THE STATE CHAMBER OF OKLAHOMA

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THE STATE CHAMBER

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See the future. Act today.

Turn Historic Disruption Into a Platform for Competitiveness and Growth

Paul Breitenbach, CEO of r4 Technologies

September 20, 2022

Leap-frogging other states to put Oklahoma at the top of all states

- **Why supply chains are so complicated – no longer just "supplies"**

- **Priceline – What is the $1 billion idea?**

- **r4 – Using AI technology to solve old problems**

- **Supply Chain solutions for OK to think about**

Never Let A Good Disruption Go To Waste

All the rules are getting re-written (as we speak)
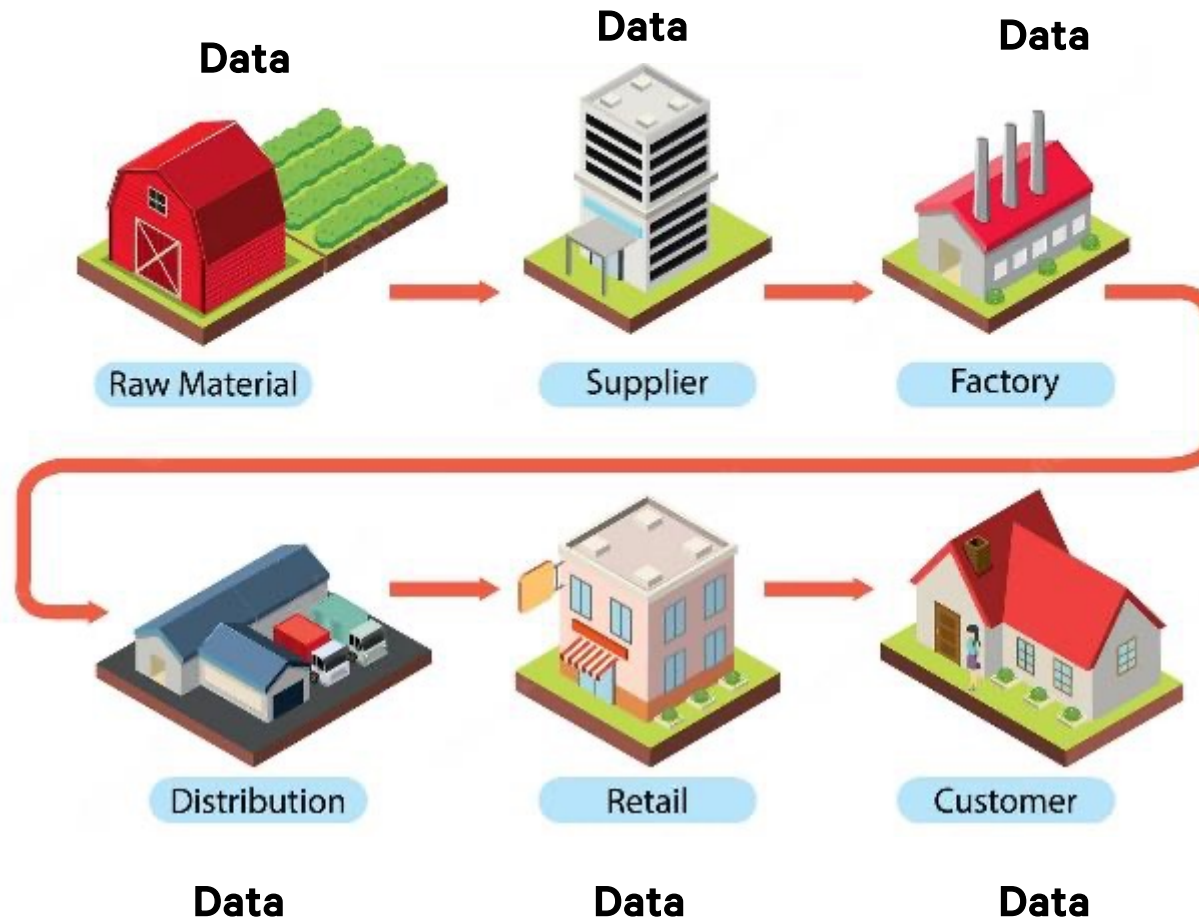
New winners and losers are emerging

There is over $100 trillion in value trapped in legacy systems, processes and cultures

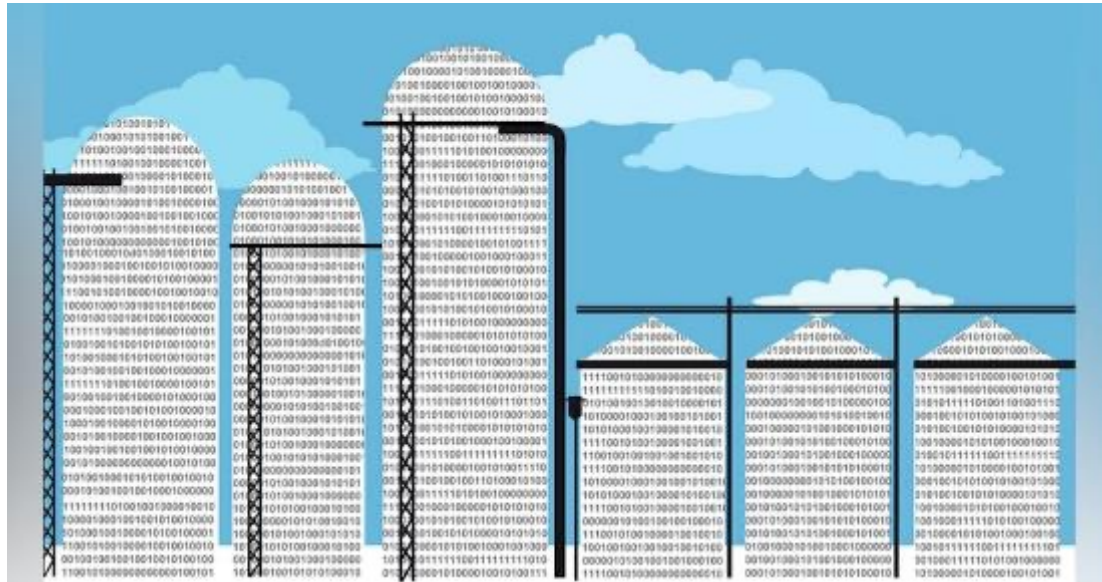# Supply chains were complicated before the pandemic …now they are chaotic

Data   **Data**   **Data**

Raw Material → Supplier → Factory

Distribution → Retail → Customer

Data   **Data**   **Data**

Internal data is scattered all over the place. External data is even worse.

Dozens/ Hundreds of Internal Data Silos

Dozens/ Hundreds of External Data Silos
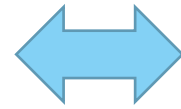
Match millions of people to millions of SKUs

Our reality: old systems were not built to do this

![priceline.com logo]

How did priceline disrupt the travel industry and create $100B in shareholder value?

- **Priceline DNA – extracting profit from data**
- **Disrupted the travel industry: supply-side to demand-driven**
- **Making "yield management" a cross-enterprise optimization**

83x — PCLN / BKNG

43x — AMZN

21x — GOOG

**Return to Shareholders
Aug 2004 – Jan 2019**
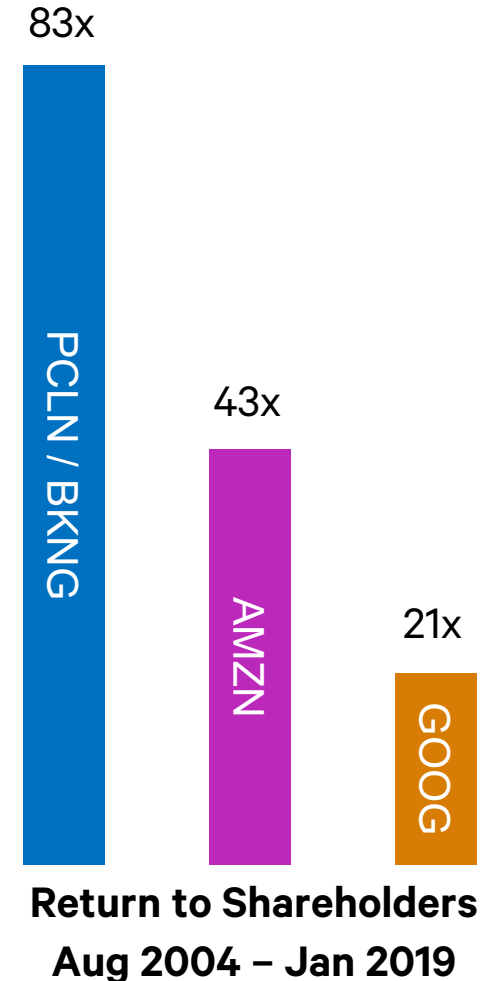
What is the secret behind priceline.com®

Data

➡️ **Match Demand and Supply**

➡️ **Personalized consumer experiences**

Result: Optimized inventories, less discounting, lower consumer costs, massive increases in profitability

r4 Technologies – brings new AI technology to solve old problems

- Created in 2013 by the founders of priceline.com

- Deliver AI as a Commercial-Off-The-Shelf service to business users

- Powered by the world's most advanced Cross-Enterprise AI Engine

- Deployed with manufacturers, retailers, and Department of Defense to predict demand and modernize supply chains

Used by Fortune 1000 Brands

$ Billions in growth delivered to date

100B+ data points to drive decisions

ALLIEDUNIVERSAL SECURITY SERVICES

Academy SPORTS+OUTDOORS

WeVee

BWG FOODS

U.S. DEPT OF DEFENSE

PartnerRe

NCL NORWEGIAN CRUISE LINE

HOMEPLATE

Bayer

CrowdPoint TECHNOLOGIES

ARES

"Delivering the right insights to the right leaders at the right place and right time to drive mission success"

A Business-User-Driven AI Engine: Outcomes

The only AI technology where customers do not need data scientists

Multiple Business Users

Integrated Business Planning

Marketing

Supply

Sales

Consumer Targeting	Product Recommendations	Promotion Optimization	Personalized Loyalty
Order Prediction	Replenishment Optimization	Inventory Optimization	Production Planning
Location Targeting	Product Recommendations	Price/Promo Optimization	Optimal Planograms

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Modernization … Transformation

Sporting goods retailer to drive cross-sell & upsell

Pinpoint highest value customers & match product recommendations, engage & drive growth

TARGET MOST VALUABLE CUSTOMERS

Match customers to specific products by store and type (growth & high margin segments)

FEATURE HIGH IMPACT ITEMS BY CATEGORY & SEASON

illuminate feature items by location that influence purchase within most valuable customer segments

RECOMMEND

Proactive actions from across DM, mass, and digital channels to increase visits and purchase OOS, and optimize assortment

RESULTS

- **55% increase in margins**

- **60% improvement in marketing response**

- **10% increase in sales**

- **~185% Increase in market cap last 12 months**

Reducing Incidents by 47% in Security Industry

From sense and respond to prepare, predict, and prevent

Modernization ... Transformation

PREDICTIVE AI

Security guards generate incident reports, and prediction of next event triggers prescriptive action

LEARNING SECURITY DATA

AI discovers patterns of "what, where, when" and assigns values

WIDER BREADTH OF INFORMATION

Clusters of "look-alike" sites share data, and Pitney Bowes data is the anchor, a view of external risk

RESULTS

- **Reduced claims (incidents) 30%-47%**

- **The r4 AI predictive system upsold at a 60% rate to clients.**

- **This led to a 4x PE Exit with company being acquired by the Industry Leader.**

- **+600% increase in market cap with $150mm of new EBITDA**

Targeted selling and product recommendations

To drive incremental revenues

Situation:

- Share leader in casepack in large-format retail; margin erosion due to private label
- Profit shift to "immediate consumption" requiring new points of distribution in C-stores and large format
- New program required for Direct-Store-Door distribution network

PROFITABLE NEW DISTRIBUTION

Identify highest-potential outlets to gain new points of distribution for highest-margin "Immediate Consumption" SKUs

OPTIMAL PRODUCT PLACEMENT

Top products for increased replenishment volumes and new placement for each account with "reasons why"

KEY ACCOUNT COLLABORATION

Optimal orders for large format chains to minimize out-of-stocks and tailor assortment, leading to improved promotion planning

RESULTS: $350M New Sales

Increased IC Revenue- $163M

Increased Core Revenue - $108M

Reduced Out-of-Stocks- $76M

250% increase in shareholder value

Leapfrog 'Supply Chain' Solutions for Oklahoma
Thinking Out of The Box

Building new technology takes forever and is expensive

- **3-10 years**

- **Tens and hundreds of millions of $$**

- **Hire large staffs of people, which are impossible to find**

- **With budgets that we don't have**

Commercial Off The Shelf (COTS)

- **Automated data ingestion of all types/sources**

- **Fully integrated AI Cloud Market Model**

- **No "rip and replace" of legacy systems**

- **Deployable in a few months with certainly of results**

- **Creates a secure, proprietary AI driven data platform (own your data, no IP leakage)**

- **Upskills and leverages the people you have without hiring dozens of new people**

Three game-changing <u>Supply Chain</u> opportunities for Oklahoma, powered by AI

People → **Jobs**   **From: People Find Jobs to Jobs Find People**

People → **Health Care**   **From: React and Pay to Predict and Prevent**

People → **SNAP Food**   **From: Limited food to Leverage Smart Surplus**

Three game-changing <u>Supply Chain</u> opportunities for Oklahoma, powered by AI

Match: **People** ➡ **Jobs**   **People** ➡ **Health Care**   **People** ➡ **SNAP Food**

Proactive Workforce Job Recommendation Engine	Predictive AI Public Health Outreach Engine	Modernized SNAP "priceline for food"
Lower unemployment	Improve health outcomes and lower costs of providing healthcare	Harness demand from SNAP Families as a market force
Improve "under-employment"		
Better college/ high school graduate placements	Understand drivers and predict needs at a neighborhood level	Match $250b of "to be wasted food" to local SNAP demand at a discount
Targeted economic development to improve job diversity	Drive proactive, tailored, and relevant actions	Increase SNAP buying power 2-3x and reduce food waste

Proactive Workforce Job Recommendation Engine

"Let the Jobs Find the People"

Next-generation Lifetime Career Advancement with AI

- **Create a "Jobs and Skills Recommendation Engine" to engage target audiences and match to the best resources and opportunities**

  > Opt-in to engage at <u>all</u> life and career stages

  > Proactively matches and assists unemployed individuals in finding new employment opportunities. Assists with career development using look-alike "people like me, fit these jobs."

  > Upskills the "under-employed" by suggesting specific new skills, certificates to obtain higher paying jobs

  > Modern portal/mobile user experience

- **Put students and under-employed workers on a path to 21st Century careers to drive economic growth for the State**

  > Identify critical roles for initial focus in selected tech/healthcare disciplines

  > Align current educational resources and create new course and delivery methods

  > Target and upskill high school students, undergrads, partially completed, unemployed, underemployed

  > Connect to aligned network of educational institutions

- **It costs $9,875 a year for every 25-34 year old unemployed person. That number goes up significantly with age.**

AI Drives Optimized "Supply Chain" of Employment Outcomes

(1) Identify high priority jobs
- Industry requirements and gaps
- Experience and skills requirements
- Potential talent pools

(4) Match individuals to skills and jobs
- Targeting and engagement
- UX to capture data
- Work, school and life experiences
- Skills and interests
- Personal potential

Roles & Skills

Students & Jobseekers

Employers

Educational Resources

(2) Public/private employer incentives and programs
- Industry attractiveness
- Employer performance
- Employer potential

(3) Upskill: align resources to fill skill gaps
- Identify experience and skills gaps
- Select courses and resources for upskilling
- Create new delivery channels

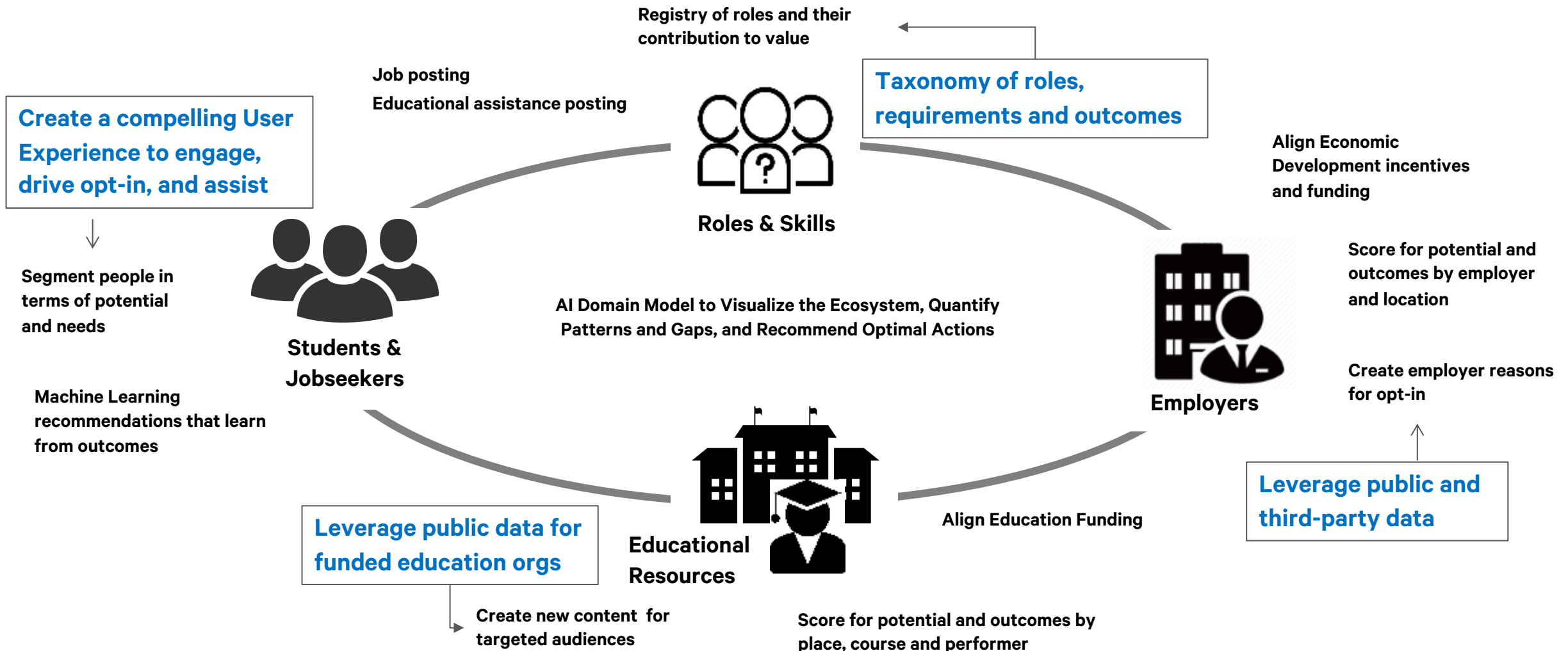# Enabled by State-of-the-art Data, AI Technology, and Digital Business

Registry of roles and their contribution to value

Job posting
Educational assistance posting

Taxonomy of roles, requirements and outcomes

Create a compelling User Experience to engage, drive opt-in, and assist

Align Economic Development incentives and funding

Roles & Skills

Segment people in terms of potential and needs

Score for potential and outcomes by employer and location

Students & Jobseekers

AI Domain Model to Visualize the Ecosystem, Quantify Patterns and Gaps, and Recommend Optimal Actions

Employers

Machine Learning recommendations that learn from outcomes

Create employer reasons for opt-in

Leverage public data for funded education orgs

Leverage public and third-party data

Align Education Funding

Educational Resources

Create new content for targeted audiences

Score for potential and outcomes by place, course and performer

Predictive AI Public Health Outreach Engine
to Improve Outcomes and Lower Costs

Decisions at the Speed of Need: Micro-Targeting for Public Health, Education and Safety Across Health Issues

Modernization … Transformation

Public Health Common Operating Picture

Safety & Emergency Response	Health	Education
■ Block group level patterns and predictions for:	■ Holistic understanding of drivers at block group level to target:	■ Block Group AI models to monitor and predict:
■ Disaster relief	■ Vaccines, C-19, Flu, STDs	■ Gun safety
■ Texting, drug-impaired and buzzed driving	■ Opioid addiction, youth vaping	■ Racial justice, diversity & inclusion
■ Child car safety	■ Suicide prevention & mental health	■ Workforce readiness
■ Emergency preparedness	■ Type 2 Diabetes, High Blood Pressure, Lung Cancer	■ Retirement
	■ Alzheimer's and Autism awareness	■ Girls in STEM, adoption
	■ Caregiver assistance	■ Hunger
		■ High School equivalency

Public Health Block Group Level Operating Picture Predicts, Pinpoints and Drives Action

Modernization … Transformation

Block Group Vaccine Attitude & Hesitancy Revealed
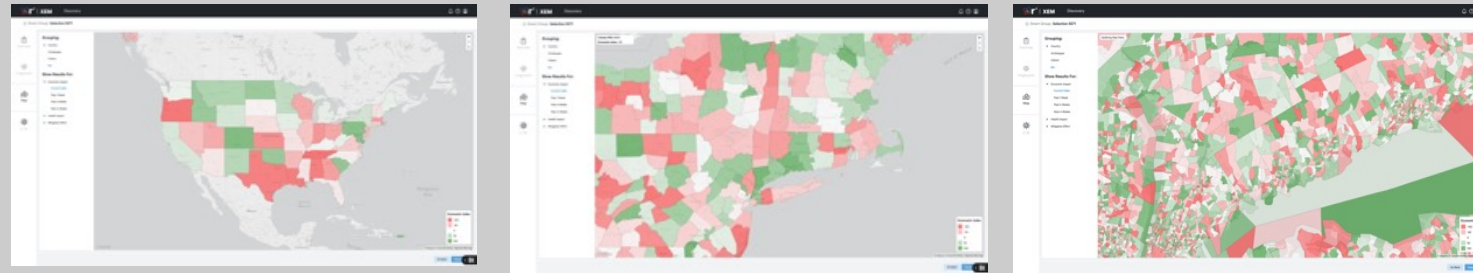
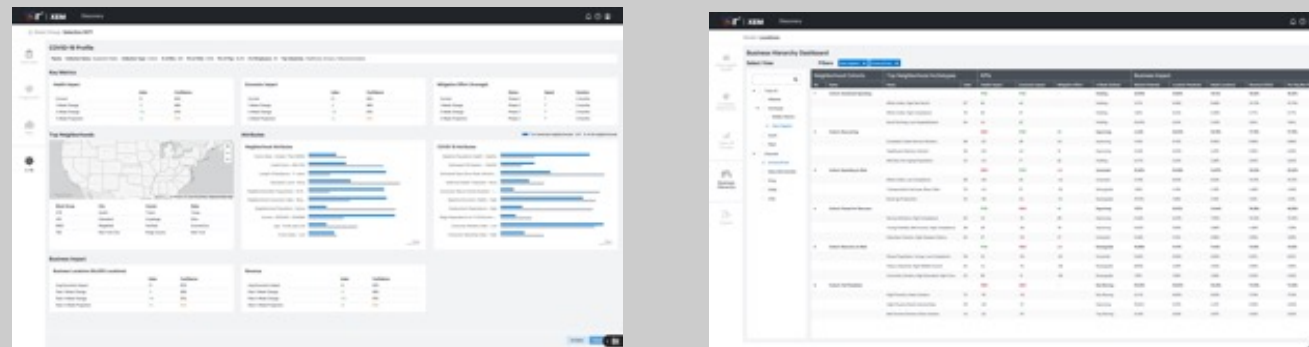Seamless Data Combination   Micro-targeted Messages & Actions   Coordinated Program Response

Data Manager

Automated Data Ingest

AI Model

Messages & Interventions

Real time local neighborhood street view of hesitancy

Local Health Department Coordination

r4's Public Health AI Platform Reveals Drivers, Delivers Predictions and Recommends Actions at a Neighborhood Level

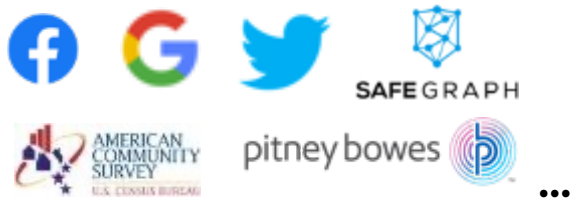## Over 100 Data Sources Combined Automatically

100+ Public & 3rd Party Block Group Data Sources

Daily Vaccination Data

Block group data from 100 sources demographics, socioeconomics, employment, purchase behavior, business locations consumer web behavior, social network sentiment, visits to place of interest…

Artificial Intelligence Model of Neighborhoods

Demographics
- Population
- Households
- Household Type
- Age
- Race
- Ethnicity
- Gender

Socioeconomics
- Income
- Education
- Housing Value
- Population Density
- Consumer Vitality
- Occupations
- Crime Rates

Block Groups

Lifestyles
- Category Purchasing (70+ Categories)
- Places Visited

Businesses & Employment
- Business Entities
- Proximities
- Concentrations
- Employment Levels

Attitudes
- Believe in Benefits
- Civic Duty
- Medical Questions
- Fear
- Anti-Vax
- Libertarian
- Non-Believer
- Self-Interested
- Conspiracies

Recommends Messages & Actions

- Identify Vaccine Access Gaps to prioritize and coordinate supply logistics

- Reasons Why for each neighborhood based on demographics, socioeconomics, behaviors and sentiments

- Recommend Best Messages for each neighborhood with creative version and channel

- Output to Command Center and Local Health Depts for local interventions and outreach

- Federated to marketing agencies for automated campaign management

Modernize SNAP - "priceline for food"
Match "to-be-wasted" food to the demand for SNAP
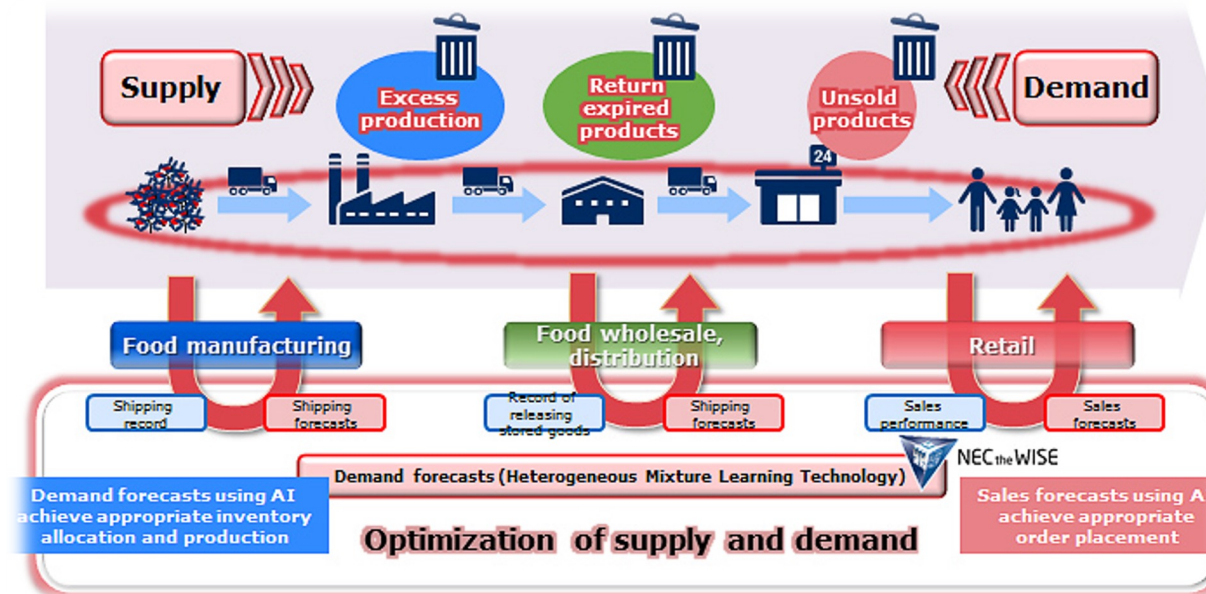
"priceline for food"

- **Match ~$250B "to be wasted food" with ~$250B in Nutrition Assistance**

- **priceline disrupted the Travel Industry by using data and technology to harness consumer demand**

- **This same capability can be applied to the modernization of US Nutrition Assistance programs**

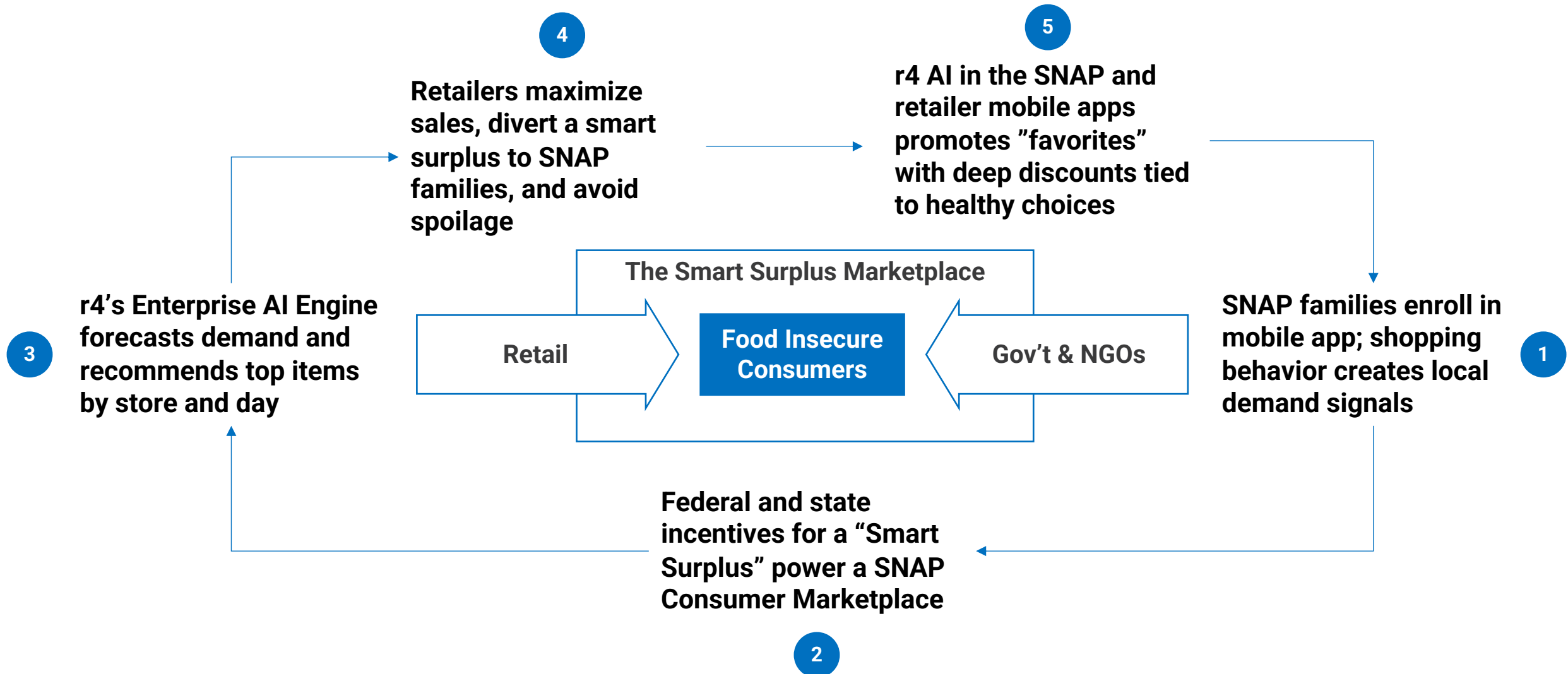## Modernized Nutrition Assistance Program

Create a SNAP Digital Marketplace that incents retailers to divert fresh food to local SNAP families, <u>before it spoils</u>

2-3x SNAP buying power + reduced waste

The catalyst: turn SNAP food demand into a market force that creates a *Smart Surplus*

Modernization … Transformation

(4) Retailers maximize sales, divert a smart surplus to SNAP families, and avoid spoilage

(5) r4 AI in the SNAP and retailer mobile apps promotes "favorites" with deep discounts tied to healthy choices

(3) r4's Enterprise AI Engine forecasts demand and recommends top items by store and day

The Smart Surplus Marketplace

Retail → **Food Insecure Consumers** ← Gov't & NGOs

(1) SNAP families enroll in mobile app; shopping behavior creates local demand signals

(2) Federal and state incentives for a "Smart Surplus" power a SNAP Consumer Marketplace

What's next?

The **r4** team's heritage came from collectively seeing a future that did not exist at the time. With persistence and focus, priceline and *"name your own price"* became part of the consumer lexicon.

Now, the future looks different all over again. The most successful companies don't think small, and they won't stop at incremental improvements. Winning will come from bold decisions-- to use the best available technology and make the constraints of data, processes, and organizational structure far less relevant.

What does your future success look like?

What will you do today to get there faster, and with more confidence throughout the State?

How do we make Oklahoma #1?

See the future. Act today.

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