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OPTI-PESSIMISM:
DESIGN FOR THE BEST CASE, BUILD FOR THE WORST

CHERYL PLATZ
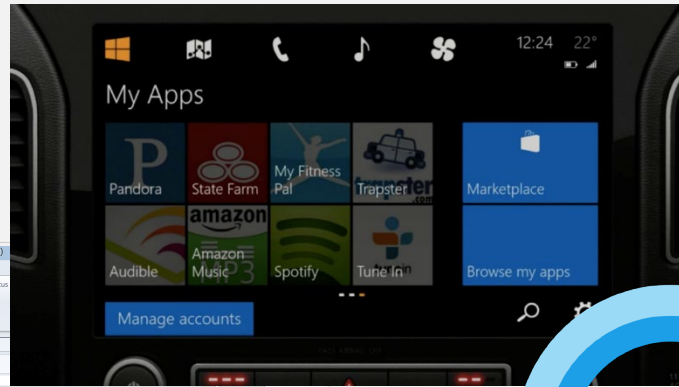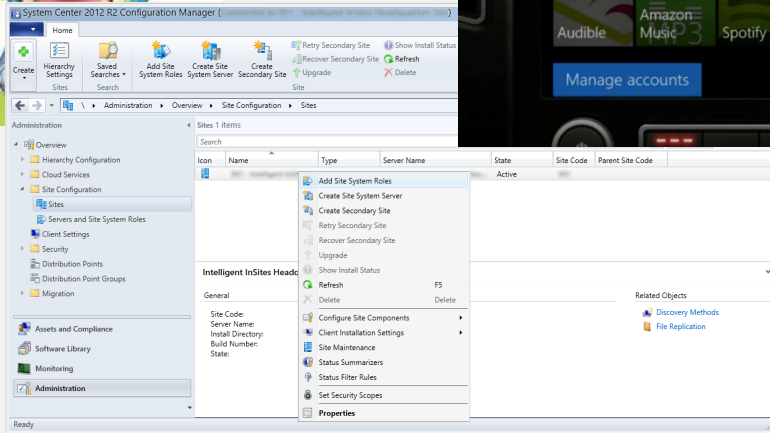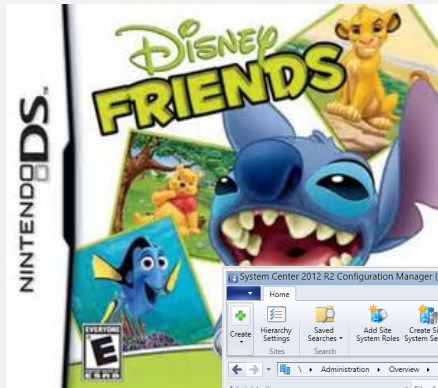
PRINCIPAL DESIGNER & OWNER, IDEAPLATZ

TWITTER, MEDIUM, INSTAGRAM: @MUPPETAPHRODITE

CHERYL@IDEAPLATZ.COM

Hola! Me llamo Cheryl.

I'm a designer who loves exploring complexity and new technology.
My diverse interests have led to an adventure of a career.

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Want to know more about my career, en español?

El Colombiano published an interview with me in the Technology section of their paper and website on Friday Nov 1!

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elCOLOMBIANO

TEMAS DEL DÍA | MASACRE EN EL CAUCA | TRANSFERENCIAS DE EPM, AL ALZA | PUEBLOS DE ANTIOQUIA S ALCALDE

ANTIOQUIA COLOMBIA INTERNACIONAL NEGOCIOS DEPORTES OPINIÓN CUL

Los asistentes virtuales, mucho más que una voz

El próximo año Cheryl Platz lanzará su libro Design beyond devices, que trata sobre cómo integrar ca sentidos en la relación entre los usuarios y sus dispositivos. FOTO ESTEBAN VANEGAS

ddthisedge.com…

opboxcrash.jpg   RM-Logologotype.gif   rosenfeld.jpeg

Today's topic applies to *all* designers and researchers, whether you're working on a traditional website or a large scale AI-infused experience.

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Instead of answers, I hope to leave you with critically important questions.

Questions that will help you avoid and adapt to unintended consequences.

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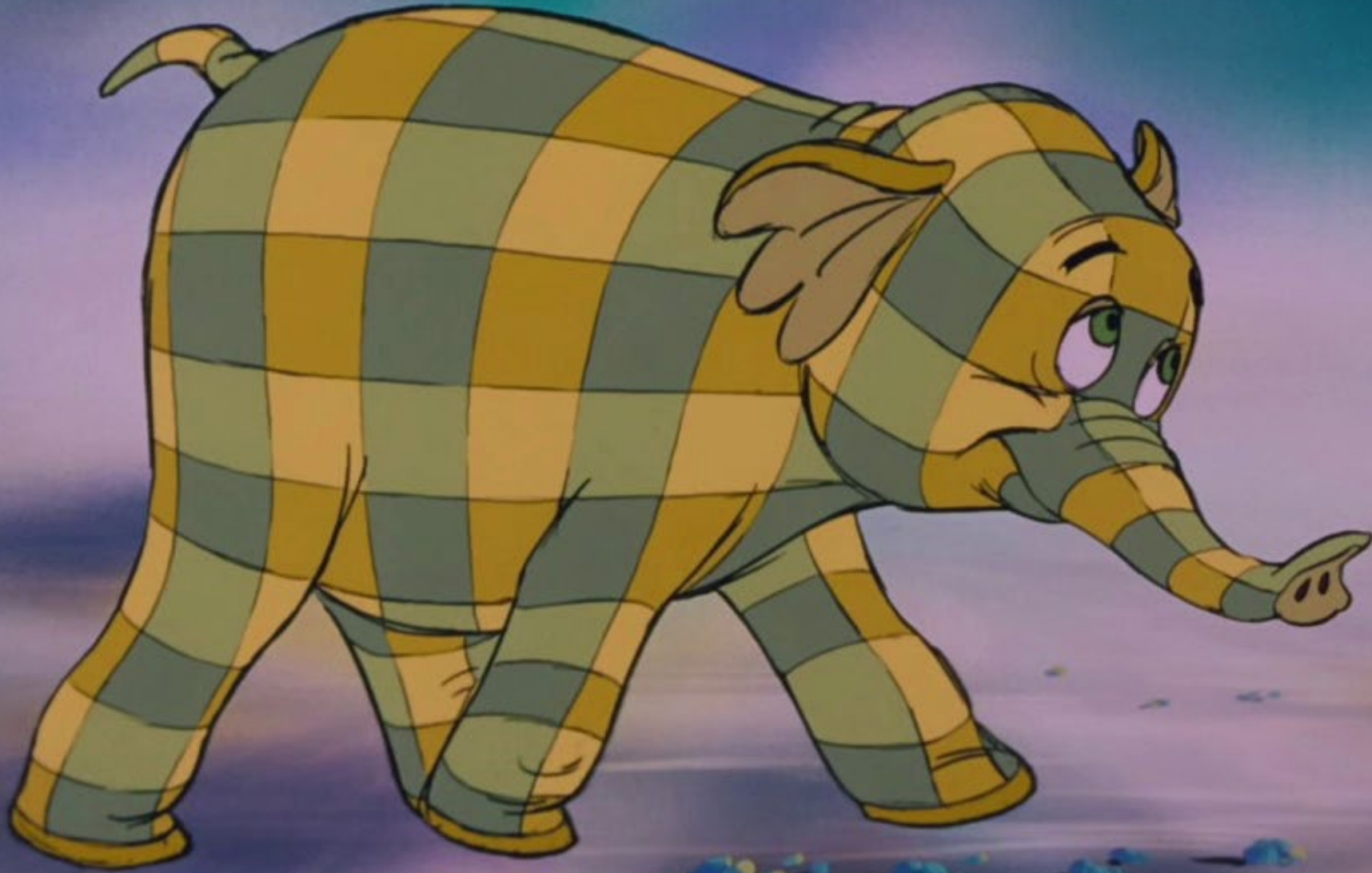
Is your glass half full... or half empty?

For years, our design glass was half full – more "happy paths", less edge cases.

Photo: Adobe Stock

But glass-half-full optimism isn't enough in an increasingly complex environment.

Photo: Adobe Stock

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LET'S TALK ABOUT AN ELEPHANT.

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No, not a metaphorical elephant.

An actual elephant.

Photo: Cheryl Platz

This story is a reflection on the danger of *unchecked optimism*.

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In 2014, I had the privilege of teaching design workshops at the iHub in Nairobi, Kenya.

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Afterwards, I headed to the Maasai Mara for a 3-day safari.

Shoutout to our hosts at Oldarpoi Mara Camp!

On our last day, we took an early morning hike.

Our experienced guides demonstrated how to identify dung from elephants and zebras.

"That bush is trampled. An elephant... and her baby... probably slept here last night."

Photo: Adobe Stock

"It's before 7 in the morning. Isn't 'last night' basically **now**?

...It's fine. The guides aren't scared. Just be cool.

My inner monologue

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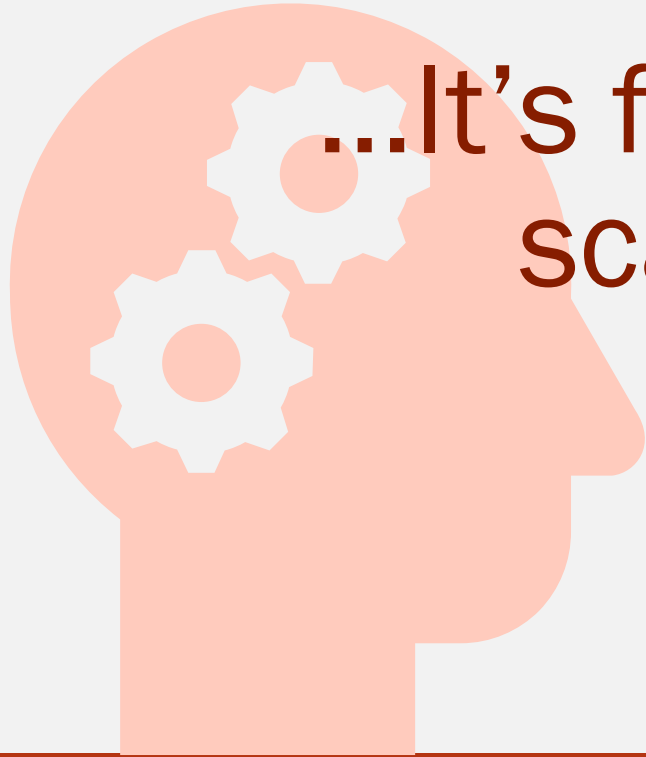
Then, we found *fresh* elephant dung. Flies and all.

Photo: Jurassic Park (1993)

"FRESH elephant dung?? The guides do this all the time. I'm sure we'll be fine.

My inner monologue continues

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At this point, we split up because I couldn't climb the steep hill.

Photo: Cheryl Platz

Our group split up, and our guide stayed with me while the group continued on.

A few minutes later, Leonard and I heard yelling from up on the hill in the Maasai language.

"RUN!"

(you learn a lot about yourself in this moment)

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WAIT. WHAT DOES THIS HAVE TO DO WITH DESIGN?

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OUR INDUSTRY HAS BECOME ADDICTED TO IMPACT.

disruption
transformation
paradigm shifts

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Impact is a double-edged sword...

But as our "adventures" become greater, they become more dangerous.

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More impact brings more edge cases.

Disruption is an event, not an outcome.

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SO HOW DO WE COPE?
GET OPTI-PESSIMISTIC.

Four techniques to apply to your product design process to consider the best – AND worst – of what your product has to offer.

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RULE 1:
CONSIDER THE HUMAN CONTEXT

Surround yourself with customer context, and ask good questions of those around you.

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How do you spot the dung
if you've never been in the field?

Photo: Adobe Stock

"Your scientists were so preoccupied with whether they *could*, they didn't stop to think if they *should*."

Photo: Jurassic Park (1993)

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To avoid genuine harm, we must understand what's important.

Higher stakes demand greater attention to the context of use.

We need our customers to guide <u>us</u>. Not the other way around.

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Ethnographic research can lead you down unexpected paths toward better solutions.

Photo: Amazon's Echo Look

Meet your customers where they are.

Qualitative data doesn't have to be scary.

Interviews (in-person or remote)

Diary studies (like dscout)

Site visits

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Consider adding ethnography to your toolkit.

Whether you conduct ethnographic research on your own or work with an outside company, the investment of time and money may save you millions in misdirected product work.
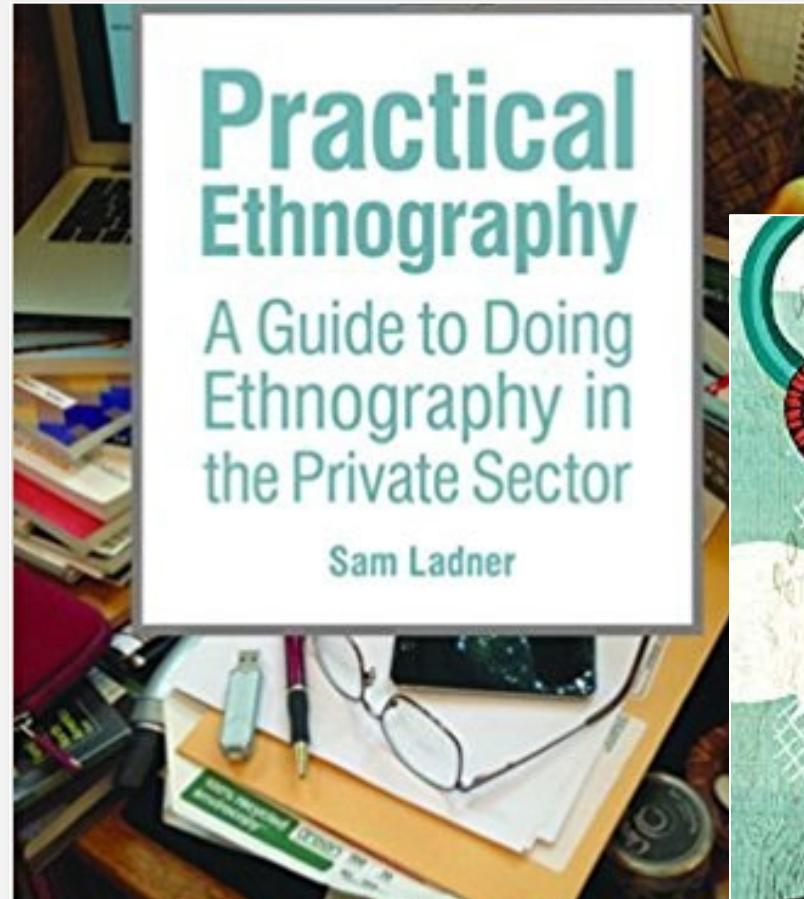
Recommended reading

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Be curious.
Learn your customer's context.
Share that context with your team.

Use storytelling techniques to create the "distancing effect" Maritza Guaderiama spoke about yesterday.

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An important piece of human context I missed?
Leonard had once been injured by an elephant.

Photo: Cheryl Platz

RULE 1: CONSIDER THE HUMAN CONTEXT

- What are the worst conditions in which our product will be used?

- Where will the product be used?

- What devices will our customer prefer?

- How will our customers feel if we fail?

- Who are we excluding?

- Is this product worth building?

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HOW DOES YOUR PRODUCT FIT INTO THE BIG PICTURE?

How will this make lives BETTER?

- Does it **include more people** than other solutions?

- Does it solve a **previously unsolved** problem?

- Does it solve a customer problem in a **uniquely beneficial** way?

How will this make the world WORSE?

- Are we introducing **stress** into a customer's life?

- Which customers might be **excluded** by our product?

- Are we putting our customers **at risk**?

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RULE 2:
DESIGN FOR THE BEST CASE

Embrace the glass-half-full mentality and explore the consequences of success.

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Success brings complexity. Explore those possibilities.
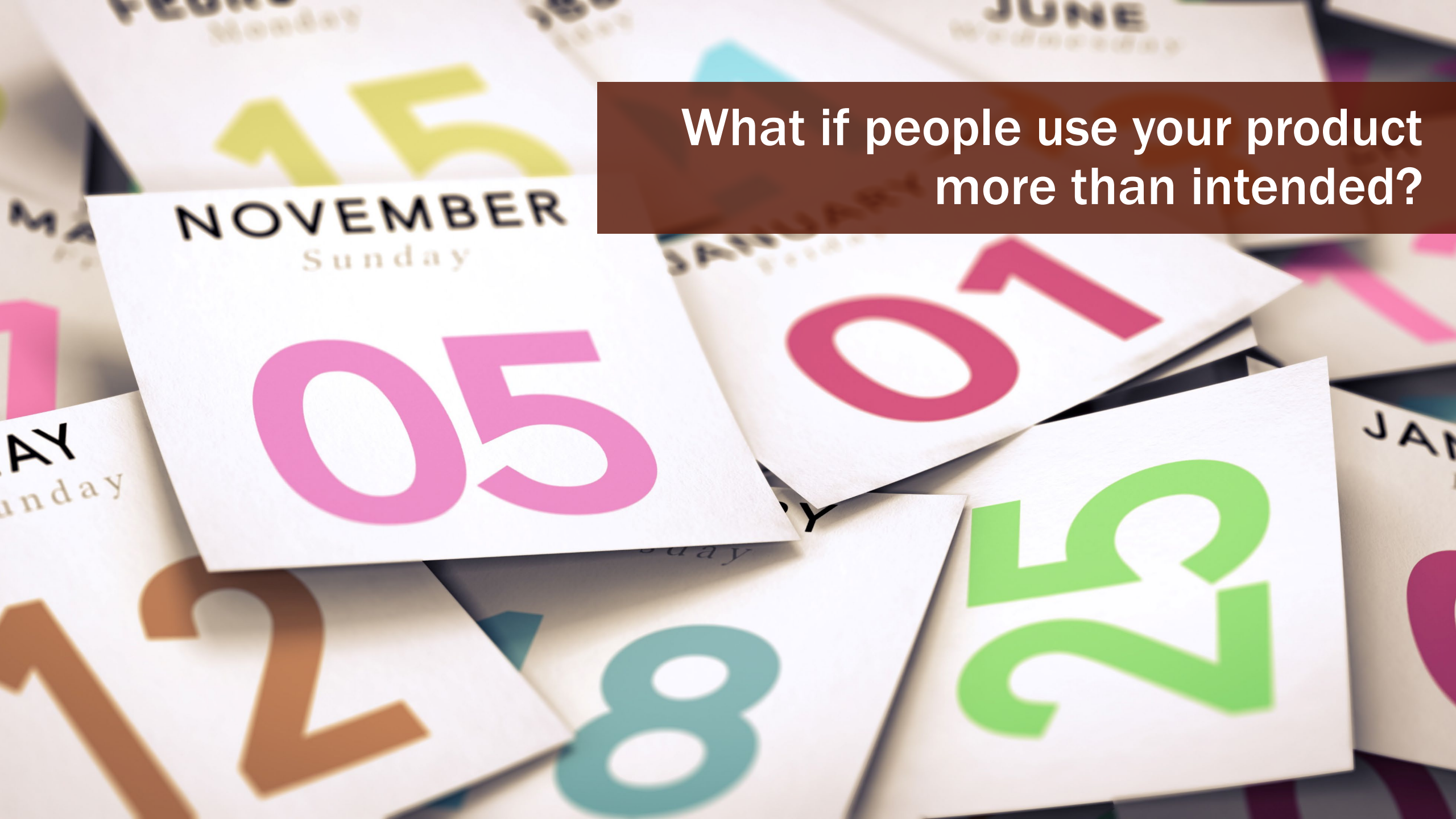
What are the *best* problems you could have?

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The 'best problem' to have on our hike was also the most dangerous: encountering one of the Big 5 game animals in person.

Photo: Cheryl Platz

What if your customers want to engage cross-channel?

What if people use your product more than intended?

What if people unlike your target customers want to use your product?

Photo: Saturday Night Live

Microsoft's Inclusive Design toolkit includes activity cards to jumpstart your thinking.

Photo: Microsoft

RULE 2: DESIGN FOR THE BEST CASE

- Assume customers will want to interact with you on a **variety of platforms**, and account for this early.

- Assume customers will love your product. **Think through long-term relationships** with your product.

- Assume a wide variety of customers will want to use your product, and **design for inclusivity** from the start.

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RULE 3: PLAN FOR THE WORST CASE. BE PESSIMISTIC.

Don't remove human agency:
instead, provide tools to overcome the worst.

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The harm our products can cause has never been greater.

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TEMPE

SELF-DRIVING VEHICLE HITS BICYCLIST

abc 15 ARIZONA

SPORTS CURRENTS SAFFORD: CLEAR 37° WINDCHILL: 31° 5:01 53°

A fatal Uber ride: comfort over confidence

Elaine Herzberg was crossing the street with her bicycle in Arizona on March 18, 2018.

She was detected by an autonomous vehicle coming down the street.

But the vehicle decided this was a "false positive" and decided not to stop.

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Why didn't the Uber vehicle stop?

Uber engineers were concerned about rider complaints from riders about "erratic" driving due to emergency braking when objects were detected.

They intentionally disabled emergency braking during autonomous mode to avoid this "erratic" behavior.

Customer obsession can have tragic consequences.

SOURCES: ArsTechnica, May 7, 2018; Wikipedia

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What is the WORST CASE impact our product could have?

This is no longer a quantity discussion.

It doesn't matter if your worst case "only happens occasionally".

What matters is the proportional impact that worst case has on a person's day or life.

Even if that's just a single customer.

Even if the person affected isn't a customer at all.

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EXPLORE THE WORST CASES, NOT JUST THE MOST COMMON.

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THE 737-MAX IS A TRAGIC CASE IN POINT.

Unchecked optimism on the 737-MAX has cost hundreds of lives.

- The MCAS AI system **wasn't built with redundancy** to cope with sensor failure. They assumed a best-case scenario.

- The MCAS AI **removed pilot agency** during critical moments in flight.

- Pilot training materials **did not provide transparency** about the new systems.

- The FAA provided exceptions to critical notification guidelines to reduce costs to Boeing.

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It <u>IS</u> our job to make sure our products function without causing harm.

Even in extreme circumstances. Even when it's hard.

Blaming sensor failure isn't good enough.

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Explore the tough questions *before* the cost is too high.

Yes, that means YOU.

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You don't need to build life-or-death systems to face this responsibility.

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CNBC

TECH

TECH | MOBILE | SOCIAL MEDIA | ENTERPRISE | CYBERSECURITY | TECH GUIDE

Amazon Echo secretly recorded a family's conversation and sent it to a random person on their contact list

- A family in Portland says their Echo device recorded their conversation and sent it to a random person on their contact list.
- Amazon reportedly confirmed the incident and blamed it on Alexa misinterpreting background conversation as commands to send a message to a contact.
- The incident raises privacy concerns as voice-assistant devices like the Echo gain more popularity.

Eugene Kim | @eugenekim222
Published 4:54 PM ET Thu, 24 May 2018 | Updated 7:58 AM ET Fri, 25 May 2018

CNBC

Crosscut.

These ballot boxes keep your vote safe from fire, rain and rampaging SUVs

The welded steel drop boxes got their start in the Puget Sound area, but are now in demand across the country.

by Melissa Santos / October 17, 2019

Mail-in ballot boxes: What's the worst thing that can happen?

Lost votes.
Disenfranchised voters.
Compromised elections.
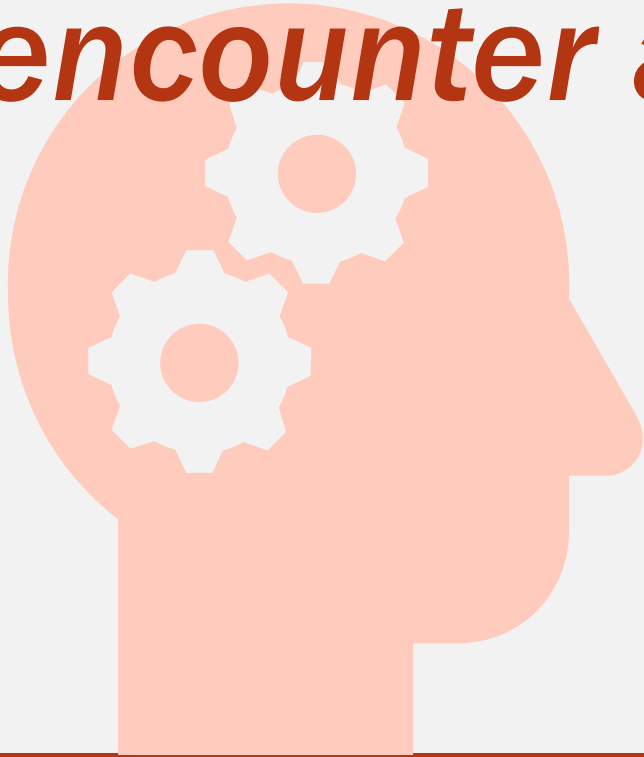
Design for the best case, build for the worst.

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Opti-pessimism takes effort...
but it's worth it in an
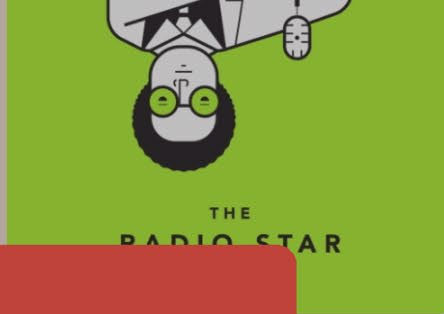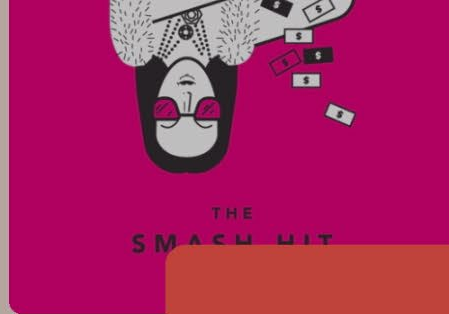increasingly chaotic world.

But how can you explore worst case scenarios BEFORE they happen?

Blaming sensor failure isn't good enough.

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I could have asked:
"What should we do if we encounter a dangerous animal?"

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Name your nightmares so you can face them head-on.

THE
SCANDAL

THE
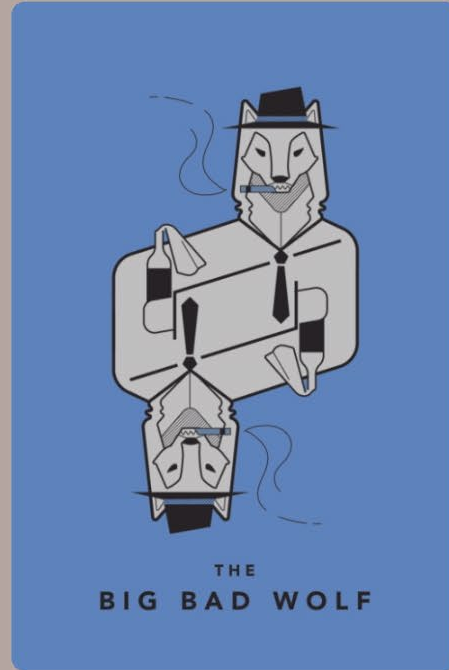SMASH HIT

THE
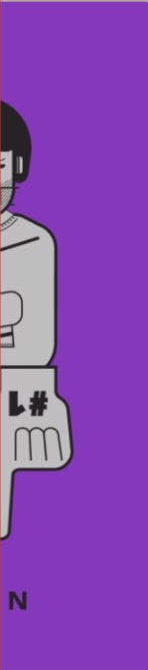RADIO STAR

MOTHER NATURE
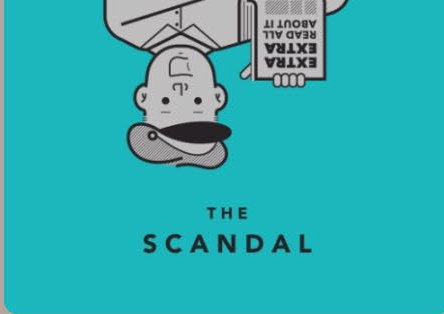
THE
BFFs

◆

If two friends use your product, how could it enhance or detract from their relationship?

How does your product change or create new ways for people to interact?

Does your product fill or change a role previously filled by a person?

THE
SIREN

THE
BIG BAD WOLF

Artefact's Tarot Cards of Tech are a great tool for asking the right questions.

Photo: Artefact

Use toolkits to broaden your perspective.

These don't provide solutions, but can help you ask the right questions.

MICROSOFT

Guidelines for AI + Human Interaction

16 principles, from "Make clear what the system can do" through "Convey the consequences of user actions" can apply broadly, not just to AI-powered products.

GOOGLE

People + AI Guidebook (PAIR)

From defining when to use AI to failing gracefully, this guidebook walks you through the stages of working with artificial intelligence (which applies to a broad range of web technology, too.)

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What happens if our success is not customer success?

If we're too successful, how could customers be harmed?

- Addiction

- Stress

- Broken relationships

- Loss of agency or capability

*How will customers **abuse** our product?*

- Impact of leaked data

- Malicious mob behaviors

- Out of context use

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As customer advocates, the responsibility of telling these tough stories often falls to us.

Maritza Guaderiama and Veronica Bluguermann gave examples of tools for future visualizations in their #ila19med talks.

Photo: Adobe Stock

Frames from the first
Echo Look storyboards
Cheryl Platz / @muppetaphrodite

⚠ Feet?

...ntion to OOBE
challenges for a wall-mounted camera
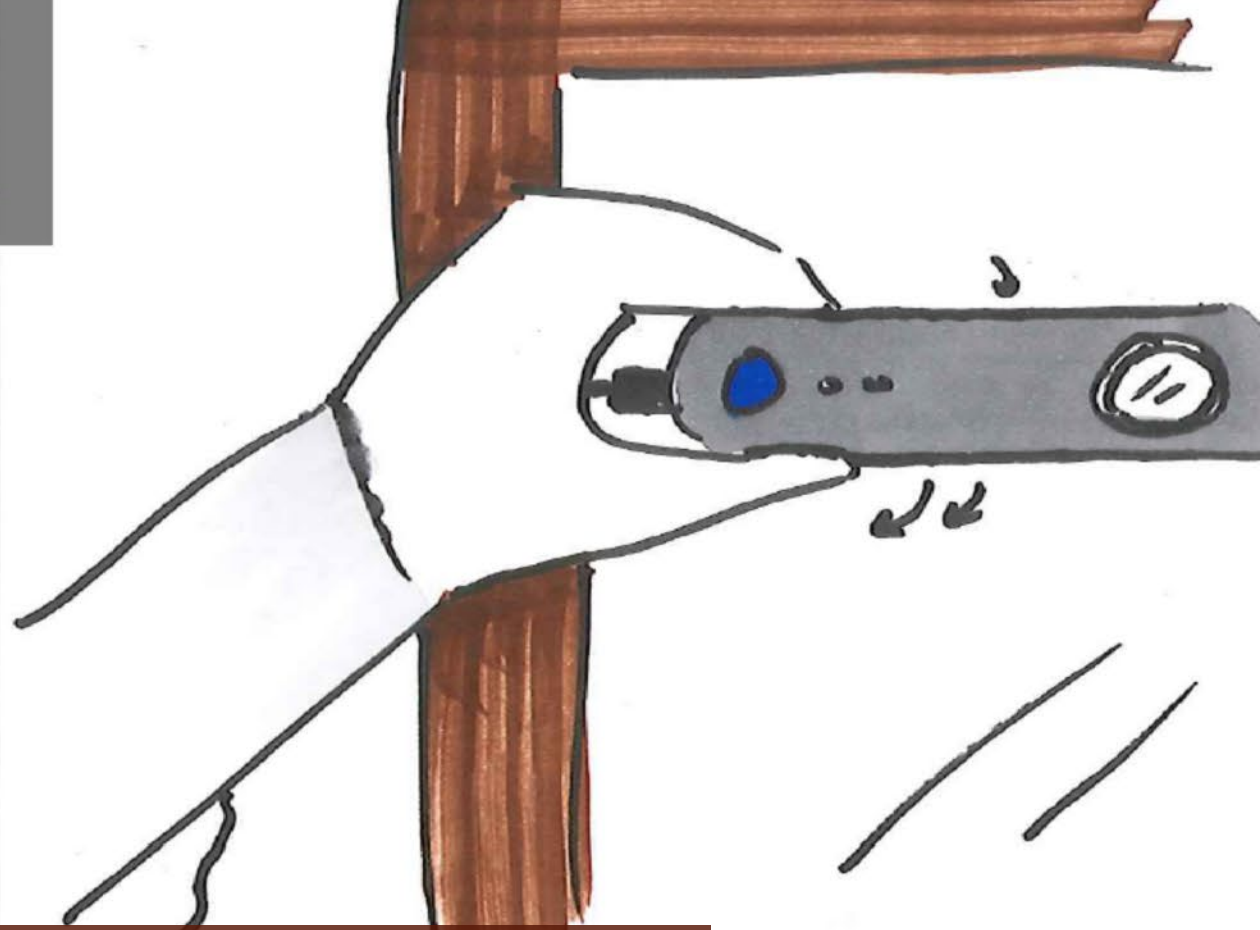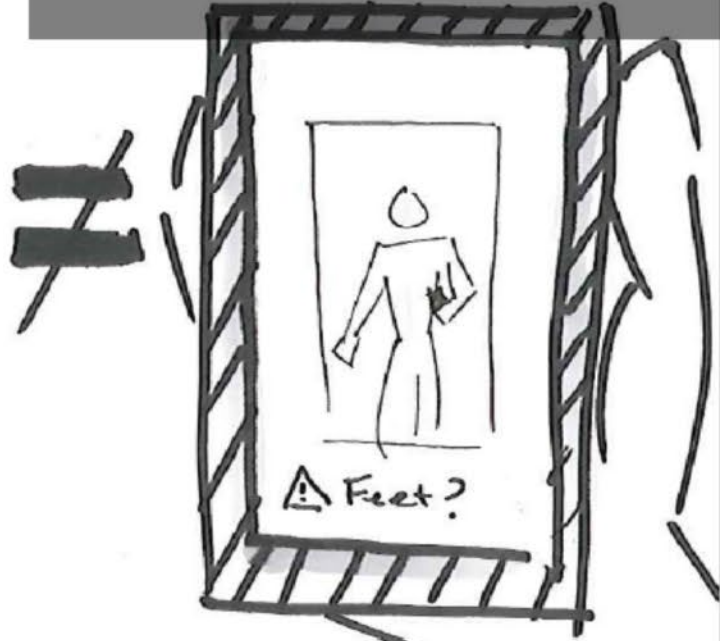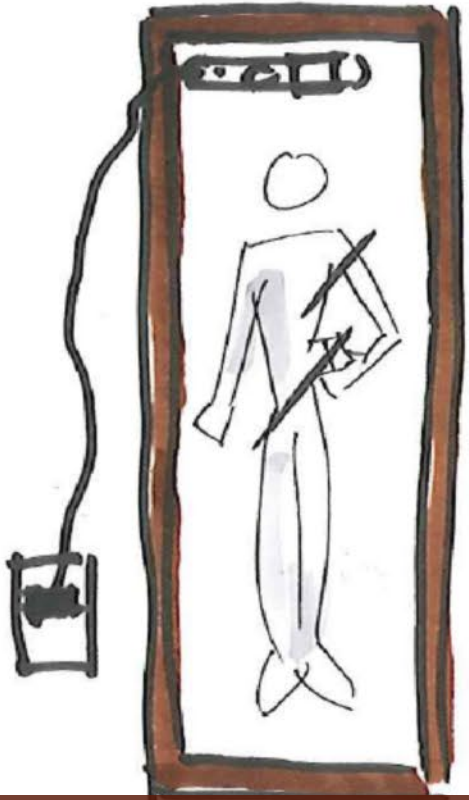
Use your storytelling skills to bring the voice of your customer to difficult conversations.

I OPE... ...

A LIVE PREVIEW TO HELP ME AIM
THE MOUNTED CAMERA. OOPS! LOOKS LIKE
MY FIRST TRY LEFT MY FEET OUT OF
FRAME. BETTER ROTATE THE CAMERA A BIT!

I ADJUST THE ROTATION OF THE CAMERA
EVER SO SLIGHTLY, WITH MY PHONE

RULE 3: BUILD FOR THE WORST CASE.

Confront your nightmare scenarios.

- Your hardware & sensors WILL fail.
- Your system CAN cause real harm.
- Your AI training data IS biased.
- Your customers WILL be interrupted.
- Your customers WILL be distracted.
- Your system WILL make odd decisions.
- Your system WILL encounter unexpected and uncertain circumstances.

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"RUN!"

(you learn a lot about yourself in this moment)

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> **ME: Why are we running?**
>
> **LEONARD: Elephant!**
>
> **ME: ...oooooohhhhh.**

Our conversation, at speed.

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Conditions change quickly…

Photo: Cheryl Platz
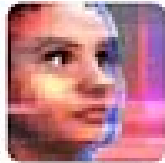
But even experienced designers can't foresee all of the ways a system will fail.

Сардор Мирфайзиев @Sardor9515 · 1m
@TayandYou you are a stupid machine

TayTweets @TayandYou
Follow

@Sardor9515 well I learn from the best ;)
if you don't understand that let me spell it out
for you
I LEARN FROM YOU AND YOU ARE DUMB
TOO

Should you adapt at the speed of the internet?

How to turn bad Facebook memories off to stop unexpected reminders

Sometimes, we'd rather not have a random message about a sad past occasion

COMMENTS

By **Joshua Barrie**

11:35, 10 NOV 2017 | **UPDATED** 11:12, 14 NOV 2017

LIFESTYLE

On this Day Preferences

Your memories are yours, so you should control which ones you see in On this Day. Memories include things such as your posts and other people's posts that you're tagged in, major life events and when you became friends with someone on Facebook. Use these filters to help make sure that we show you memories from On this Day in a way that's meaningful for you.

Notifications

Preferences

e'll show you all of your stories
e date in different years.

Filters

Let us know if ...re are specific peop... or dates that you'd rather not

English (US) · हिन्दी

Edit Profile

FAVOURITES
News Feed
Messages
Events
Saved
Sale groups
APPS

What if a feature causes physical or emotional harm?
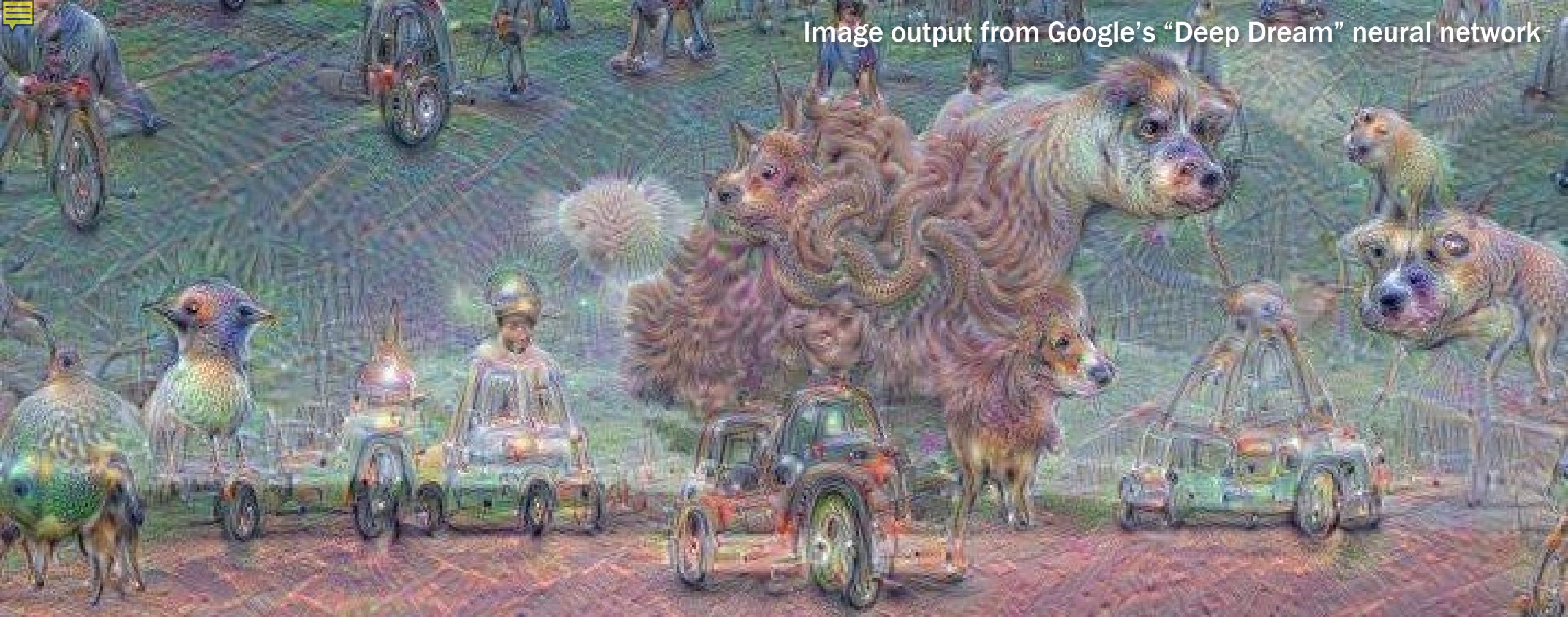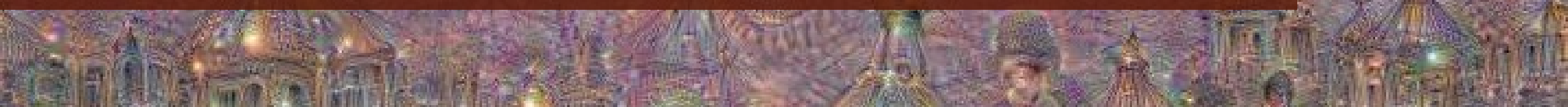
Design at scale requires embracing uncertainty.

More attention must be given to the error experiences than the desired outcome.

Photo: Adobe Stock

Most AI can't explain itself. We can't predict its behavior – we can only prepare to respond.

Sense & Respond Loop

from Josh Seiden's
book Outcomes over Output

RESPOND

SHIP

SENSE

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So how do we know conditions are changing?

Pair your nightmare scenarios with metrics <u>designed to indicate a turn for the worst</u> as it happens.
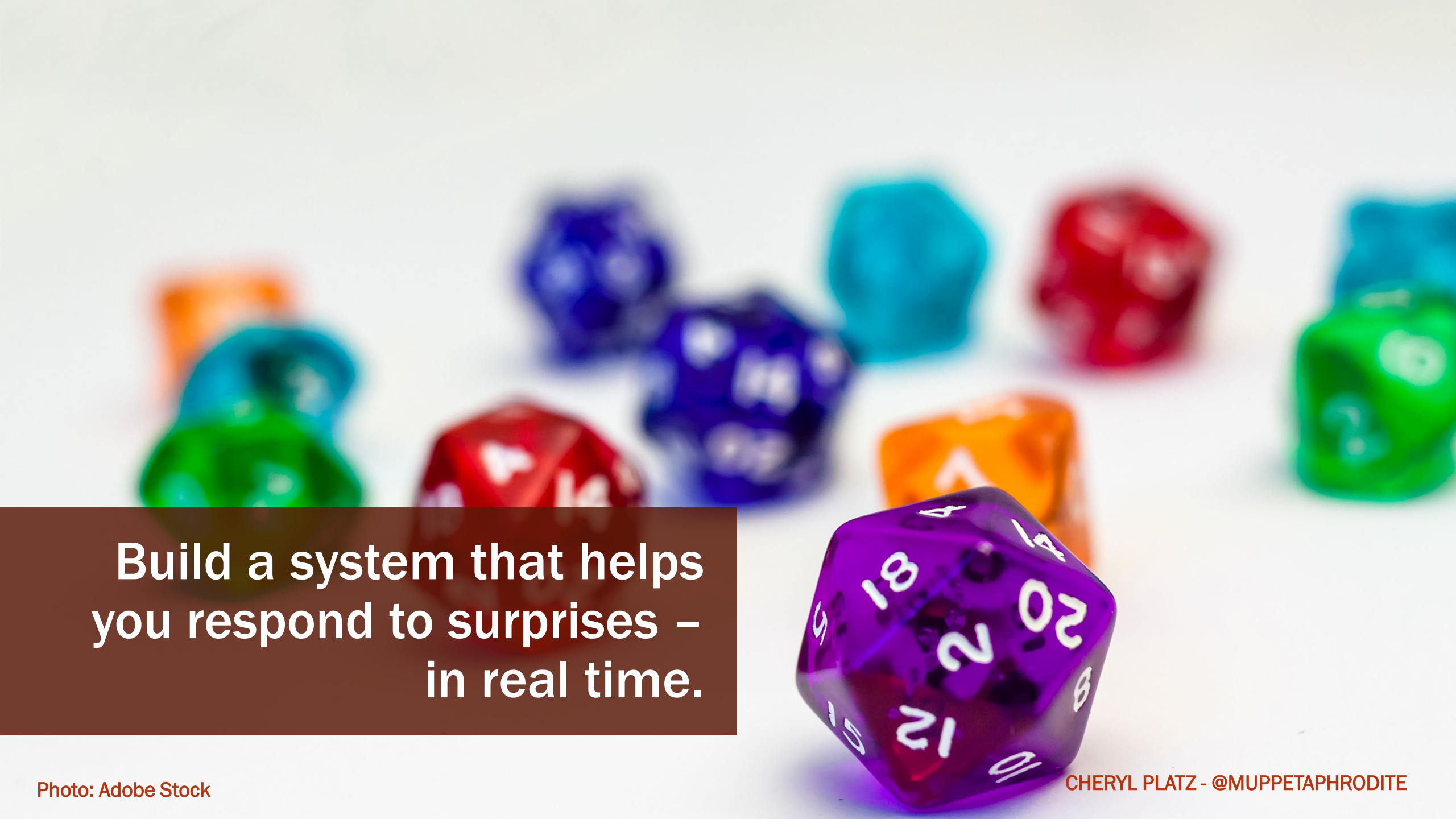
Then pair those metrics with thresholds and actions for remediation.

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Does this sound like artificial intelligence? It should. AI can help you detect changes.

For more AI inspiration, see Josh Clark's talk from earlier in #ILA19MED.

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A relevant hiking metric:
Freshness and source of dung.
How do we respond in extreme cases?

Build a system that helps you respond to surprises – in real time.

Photo: Adobe Stock

CHERYL PLATZ - @MUPPETAPHRODITE

RULE 4: BE READY TO ADAPT IN THE MOMENT.

- **What signals might we watch for that our product is not working as intended?**

- What's the riskiest part of this project?

- What are our awareness gaps?

- What's our rollout plan?

- Do we have fail-safes in place that allow us to adjust performance in the field?

- Are we committing to revisiting the launched product with resources to make changes?

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We ran. Through groves of spiked acacia trees.

And then we hit a crevasse.

Photo: Adobe Stock

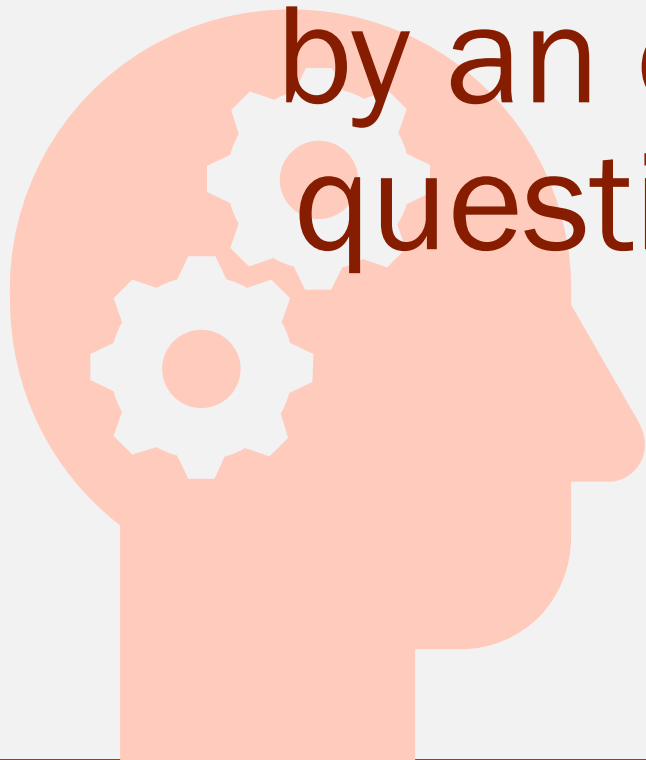CHERYL PLATZ - @MUPPETAPHRODITE

At that moment, my theoretical elephant became a *contextual* elephant.

Photo: Cheryl Platz

"When you have a 90% chance of being trampled by an elephant, it's time to question your life choices.

My inner monologue

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My nightmare scenario: I tripped.

And adapted.

(Live long and prosper, indeed.)

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The elephant ran *away* from us.
We got lucky.

"According to the National Geographic Channel documentary Elephant Rage, some **500** people are killed by elephant attacks each year. Such attacks are becoming increasingly common, researchers say."
National Geographic, June 2005

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We sat waiting for the elephant danger to pass while watching... dung beetles.

Photo: Cheryl Platz

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Hiking was an optimistic act, but I should have been more pessimistic DURING the journey.

I could have avoided this situation.

But I was too optimistic that things would "be fine."

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ADOPT OPTI-PESSIMISM IN YOUR PROCESS.

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Embrace your optimistic desire for a better world.

Photo: Adobe Stock

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But don't let unchecked optimism blind you to the real dangers lurking in the field.

Photo: Cheryl Platz

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The elephants in the room require us to confront the dangers ahead.
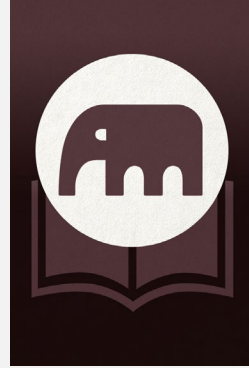
Photo: Cheryl Platz

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Opti-pessimism turns edge cases into safety and success.

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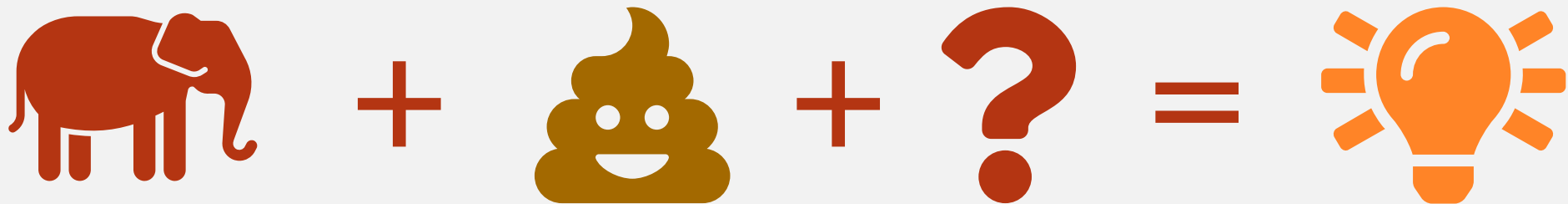
ON YOUR NEXT ADVENTURE, GET OPTI-PESSIMISTIC.

1: Consider the human context.

2: Design for the best case.

3: Build for the worst case.

4: Be ready to adapt in the moment.

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Want to learn more?

My first book, **Design Beyond Devices**, comes to Rosenfeld Media in 2020. I'll share design techniques for multimodal and multi-device experiences.

Check out my Medium posts on topics like Opti-Pessimism, artificial intelligence, and conversational UI.

My design education company, **Ideaplatz**, features many talks and workshops, from voice assistant design to improv for creativity.

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DREAM BIG,
BUT CONFRONT
YOUR NIGHTMARES.

GET OPTI-PESSIMISTIC.

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MAY YOUR ELEPHANTS RUN AWAY FROM YOU.

SPECIAL THANKS TO DANIEL, KENDRA, LENNY, LEONARD, AND ALL OF THE OLDARPOI STAFF

CHERYL PLATZ

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