

MaterialWise

A Pathway to Better Chemistry

GC3 Roundtable

May 9, 2018

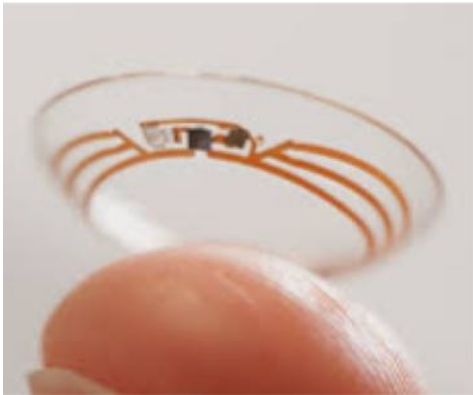
Stacy Glass
MaterialWise
stacy@materialwise.org



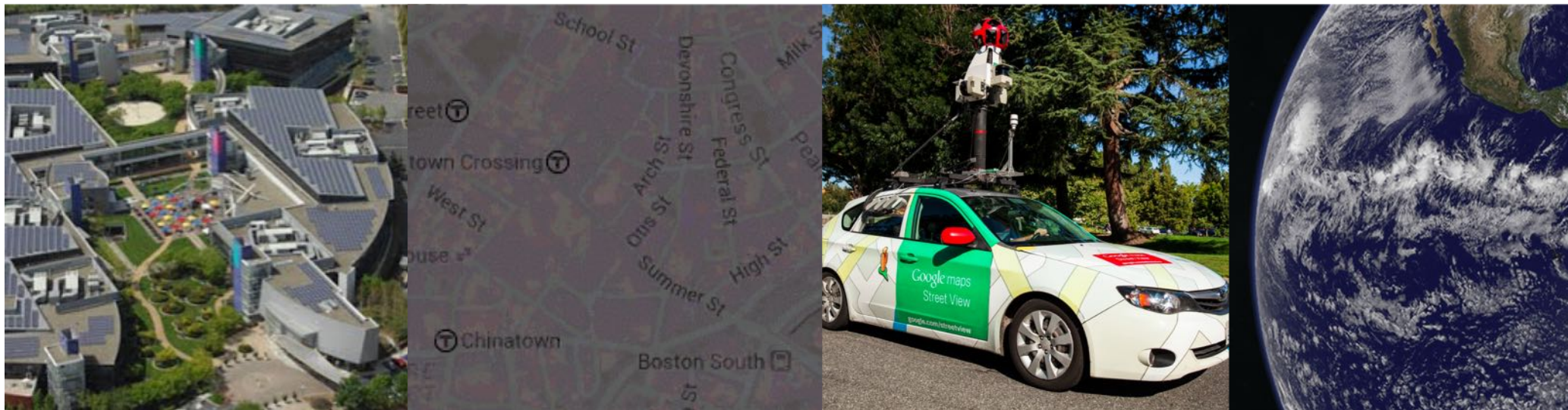
Priya Premchandran
Google, REWS

Creating Healthy
Environments at Scale

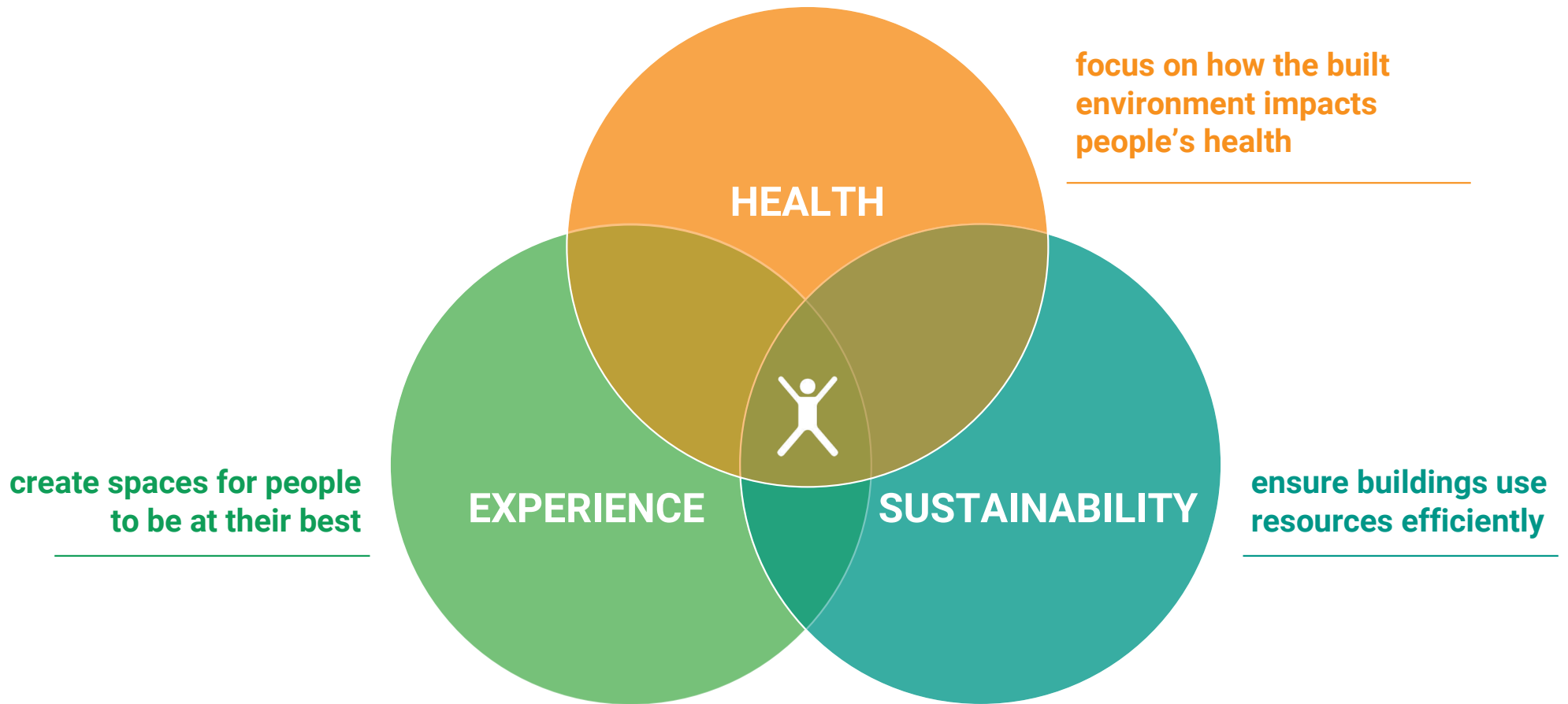
Google doesn't do things by halves. . .



...Sustainability is our quiet moonshot!



People are at the center of what we do.

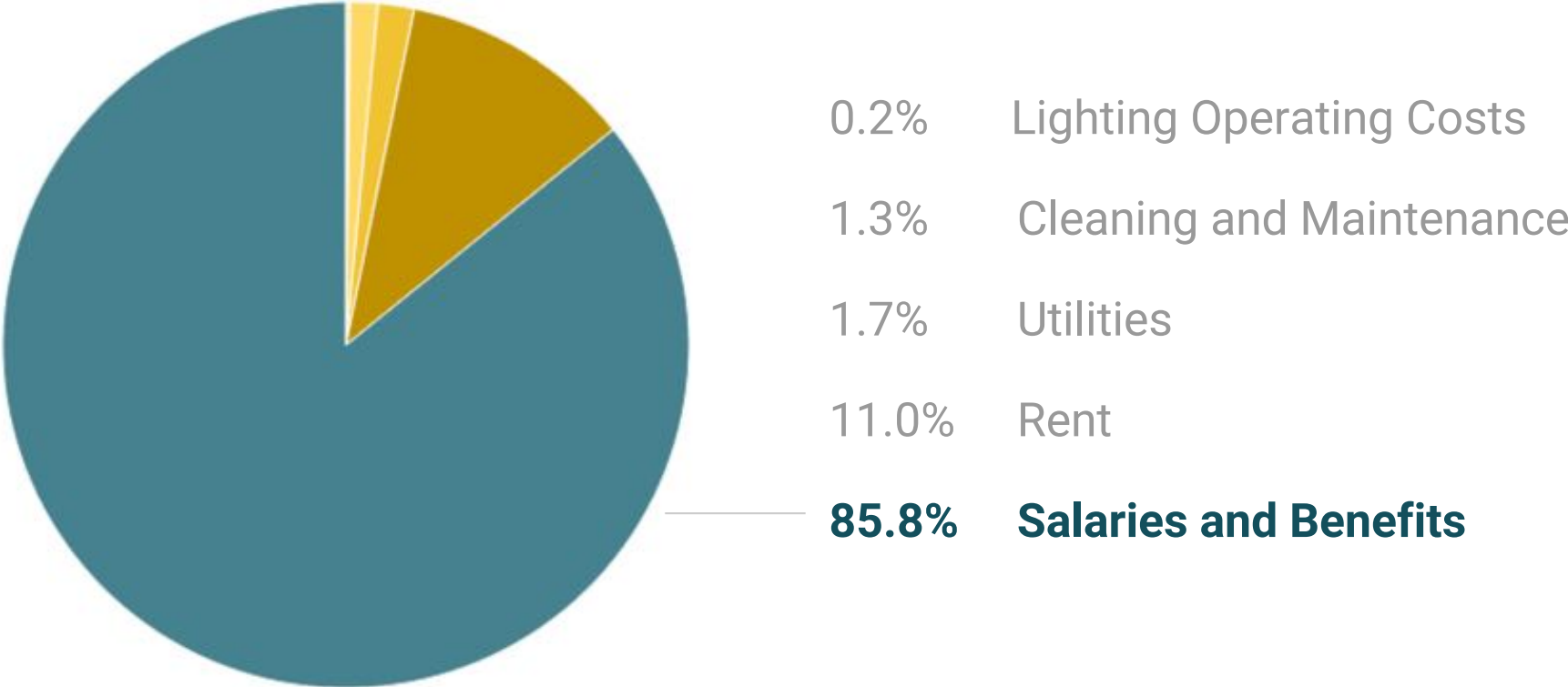


90%

Average amount of time we spend indoors.

A significant portion of this is spent at work.

Typical US Office Building Operating Cost



OUR GOAL:

Create amazing work environments that help Googlers perform at their best every day



Material Health Evaluation Programs Harmonization Opportunities Report

August 20, 2013

Report of the Material Health Harmonization Task Group

Lauren Heine
Clean Production Action

Matteo Kausch, Susan Klosterhaus & Stacy Glass
Cradle to Cradle Products Innovation Institute

Tom Lent
Healthy Building Network

Funded by Google through USGBC

Goals:

- Better products into the marketplace
- Simplify process for manufacturers
- Make selection and specification of healthy materials easier
- Speed adoption of LEED v4 Material Health credits

THE ROLE OF SAFE CHEMISTRY AND HEALTHY MATERIALS IN UNLOCKING THE CIRCULAR ECONOMY



MIKE WERNER,
ROBIN BASS,
PRIYA PREMCHANDRAN,
KATE BRANDT AND DARIEN STURGES

Google + Ellen MacArthur Foundation

What's next and where can
industry go collectively?

- Increase access to high-quality chemical hazard assessment data
- Create a demand signal for safer material innovation
- Drive innovation in recycling technology and infrastructure



Stacy Glass

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The background of the slide is a dark blue color with a faint, light blue pattern of interconnected lines and hexagonal shapes, resembling a molecular or network structure. The text is centered and rendered in a white, sans-serif font.

MaterialWise

The back story

By way of introduction

Material Wise is a non-profit initiative to advance better chemistry in the course of product design and manufacturing by expanding access to verified, actionable chemical hazard data.

Today, we'll share the backstory, our best thinking to date, and solicit your ideas.

What to expect

- 1.0 The back story
- 2.0 Research insights
- 3.0 Our best thinking
- 4.0 Your best thinking

Starting point

MaterialWise began as an internal initiative of the C2C Products Innovation Institute to bolster quality assurance for material health assessments in the certification program.

The Institute started with the premise that a successful solution is built on a deep understanding of the market need, and engaged in a formal research process and user-centered design approach with an outside firm.

Interviews across the landscape

Brands + Manufacturers

Doug Brown @ BASF
Connie Deford @ Dow
John Easton @ Dystar
Lauren Zulli @ Herman Miller
Yvla Weissbach @ H+M
Curtis Wray + Jennifer Reece @ HP
Ralph Nussbaum @ IKEA
Linda Gallegos @ Levi's
Rachel Berman @ Mecho
Ryan Williams + Saskia Van Gendt @ Method
Michael Sadowski + Libby Sommer @ Nike
Gale Tedhams @ Owens Corning
Jon Smieja + Kaitlyn Holt @ Steelcase
Troy Virgo @ Shaw
Feliks Bezati @ Tarkett

Experts + Stakeholders

Art Fong
Matteo Kausch @C2C PII
Annie Gullingsrud @ Fashion Positive
Michelle Turner @ CPA (GreenScreen)
Tom Lent @ HBN
Wendy Vittori @ HPD
Lauren Heine @ NW Green Chemistry

Assessors + Profilers

Patrick Van Sprang @ ARCHE
Ignasi Cubina @ EcoIntelligentGrowth
Christoph Semisch @ EPEA
Jay Bolus @ MBDC
Meg Whittaker @ ToxServices
Annette Hastrup @ Vugge til Vugge

Technology Providers

Hardik Savalia @ BLab
Roy Vercoulen @ Circular IQ
Joe Rinkevich @ SciVera
Tim Aardenburg @ SIM
Pete Girard @ ToxNot
Diane Craig @ InCommand
Larry Kilroy @ Portico

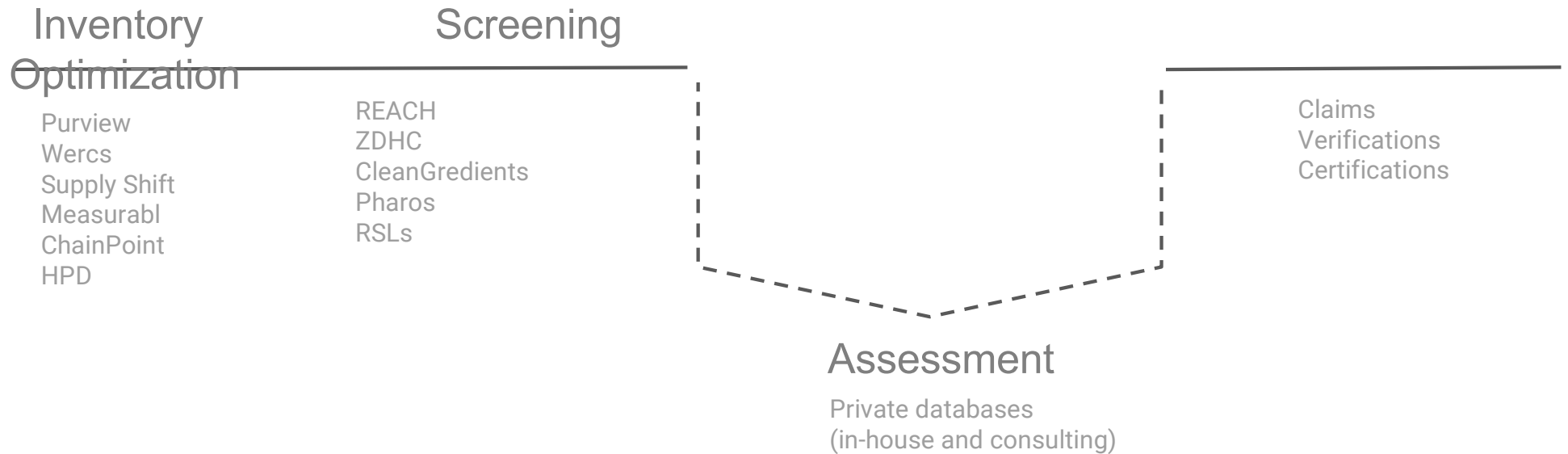
Retailers + B2B Buyers

Priya Premchandran @ Google
Greg Downing @ Target
Ashley Hall @ Walmart
Mike Werner @ Google Hardware

Premise: The path to optimization

Inventory	Screen	Assess	Optimize
<p>Know what is in the product. Supply chain transparency.</p>	<p>Screened against authoritative lists and/or RSL's to identify known hazards</p> <p>A great place to start. A terrible place to stop.</p>	<p>Full chemical hazard assessment are needed to understand full human and environmental impacts.</p> <p>Conducted by a chemist or toxicologist.</p>	<p>With more complete data, select a less bad alternative, move toward safer chemistry, achieve optimized = safe for humans and the environment.</p>

Premise: Share Data to Close Gap



Headline 1: We were wrong!

We started this project with a focus on assessors.

We discovered through our research that the demand-side is highly motivated, manufacturers have the most pain, interest and leverage, and suppliers needed a voice.

We shifted our focus to explore value chain collaboration.

MaterialWise Funders



SCHMIDT FAMILY
FOUNDATION



C&A Foundation

Roy A Hunt Foundation



MaterialWise Co-Design Partners



C&A Foundation

Insights



Headline 2: Buyers are motivated

- More at stake
- More control
- More leading
- More learning

Headline 3

Manufacturers have shared pain

- Gaps in access
- Cost and inefficiency
- Depth of data
- Lack of harmonization
- Quality assurance

Headline 4:

Suppliers need to be part of the process

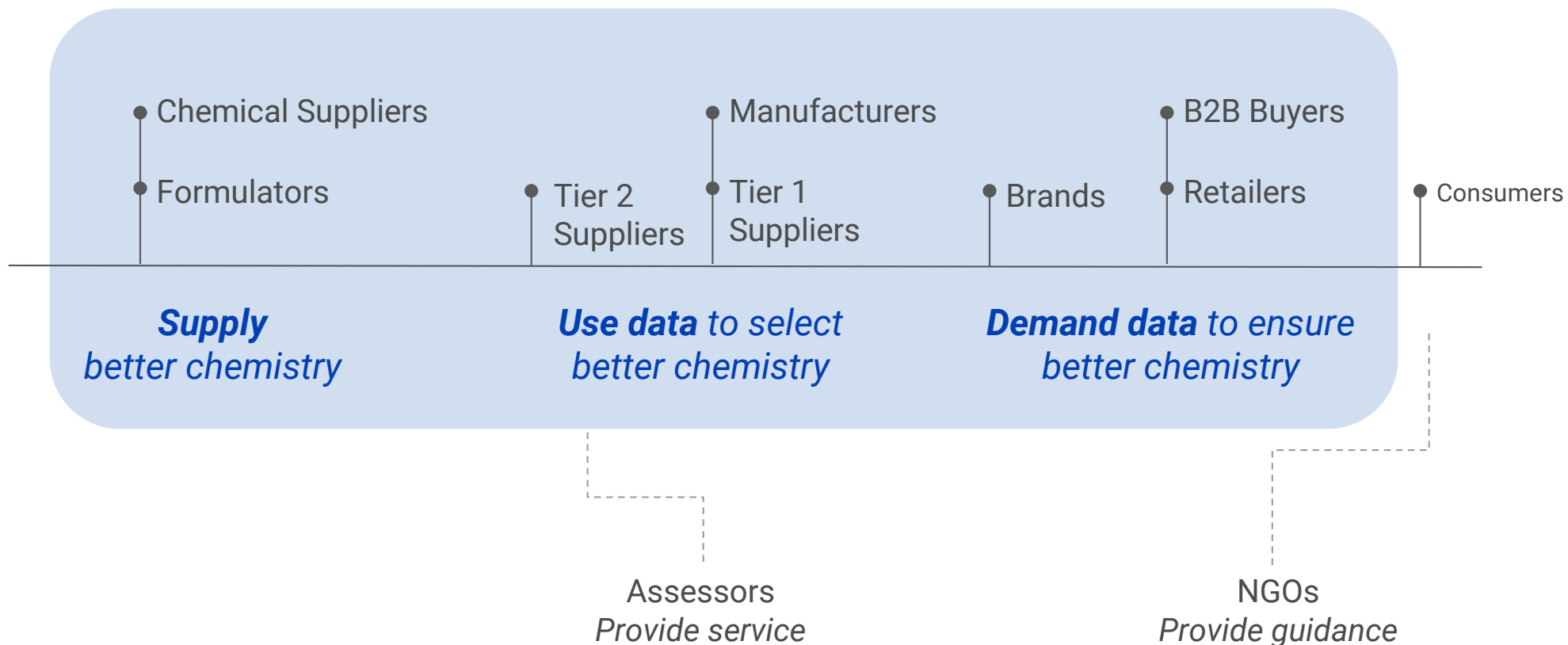
- Demand signal
- Secure environment
- Reasonable requirements
- Purpose of request
- Clarity on criteria
- Assessment outcomes

Headline 5:

Assessors/Profilers are game, if...

- Business growth
- Fair compensation
- Quality assurance
- Seamless integration

Value chain collaboration





Opportunity

Problem Statement

Restricted substances lists indicate what not to use, but the next question is what to use instead. Without robust, quality data, this question cannot be answered, and everyone in the value chain is vulnerable to regrettable substitutions.

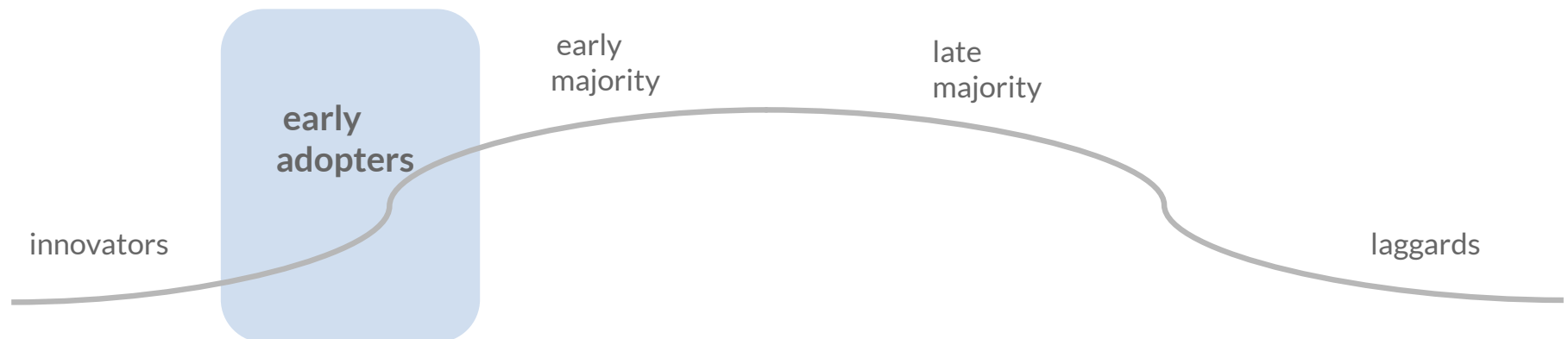
Reliable chemical data underpins the entire pathway to safer, healthier products. It illuminates and leads to better choices. But in the current system, data is a barrier, a bottleneck and a risk.

Assessments are expensive, labor-intensive, sometimes inconsistent and inaccessible to most. In the current system, scale is simply not possible. This has to change.

Market inflection

Next wave. Innovators have been leading the way, but all signs point to the next wave of adoption. We want to make sure that the next adopters understand the value of expert-level assessment data to improve their products.

Different needs. Early adopters and beyond represent a large market opportunity but they have different needs than innovators. They will need lower cost, speed, and meaningful interpretation of the data built in. These are pain points we can help solve.



For Internal Use Only - Do Not Distribute

Meet Early Adopter Ellen



- Engaging with suppliers.
- Realizing compliance is not enough.
- Experiencing the limitations of an RSL.
- Have some working knowledge of product chemistry but no chemists on staff. (Read: technical expertise is limited)
- Eager to improve products but have limited funds and resources to do it.
- Seeking actionable data for product improvement and optimization.

Solution

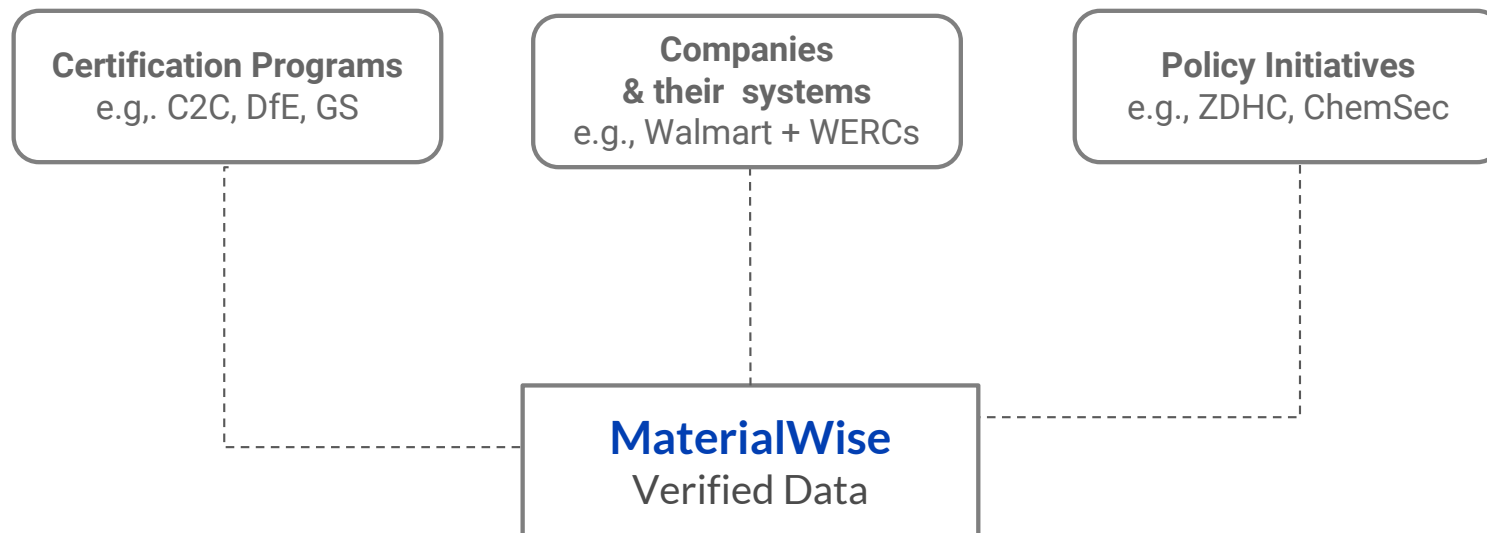
(our current best thinking)

Value Proposition

A value chain collaboration to advance better chemistry in the course of product design and manufacturing by providing cost-efficient access to verified, actionable chemical hazard data.

A supporting solution

A solution that empowers industry solutions already in play - providing a ***data service and input*** to support decision-making for safer products and guidance on policy.



Transformation by design

1. Create efficiencies
2. Ensure quality
3. Deliver actionable information
4. Align to business drivers

1. Create efficiencies

- **Harmonization** of synchronous data in leading schemes and frameworks
- **Clearinghouse** with single profile per CAS#
- A **cloud-based platform** that enables secure access
- Align and **convene demand** for shared priorities to realize cost/benefit sharing

Getting to Better Chemistry

Define priorities

Select chemicals of concern in products based on RSLs, MRSLs, chemicals of concern

Identify viable alternatives

Research alternatives and work with pilot group to identify a short list in key functional use categories

Conduct assessments

RFP for toxicological assessments to identify “yellows” and “greens”

Verify assessments

Verification process to ensure QA and channel constructive challenges

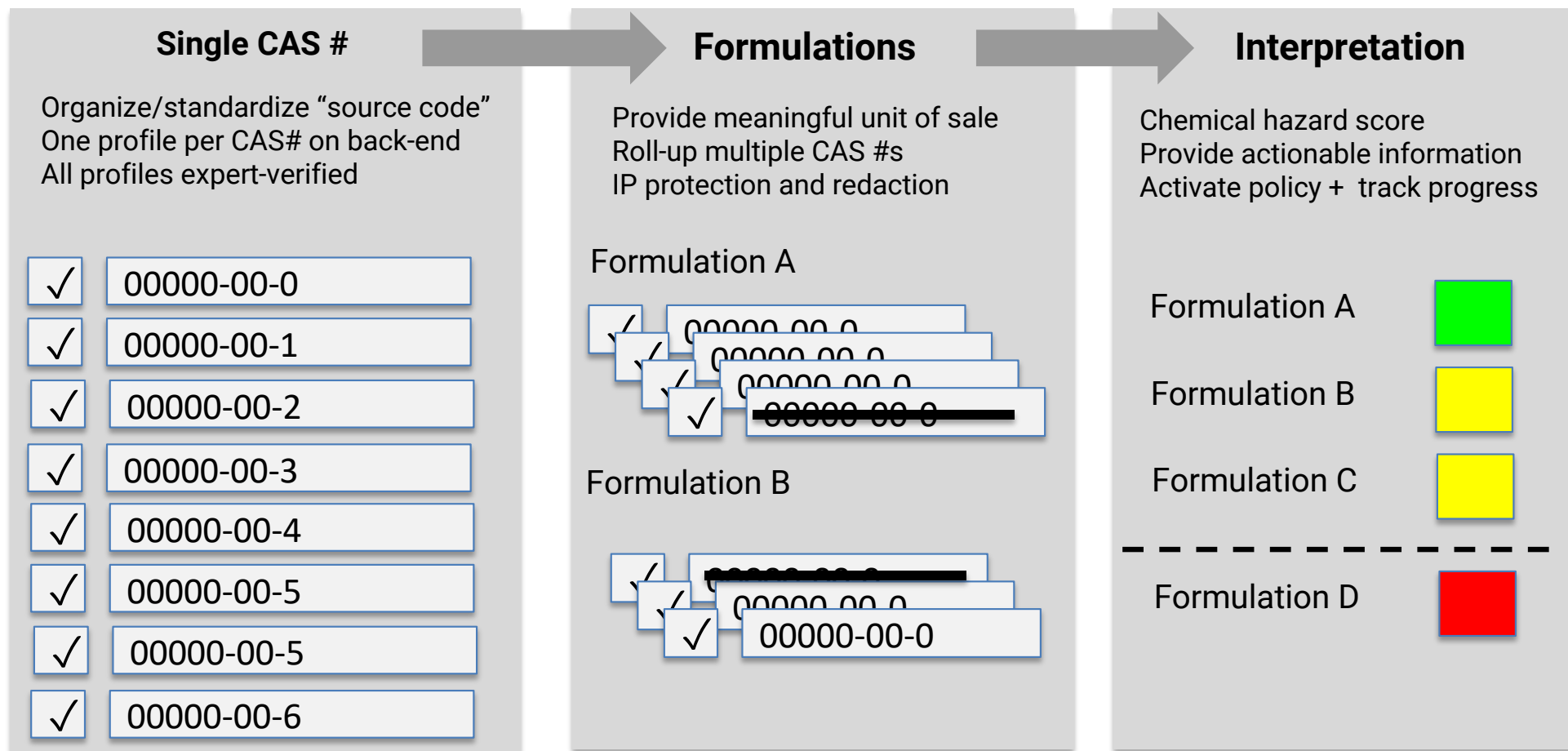
Share assessments

Access and share verified chemical assessments via platform or API

2. Ensure quality

- Rigorous assessment **methodology** based on best practices
- Qualified, experienced **assessors**
- A **verification process** for chemical hazard data that enforces quality, standardization and consistency. Includes challenge process.
- **Governance** to ensure transparency, quality, continuous improvement, and integrity in operations

3. Deliver actionable information



4. Align with business drivers

- An innovative **cost/benefit sharing structure** that is fair, equitable and progressive for those assessing data and those using it.
- Increases quality (verified and current)
- Incentivizes early participation
- Transparent to all
- Flexible enough to handle new ideas

We completed due diligence for five potential transaction models (plus variations) and landed on a promising model that meets these requirements. We're calling it the Portfolio Model.

Expected outcomes

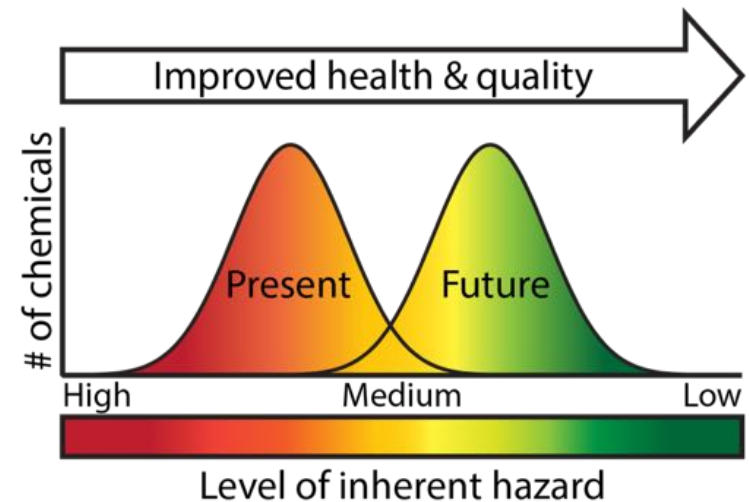
Chemical hazard alternative assessment portfolios are available for users

User can:

Avoid regrettable substitutions

Identify incremental improvements

Call out safe alternatives



Summary



Move beyond RSL's

How

Value chain collaboration to advance better chemistry that

1. Creates efficiencies
2. Ensures quality
3. Delivers actionable information
4. Aligns to business drivers

The background of the entire image is a landscape photograph of a vast field of tall grasses or reeds under a dramatic sky at sunset or sunrise. The sky transitions from a deep blue at the top to a bright yellow and orange near the horizon. The field is in the foreground, stretching towards the horizon. On the left side, there are two large, dark grey quotation marks.

“

You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.

— Buckminster Fuller



Your best thinking

Invitation to co-design ...

- How might we define shared priorities for better chemistry?
- What type of governance is needed to build trust in the quality of this data?
- What data is most actionable for *your* organization to improve products?
- What would motivate your organization to participate in a solution like this?