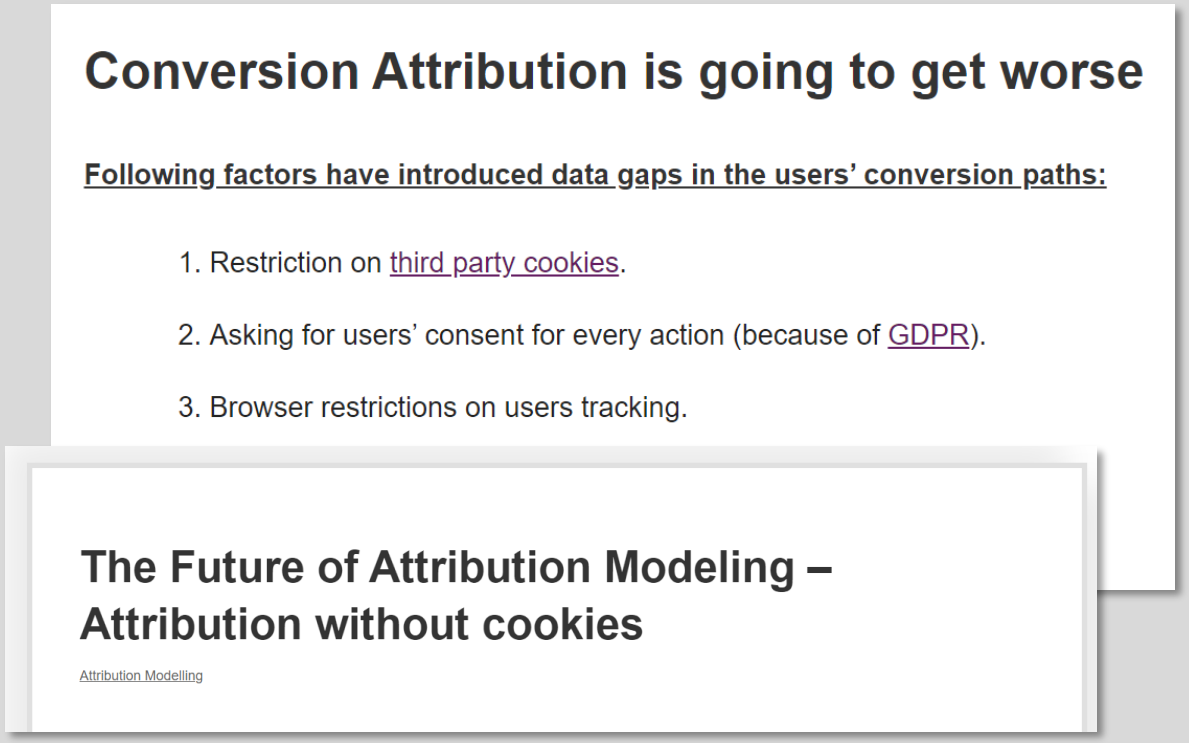
Privacy restrictions have reduced ability to track people across devices, websites, and applications

Influences:

- 3rd party cookie deprecation
- Privacy regulations (government and private)
- Apple: Mail restrictions and “Ask Not to Track”
- Browser tit-for-tat

Greatest Potential Impacts:

- Attribution modeling
- Reporting on which channels are most effective at improving conversions
- Increased cost to reach segments

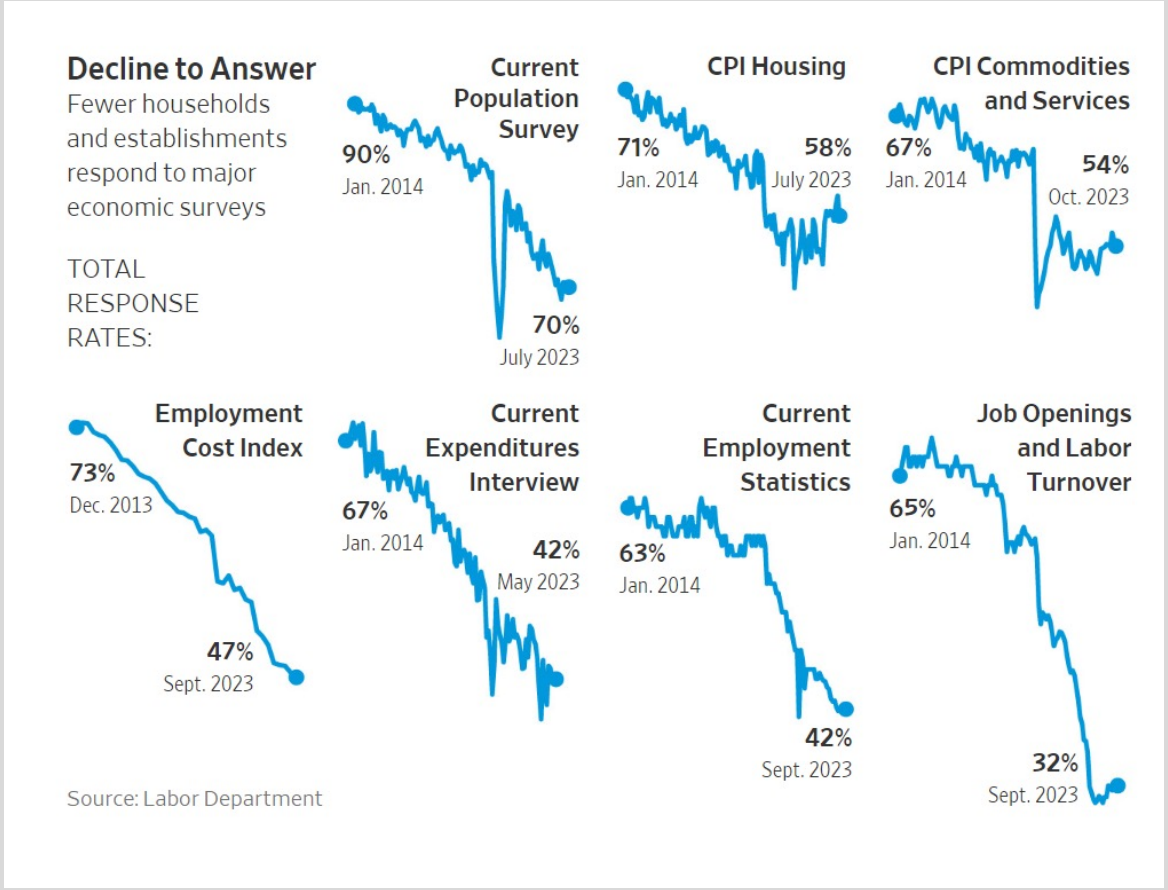


FAILURE TO RESPOND:

Survey-based research is struggling with ever declining response rates.

Data degradation

- A trend that has been occurring for decades became *much* worse during the pandemic but has not recovered.
- Response rates aren't limited to just phone surveys, but mail and digital.

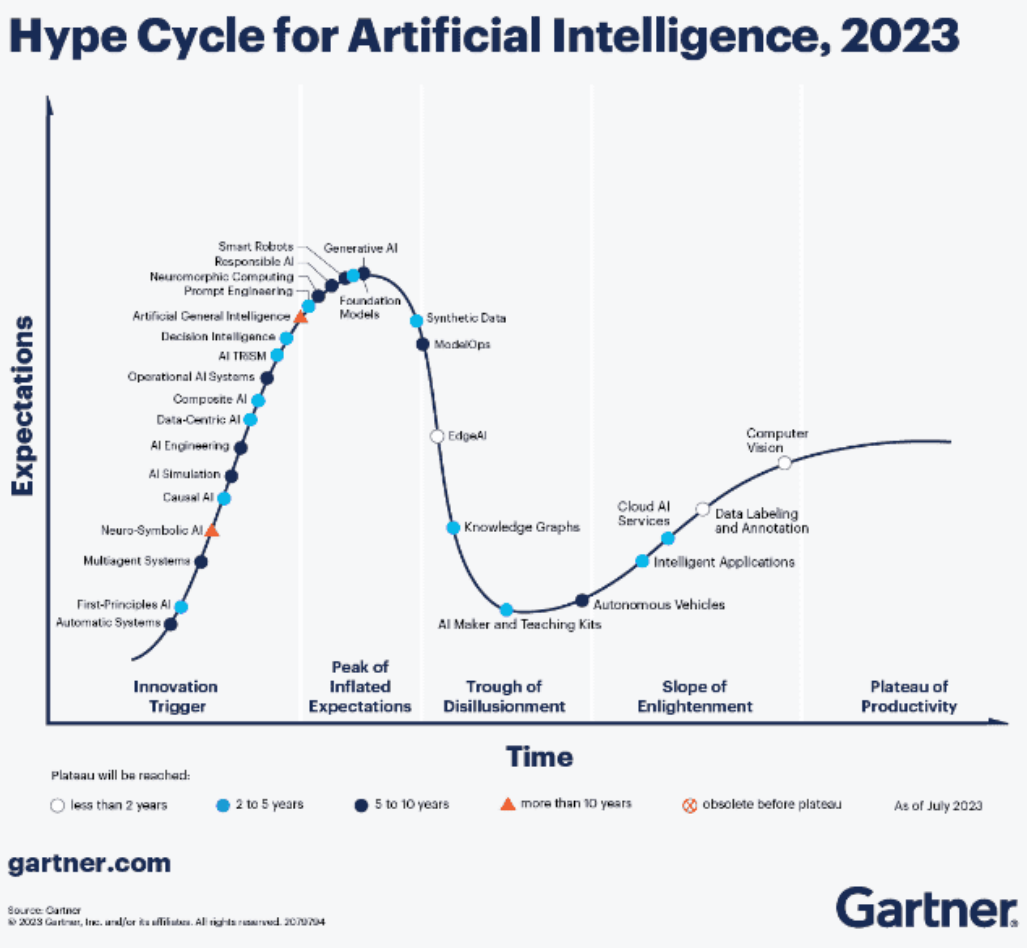


THE EVERYTHING TOOL

“What’s your AI plan?”

We’ve all been in a meeting this year with this question.

And it feels like when a group of people have performed something as impressive as making it seem like computers are conversing, we should pay attention.



“The most important trait of an AI researcher is that they know a lot about AI research. Ideally, an AI researcher should have some breadth; that is, they should know at least something about a wide-ranging set of problems in multiple subdisciplines e.g., language, vision, robotics, time-series data, planning, etc.”

Rik Koncel-Kedziorski

“A DAY IN THE LIFE OF AN AI RESEARCHER”

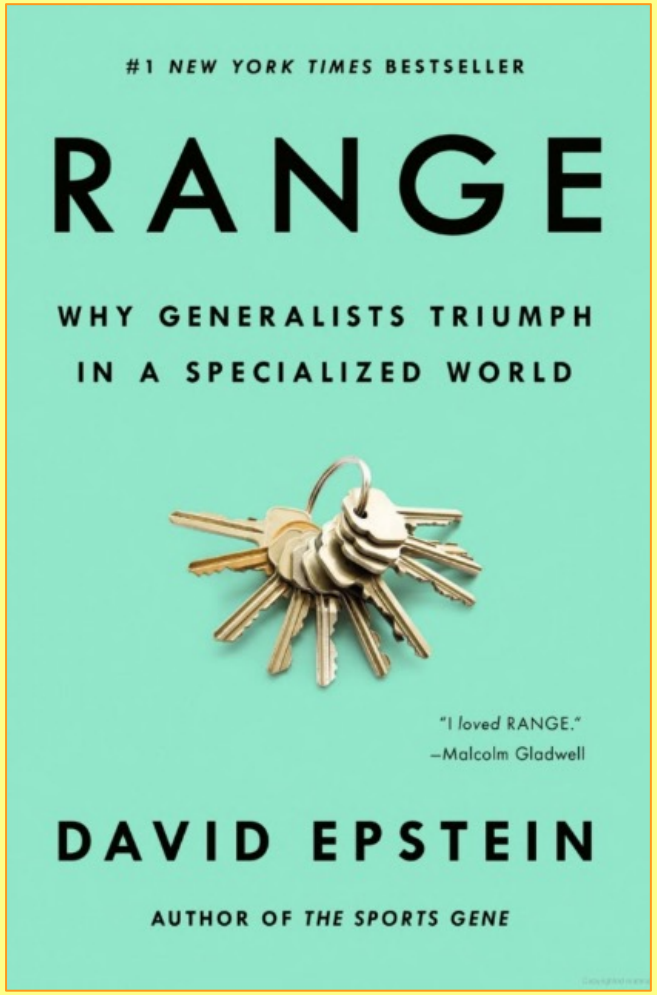
PROBLEM SOLVING

Unkind environments create needs for a wider range of knowledge.

As we work to transform our businesses, we need to be more confident in some areas, and less in others.

In David Epstein's *Range*, he explores how broadening our range of experiences leads to superior problem solving in three key ways:

- **Person:** The importance of a range of experiences in life
- **Approach:** The importance of expanding your range when problem solving
- **Teams:** How bringing in range can propel your problem solving



We are going to explore the benefits of range in three areas:

01

The Person

02

The Approach

03

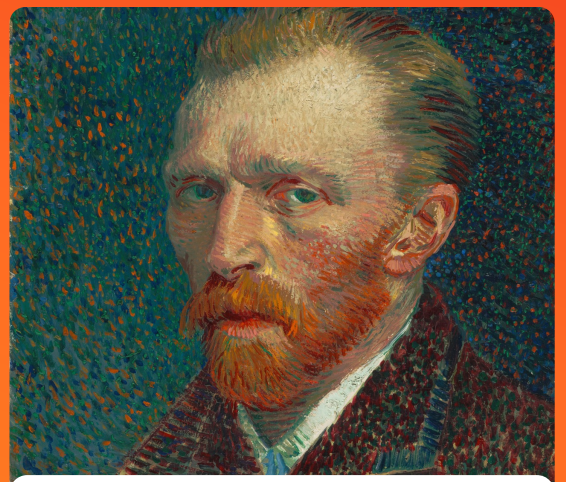
The Team

And how, when combined, they provide the right mix to solve the most vexing problems.

01

The Person

CIRCUITOUS ROUTES TO SUCCESS



VAN GOGH

Didn’t return to painting until 27; former teacher, art dealer, and painter.

JULIA CHILD

Served in OSS (prelude to CIA); “failed housewife;” co-authored *The Art of French Cooking* at age 49.

RAY KROC

Lifelong salesman; did not partner with McDonalds until 52.

CHARLES DARWIN

Medical school dropout; goes to Cambridge to study Theology before being recommended for a 5-year tour on the HMS Beagle.

These examples are commonplace at One North.

ME (BEN)

Journalism Major, started career in Product Support and Account Services

KALEV PEEKNA

Recovering historian

JESSICA DEJONG

New construction real estate before entering design

JENNIFER LILL

Master's of Education and started career in Corporate Training

Data Strategy Team

PRATHYUSHA VEDULLA

Former electrics engineer who worked on semiconductor chip manufacturing

BHARGAVI KASHYAP

Started in biomedical labs before moving to Public Relations

PAUL LINCOLN

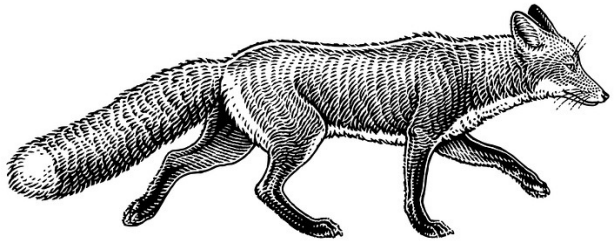
Energy Sales before moving into Marketing Agencies

Hedgehogs v. Foxes

Philip Tetlock applied the famous framework toward forecasters:

The Hedgehog

- Deep expertise, but narrow; some had spent careers studying a single problem.
- According to Tetlock, “[Hedgehogs] toil devotedly within one tradition of their specialty and reach for formulaic solutions to ill-defined problems.”



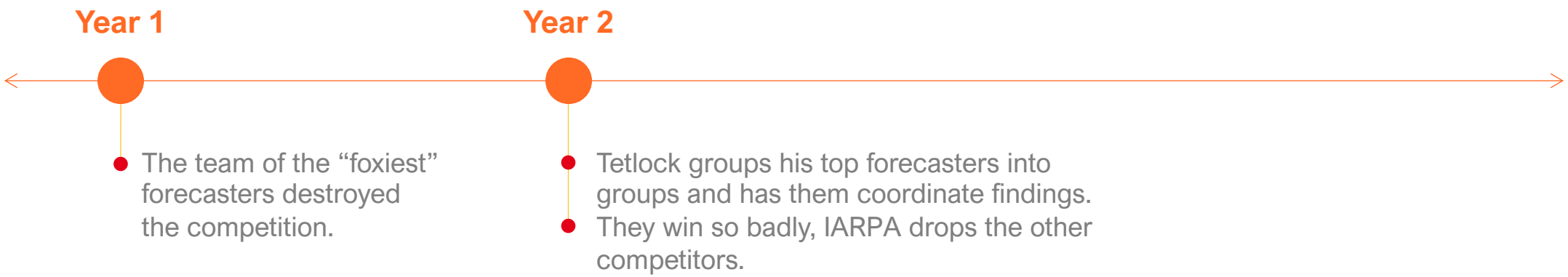
The Fox

- Broad, more shallow expertise across an array of disciplines
- More accepting of ambiguity and contradiction

When placed head-to-head in short-term and long-term forecasting, hedgehogs were terrible.

In 2011, IARPA (friend of DARPA) launched a 4-year prediction tournament:

- Five groups of researchers were encouraged to formulate a team they thought would do best at the predictions.
- Tetlock and Mellers stacked their team full of “Foxes” rather than decorated experts.



“The volunteers drawn from the general public beat experienced intelligence analysts with access to classified data by 30 percent.”

David Epstein

RANGE: WHY GENERALISTS TRIUMPH IN A SPECIALIZED WORLD

02

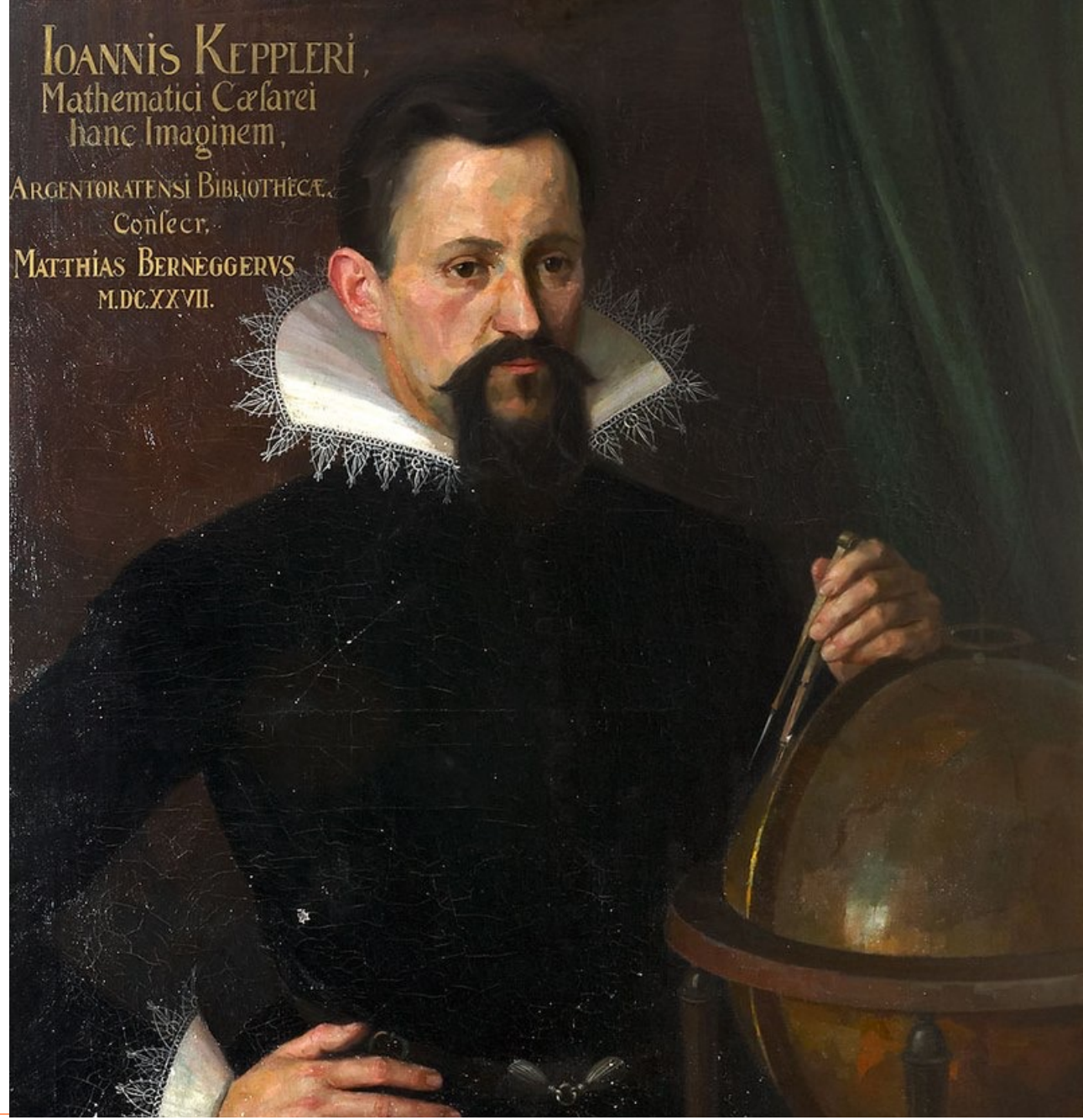
The Approach

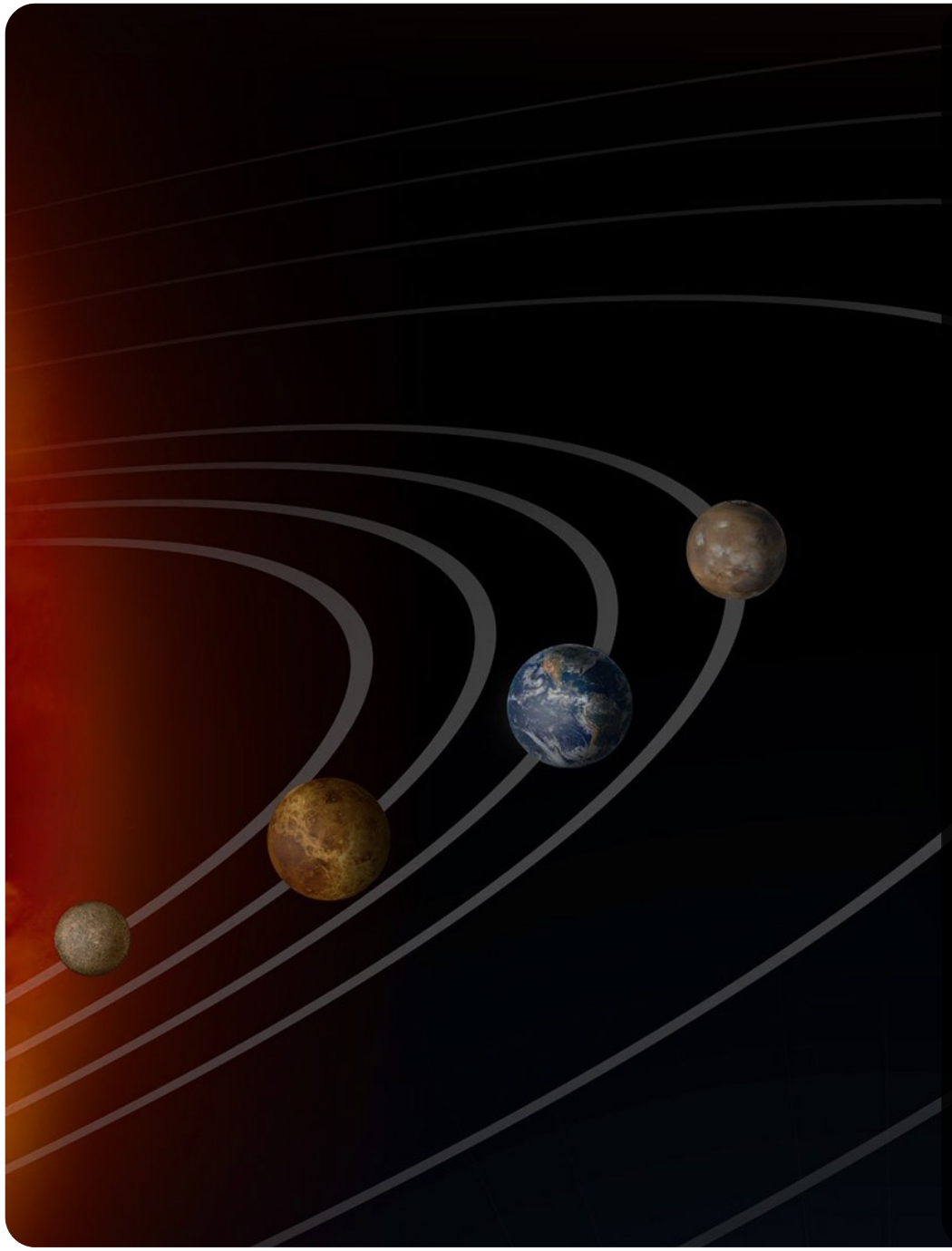
PERSON

The power of analogy

Johannes Kepler, a 16th century astronomer, lived in a world where the available theories of planetary orbit did not fit what he could observe from Earth.

At this point, researchers knew the Earth and other planets revolved around the sun but believed them to orbit in circles at the same speed.





He observed…
Planets farther from the sun orbited slower than planets closer.

He related it to… heat and smell
dissipating the farther they get from the source.
Could the sun's 'energy' be similar?

But those have a presence?

He related it to… light
Light "appears not to exist between its source and object it lights up." If light can, what other energy?

But light can be blocked, and an eclipse doesn't stop orbits.

He related it to… magnets
Perhaps planets have poles on either end, attracting or repelling based on where they are in their orbit.

But they always move forward?

He related it to… a whirlpool
The sun's power creating a 'current' the planets are pulled into

But they don't follow an ordinary path?

He related it to… a boatman, optics and lenses, balance scales, brooms

“Kepler’s intellectual wanderings traced a staggering journey, from planets imbued with souls riding on crystalline spheres, to his illumination of the laws of planetary motion which showed that their orbits were predictable based on their relation to the sun.”

David Epstein

“RANGE”

More importantly, Kepler invented Astrophysics.

PROBLEM SOLVING

Analogical thinking breaks us out of the inside view.

In 2001, BCG created an intranet site intended to facilitate analogical thinking.

A consultant creating strategies for a merger would not see examples of AOL and Time Warner, “but of William the Conqueror’s ‘merger’ of England with the Norman Kingdom.”

Seems tedious?

PROBLEM SOLVING

Students had to create strategies for a fake company struggling to build revenue.

Students were broken into three groups:

GROUP 1

No analogies provided

GROUP 2

One analogy provided in same industry

GROUP 3

Multiple analogies provided in distant industries

PROBLEM SOLVING

Students had to create strategies for a fake company struggling to build revenue.

Students were broken into three groups:

THE RESULTS?

Group 3 had the most strategies created, with the more distant the analogy the better. **Group 1** had the fewest.

Despite this, when asked how they could apply these learnings, students decided that just one analogy in a related field was best.

03

The Team

The benefits of building a team with range equals that of building it within our approach.

The Study

Psychologist Kevin Dunbar began documenting how productive labs worked. In doing so, he observed two labs encountering the same problem simultaneously (he was forbidden from sharing this info between teams).

LAB 1

All E. coli experts

LAB 2

Experts with backgrounds in Chemistry, Physics, Biology and Genetics

“One lab made an analogy drawing knowledge from experience with medical devices and figured it out right there in the meeting.

The other used E. Coli knowledge to deal with everything, and it took them weeks to uncover a solution.”

Kevin Dunbar

PSYCHOLOGIST

RANGE IN THE WILD

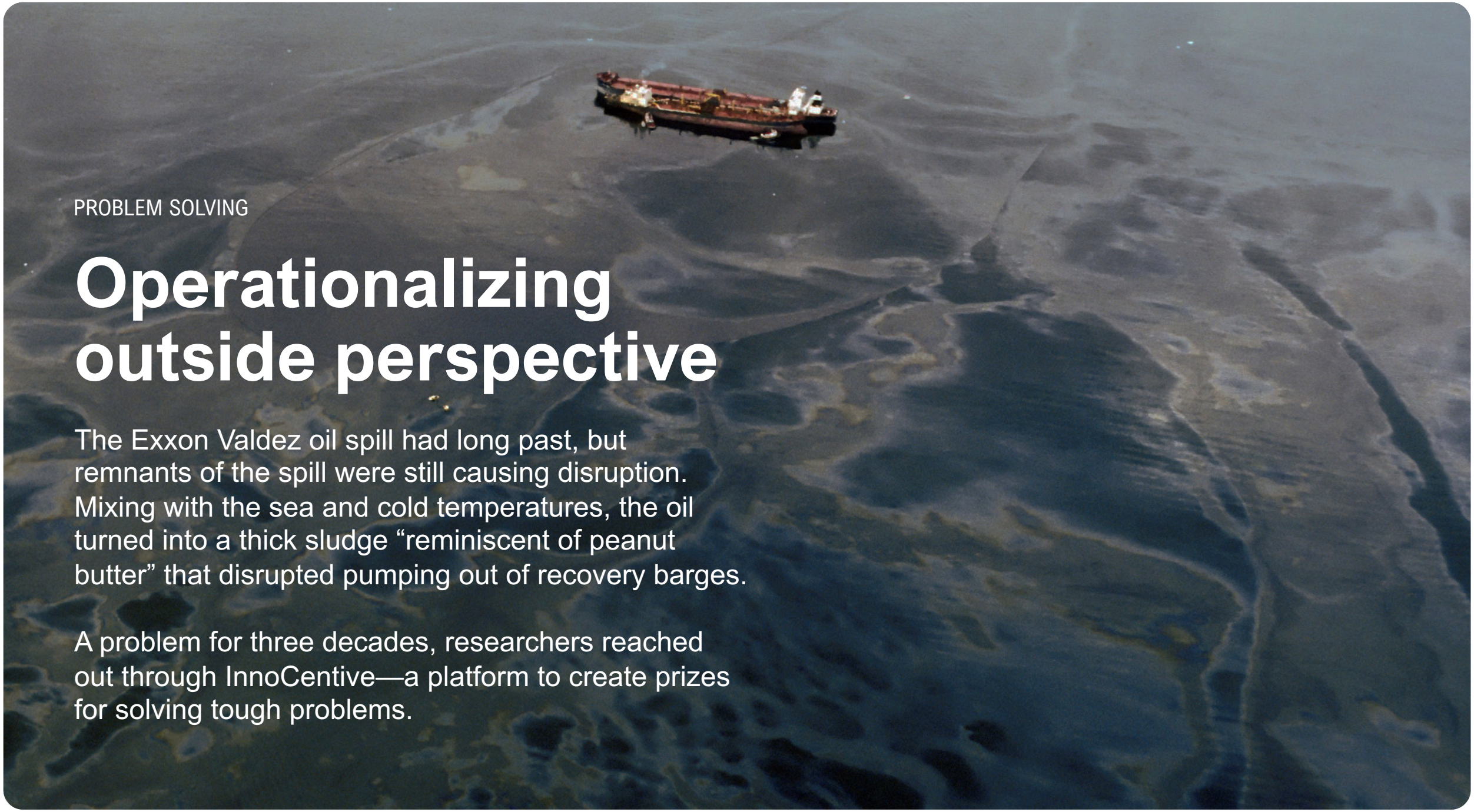
Automating self check out

What magic is this?

The self-checkout at Uniqlo feels like it is from a distant future, but it was brought to life by a decades-old, cheap technology.

The CIO of Fast Retailing (Uniqlo's parent) spearheaded this effort. His super power was his knowledge of logistics, and the RFID tag.

Rather than try to recreate the cashier, Takahiro Tambara used their experience of tracking inventory in and out of warehouses using radar technology and RFID tags costing just cents.



PROBLEM SOLVING

Operationalizing outside perspective

The Exxon Valdez oil spill had long past, but remnants of the spill were still causing disruption. Mixing with the sea and cold temperatures, the oil turned into a thick sludge “reminiscent of peanut butter” that disrupted pumping out of recovery barges.

A problem for three decades, researchers reached out through InnoCentive—a platform to create prizes for solving tough problems.

“Knowledge is a double-edged sword. It allows you to do some things, but it also makes you blind to other things that you could do.”

Pedro Domingos

COMPUTER SCIENCE PROFESSOR & ML RESEARCHER

Hiring for range

What we learned from focusing on range over specialization

01

Meandering matters.

Talk to neighbors, friends, relatives, teachers. Read, travel! These “distractions” from work may be the very thing that helps you solve your problem.

02

A design-thinking led workshop is not enough!

Push yourself to break things down into their core characteristics, and look around for analogies on how it may be handled.

03

“Knowing the technology” isn’t enough.

Knowing the customer, knowing the business, hopefully (for me) knowing sports will all come into play for a successful evolution of our industries.


Thank You
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