



# retailhORIZONS

ENVISIONING THE FUTURE OF RETAIL

**Practical tools based around current trends and four future scenarios to help retailers plan for the years ahead.**



TARGET.



Unilever



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# Retail Horizons: Executive summary

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The retail industry is one of the most important sectors of the economy. With annual sales of more than \$4.5 trillion in the U.S. alone, retail is a major engine of economic growth and employment. Accounting for roughly a third of GDP, retail activity is often used as a barometer for the health of the economy as a whole. Retail is also incredibly diverse, spanning a range from the mom and pop corner store to some of the largest companies in the world. Woven deeply into the fabric of our entire economy and local communities, retail has the power to create massive benefit to society.

Retail is an essential foundation for our market economies, serving as the key interface between business and consumers. It is how most of U.S. get the food that sustains us, the apparel that clothes us, and the objects that furnish the landscape of our lives. Without retail, much of our modern lifestyle would not be possible. At the same time, retail is not immune to the social and environmental challenges that face all industries. At its worst, retail can lead to wasteful consumption and unsustainable energy use, among other things.

Companies in all sectors are developing programs to respond to the immense challenges that are already shaping our world—such as climate change, shifting demographics, decline in ecosystem services and resource scarcity—to address the serious risks those challenges pose, and to seize the rich opportunities they present.

*Retail Horizons is a program to support the industry's drive to sustainability. This project – led by Retail Industry Leaders Association and Forum for the Future, and sponsored by Target and Unilever – is designed to help retailers take action to safeguard their future, protect our environment, and improve the lives of their customers, workers, and suppliers.*

The world is changing rapidly in ways that will have profound implications for the retail sector over the next fifteen years. Some of these changes we can foresee with a high degree of likelihood. The consumer population in the U.S. will grow older and more diverse. Key resources, such as water and materials, are likely to become more scarce and expensive. Customer expectations for speed and transparency will probably increase.

Other changes are less certain. What will be the energy mix for electricity, transportation, and manufacturing? Will renewable energy scale up to become as important as fossil fuel, and how will this affect costs? Consumer behavior is hard to predict, as well. Will people rely primarily on businesses and brands to meet their daily needs? Or might they turn more towards themselves and their communities to meet their experiential and material needs?

The future is likely to be dramatically different from today, in ways that we cannot predict. To explore some of the possibilities, we have created four scenarios; Rust Belt Renewal, Double or Nothing, Networked Nation and Predictive Planet, each of which depicts some of the potential challenges and opportunities ahead for the retail industry.

The scenarios cover a wide range of issues and raise important discussion topics for retail, such as:

- How will technology continue to change the retail industry, including how people obtain and exchange goods and services?
- What sorts of impacts might differing energy prices have on retail supply chains?
- What are the implications of resource shortages and climate change?

- How could geopolitical changes impact global trade and supply chains?
- What will the relationship be like between businesses and consumers?

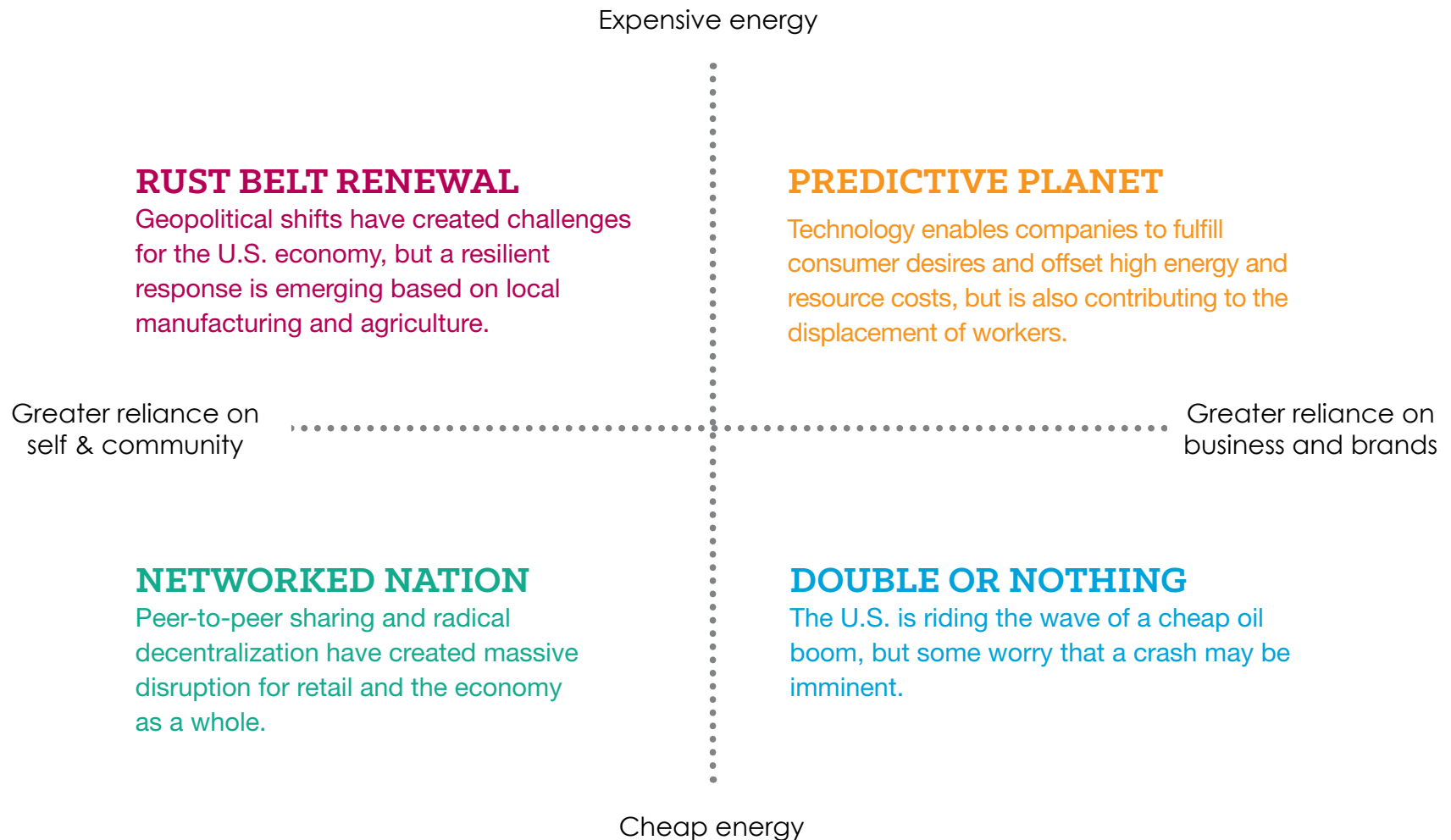
The four scenarios explore worlds in which energy has become either more or less expensive, and in which consumers rely either more on themselves or more on businesses to meet their needs.

The scenarios demonstrate the urgent commercial imperative for the industry, and the businesses within it, to rise to the challenge of the future and become sustainable. They also highlight the opportunity for pioneering companies to step up and lead the industry with business models, products and services that will thrive in a sustainable future.



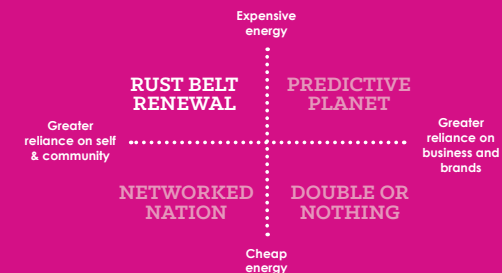
# Scenarios for retail's possible future

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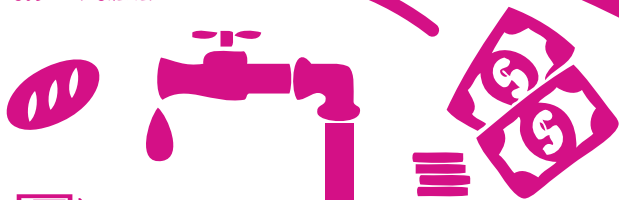


SCENARIO 1

# RUST BELT RENEWAL



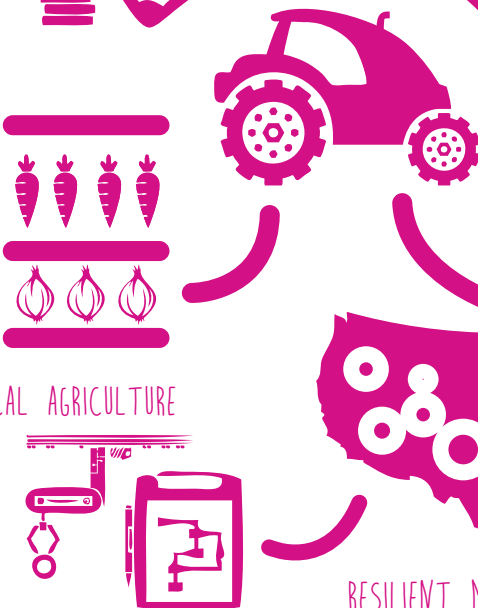
COST INCREMENT



LOCAL MANUFACTURING



LOCAL AGRICULTURE



RESILIENT MIDDLE CLASS



The combined effects of geopolitical tensions and resource constraints have made fuel, water, and food all more expensive. This led to a decade of turmoil and stagnation in the U.S. as people struggled to adjust.

Although net incomes have declined, a resurgence of local manufacturing and agriculture in the U.S. has provided employment for a more stable and resilient middle class.

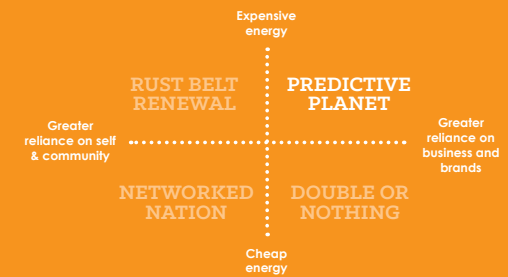
# RUST BELT RENEWAL

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- 1 The global context** has seen major shifts as China and Russia have turned away from the West, causing disruption but also prompting a resurgence of local manufacturing and agriculture in the United States.
- 2 Energy** is expensive due to conflict in the Middle East and global competition for supplies. Transportation is costly and supply chains have contracted.
- 3 Resource challenges** have raised the price of basic necessities like food and taken a toll on drought-prone states in the Southwest. A homegrown circular economy is emerging to mine landfills and waste streams for scarce materials to reuse.
- 4 Key technologies** are those that enable small-scale manufacturing, local agriculture, and waste reclamation.
- 5 The U.S. economy** was hit hard by the loss of China as a source of low-cost goods, and by the higher cost of food and fuel. However, the recent turn towards local manufacturing and agriculture is helping to spur a recovery.
- 6 Key regulatory issues** are largely concerned with conserving critical resources such as water, and with encouraging the reshoring of production.
- 7 Cities and mobility:** Most of the growth is taking place in small and mid sized cities of the Midwest, where legacy manufacturing infrastructure is being put back into to use. Shared transit and living close to work are popular as ways of saving money on fuel.
- 8 The retail industry** is characterized by shorter supply chains, localized production, and a focus on resilience.
- 9 The retail environment** is smaller than it once was, and in addition to new items, retailers often offer used items, rentals, and classes for do-it-yourself consumers.
- 10 People's attitudes to business** were negatively impacted by the price hikes of the late 2010s, but they have become more positive as businesses have reshored and created new jobs at home.
- 11 Consumers** are more self-reliant and have embraced thrift, sharing, and making to save money. They're wary of depending on business to meet their needs.
- 12 Products and services** Consumers want products that last a long time and that are repairable, upgradeable, and recyclable.

SCENARIO 2

# PREDICTIVE PLANET



Technological innovations drive this world. One of the most important has been the Lifeo, a wearable device that records everything a user sees and hears, combines that with physiological data, and sends this “lifestream” into the cloud for storage and analysis. By correlating a user’s emotional state with people, objects, and places, lifestream analytics can be used to offer consumers highly customized products and services—from meals to clothing to guidance on social interactions. Energy and resources are expensive, but the United States is transitioning toward renewable energy and a less materially intensive economy. There is deep anxiety about the loss of privacy and authenticity in human interaction, and a high degree of income inequality is causing social and political tension.



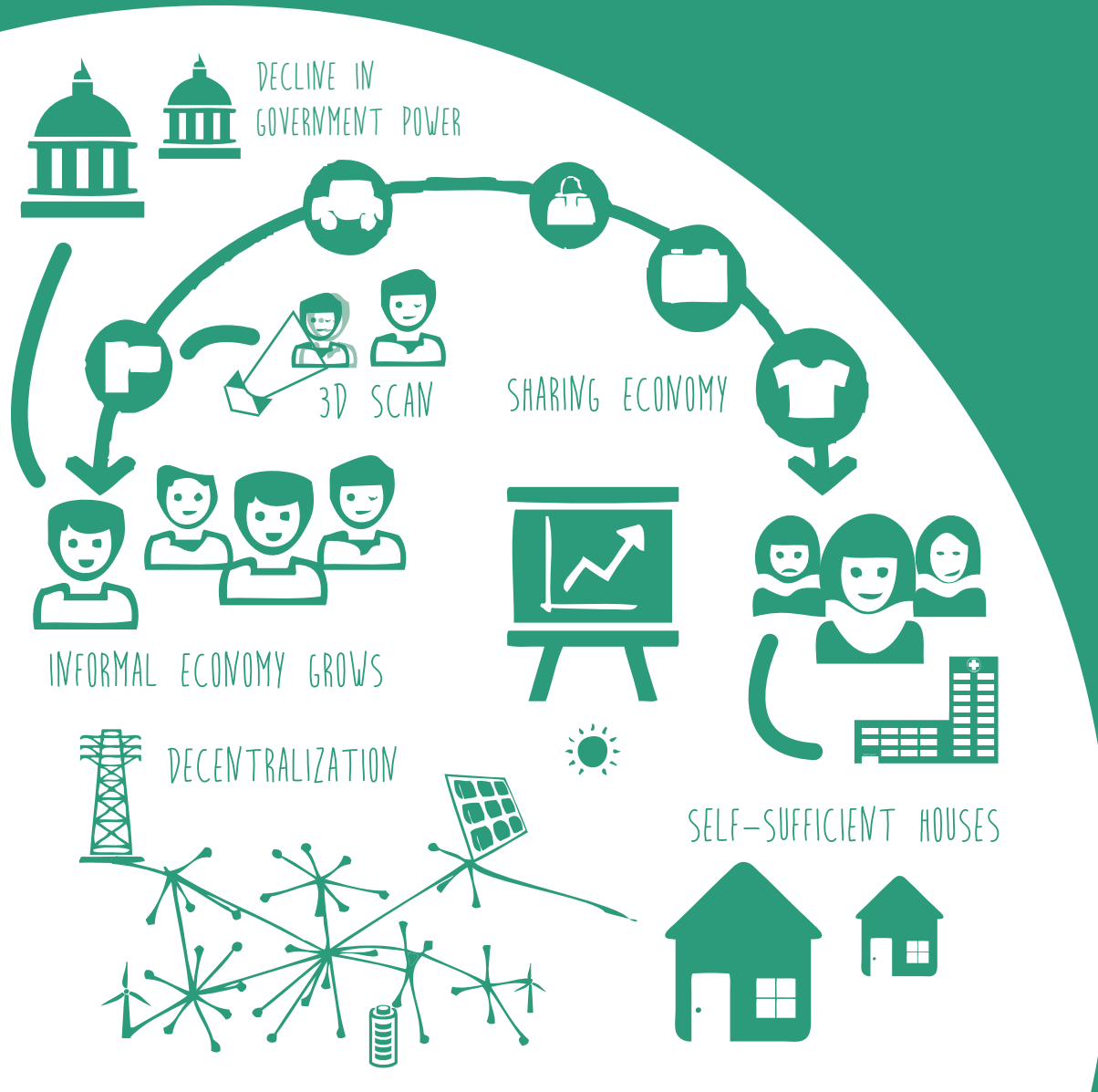
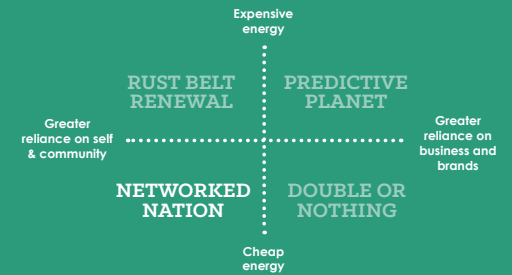
# PREDICTIVE PLANET

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- 1 **The global context** sees the US, China, and India racing to innovate digital technology and improve efficiency, with business taking the lead and transparency becoming widespread.
- 2 **Energy** is expensive, as demand surges, oil and gas production level off, and uneven policies slow the transition to renewables.
- 3 **Resource challenges** are being addressed through materials science, tightly coordinated supply chains, and much better data to predict consumer demand.
- 4 **Key technologies** include wearable devices that analyze all aspects of a users experience and emotional state, enabling extremely customized recommendations for products and services.
- 5 **The U.S. economy** is performing well in industries related to technology, while those people in more traditional jobs must compete to stay relevant.
- 6 **Key regulatory** issues include those related to data security, privacy, and trust, as insights gleaned from consumer data become more powerful and revealing.
- 7 **Cities and mobility** are high tech, with most people aspiring to the services made possible by living in a 'smart city' and driverless electric cars becoming more common.
- 8 **The retail industry** is characterized by massive integration, as diverse companies share rich consumer data to provide seamless, customized solutions.
- 9 **The retail environment** has become largely invisible, as "shopping" can take place with the blink of an eye and "stores" transform into lifestyle spaces.
- 10 **People's attitudes about business** are ambivalent, as they value the ever more customized solutions available but worry that business may be too powerful.
- 11 **Consumers** are highly reliant on "megabrands" to anticipate their needs and offer integrated solutions, and have high expectations for service and security.
- 12 **Products and services** are less often sold as discrete entities and often come bundled as part of a solution to meet a particular need, like health or education.

SCENARIO 3

# NETWORKED NATION



In this globalized but highly decentralized world, technology, cheap energy, and a shift in attitudes have cut out the middleman and disrupted numerous industries. Self-organizing networks of individuals coordinate the provision of a wide range of products and services from food to clothing to healthcare. Many industries have confronted similar challenges to those faced by music and publishing companies during the 2010s and can no longer count on economies of scale or market dominance to ensure profit margins. A great deal of economic activity takes place off the books, often measured in nonmonetary currency. The friction of most transactions has been reduced and the playing field among economic actors has been leveled. Disaggregation and outsourcing have affected all economic activity.

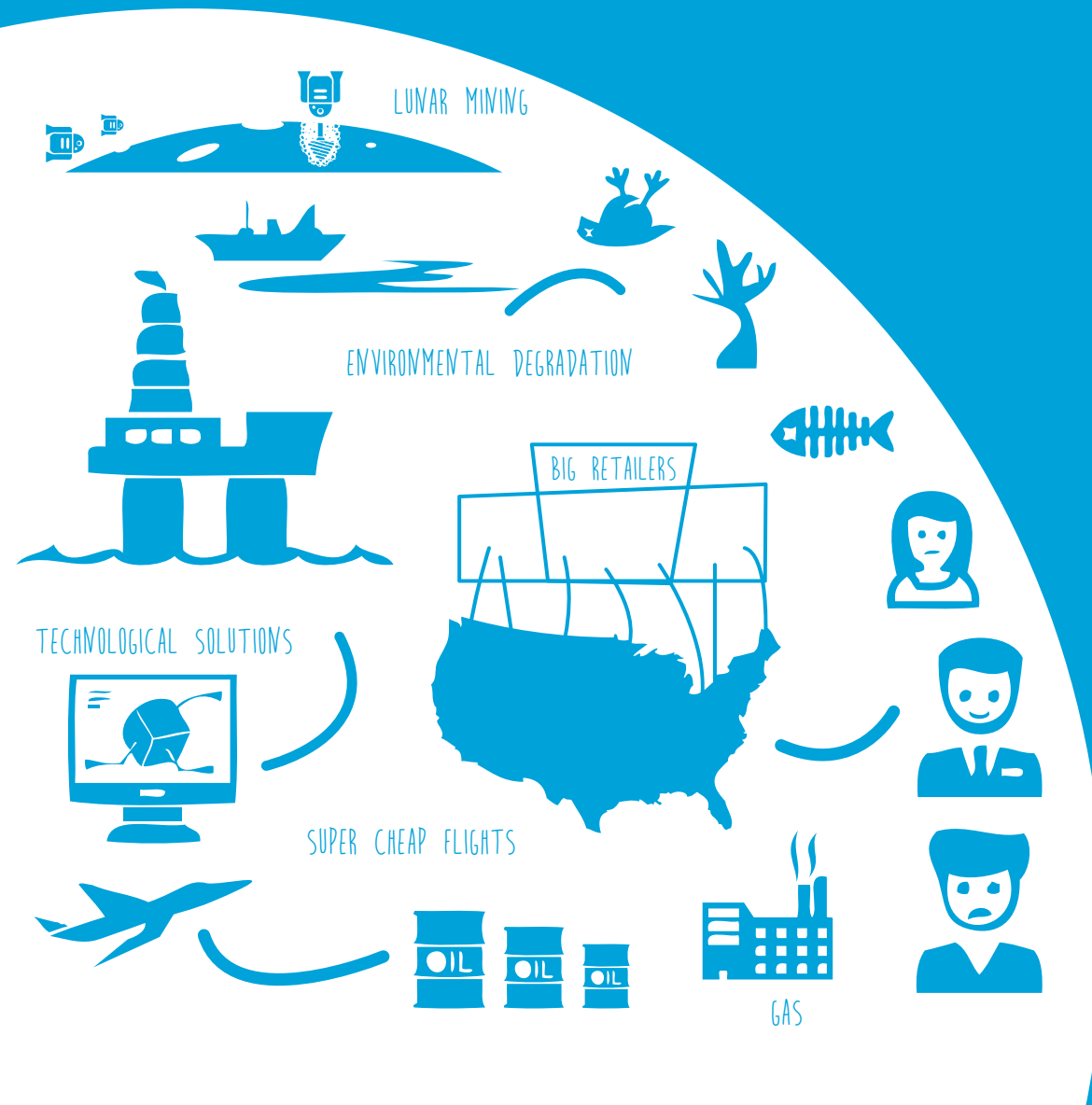
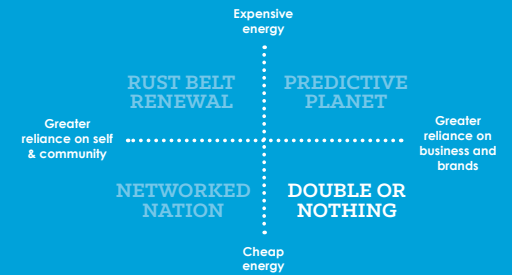
# NETWORKED NATION .....

- 1 The global context** has seen a significant decline in government power as disruptive new technologies have made it ever easier for citizens to tap into self-organized global networks with other like-minded individuals to satisfy their needs.
- 2 Energy** is less expensive due to the growth of distributed solar power, catalyzed by federal policy and improved storage technology
- 3 Resource challenges** are being exacerbated by the explosion of distributed manufacturing, which has made it easy for consumers to produce their own products cheaply.
- 4 Key technologies** include software applications enabling secure, anonymous peer-to-peer transactions with no need for centralized coordination or verification.
- 5 The U.S. economy** is struggling when evaluated using traditional metrics like gross domestic product (GDP); however, a huge amount of unreported, untaxed economic activity is taking place off the books.
- 6 Key regulatory issues** entail trying to ensure that the new peer-to-peer economy is held to the same standards as business and contributes to the revenues of the state.

- 7 Cities and mobility:** People aspire to the freedom of being able to live and operate anywhere, and belonging to global networks has become more important than national or city boundaries.
- 8 The retail industry** has become profoundly disaggregated. It is now common to outsource every function of a business, from design to manufacturing to sales.
- 9 The retail environment** has been challenged by the ease with which consumers can scan and replicate many common items. Stores now specialize in limited edition, high-tech, or unique items that are difficult to commoditize, as well as additional services.
- 10 People's attitudes about business** are skeptical, and consumers prefer to buy from independent producers, which are seen as cheaper, faster, and less controlling.
- 11 Consumers** are fickle, extremely diverse in their tastes, and frenzied in their attempts to keep up with the latest trends. Fads in physical objects now turn over as quickly as memes do on the internet.
- 12 Products and services** are quickly pirated and replicated. Businesses compete by either providing things that are difficult to replicate, like experiences or products made from advanced materials, or by providing low-cost commodities.

## SCENARIO 4

# DOUBLE OR NOTHING



Buoyed by cheap energy, the U.S. has enjoyed steady growth while much of the rest of the world struggles. Given the difficult changes taking place outside the US, consumers are nostalgic for a simpler time and seek out products that give them a sense of peace and safety. Technological solutions are increasingly important as a means of addressing resource scarcity and environmental degradation. Although these have managed to prevent any major cataclysms in the US, there is an undercurrent of anxiety about whether America can continue to evade the crises that have befallen other parts of the world.

# DOUBLE OR NOTHING.....

- 1 **The global context** is characterized by growing tension between those countries that have fully embraced renewable energy and those that continue to rely primarily on fossil fuels.
- 2 **Energy** is cheap in the US, due to increased production of shale gas and oil, and the exploitation of unconventional fossil fuel sources like methane hydrates.
- 3 **Resource challenges** are sparking fierce global competition to secure supplies and to develop alternatives. New frontiers are being opened up for resource extraction, from Antarctica to outer space.
- 4 **Key technologies** are those to provide “fixes” for the challenges posed by resource scarcity and climate change, such as water desalinization, geoengineering, and genetic modification.
- 5 **The U.S. economy** has enjoyed a decade of strong economic growth fueled by cheap oil and easy credit, however some fear that this cannot last.
- 6 **Key regulatory issues** have been developed around food and product safety, synthetic biology, genetic modification, and geoengineering—all of which are considered critical to the U.S. economy.

- 7 **Cities and mobility** Travel by air and automobile is cheap again, and much of the population growth in the U.S. has taken place on the outskirts of low-density metropolitan areas in the West.
- 8 **The retail industry** is characterized by long and increasingly complex as the markets for raw materials are increasingly uncertain and political instability is often disruptive.
- 9 **The retail environment** often takes the forms of small shops and boutiques, although many of these are chains and franchises that are owned by big companies.
- 10 **People’s attitudes to business** American consumers have positive feelings about big business, which they see as working in partnership with the government to keep them safe from the many challenges facing the world.
- 11 **Consumers** are anxious about the rapid pace of change in the world and nostalgic for simpler times.
- 12 **Products and services** are most popular when they are designed to seem authentic and natural. Product safety and reliability are also essential.

# Recommendations for the retail industry

## 1 Prepare now for a radically different and uncertain future

Companies should prepare now and put strategies in place that will be robust in a variety of scenarios. They should carry out a risk assessment of their business models and supply chains; put together a sustainability roadmap covering the full product/service lifecycle; and ensure they understand the social and environmental context in which they operate.

## 2 Seize the opportunity to be a pioneer

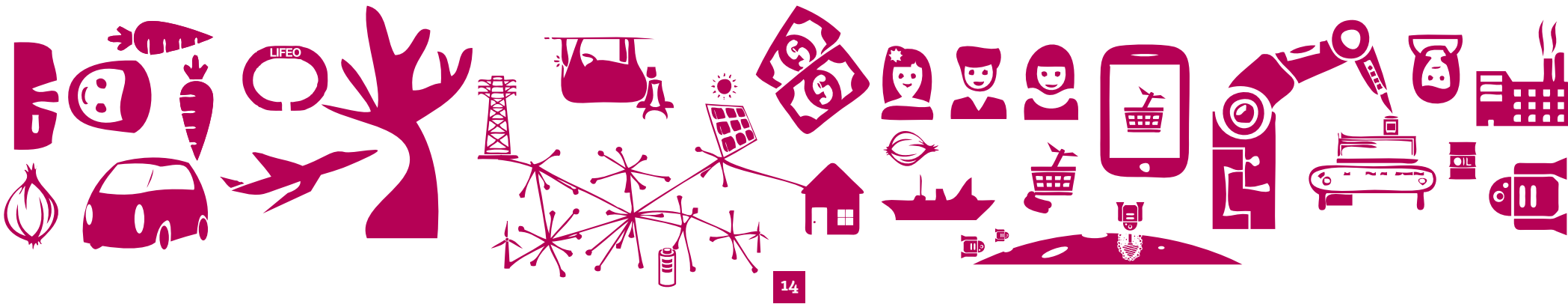
Companies can gain first mover advantage by proactively developing strategies to deal with emerging challenges such as water scarcity. They can also benefit from taking the lead in talking to consumers and investors about the business case for sustainability, working with government, and driving collective industry action.

### 3 Embrace change

In a world that is changing rapidly and unpredictably, success will depend more than ever on being agile and innovative. Companies should invest in design and innovation, and experiment with new business models.

#### 4 Develop skills for a new world

Companies should start developing the skills they will need to be successful in the future. The industry will need climate change experts, energy policy specialists, innovators with skills in design for disassembly and closed-loop manufacturing, and many more. Businesses should also explore trends where consumers self-organize to perform many of the functions currently carried about by business.



# TOOLKIT GUIDANCE

## How to use Retail Horizons

'Futures' is structured thinking about the future to improve decisions made today. Thinking about the future helps identify risks and opportunities, inform strategy development, and stimulate innovation.

A diverse range of brands, like Sony, Ecover, Levi's and Unilever, are already using scenarios and other futures tools to explore new ways of collaborating on initiatives that will deliver sustainability and commercial benefit to them.

### Using futures can benefit your organization because it:

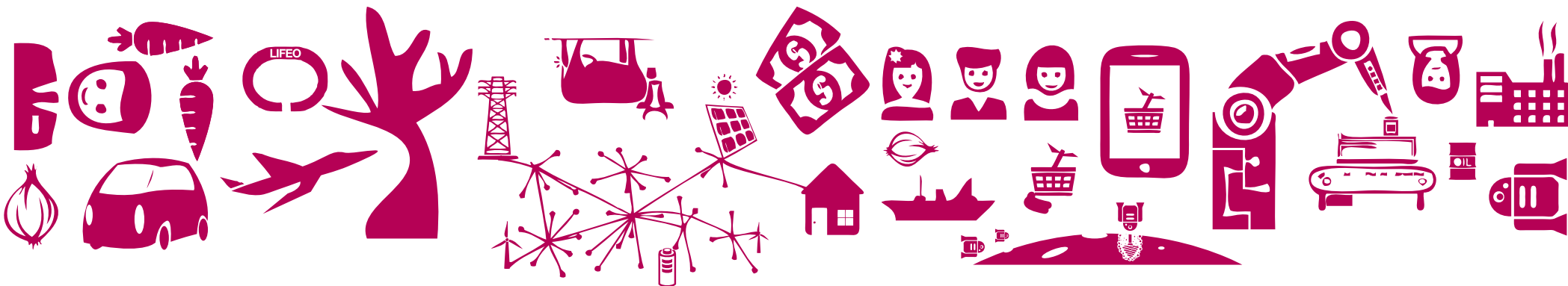
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- can be used to build internal organizational capacity for long-term and strategic thinking, a key tenet for sustainable organizations.
  - is a powerful systemic tool that can be used to confront people with the ideas of uncertainty, change, and interconnectedness.
  - gives people a mandate, motivation, and confidence to change current practices so that they are more sustainable.
  - creates a safe space for dialogue among people in multidisciplinary roles, and an opportunity for stakeholder engagement.
  - forms a useful basis for generating longer-term and more sustainable strategy, and new and disruptive product and service innovations.
  - challenges existing norms, help prioritize issues and projects, and help in project and program design.
-



The *Retail Horizons* toolkit includes a range of tried and tested process tools, and stimulating content tools to help you achieve your objectives. Select your objectives from the list below and follow the links on the next pages to find the most useful tools from this toolkit.

- 
- |  |   |
|--|---|
| <b>1</b> setting sustainability goals        | <b>5</b> creating innovative products and services      |
| <b>2</b> performing a materiality assessment | <b>6</b> building new business models                   |
| <b>3</b> testing an existing strategy        | <b>7</b> using trends to engage the board               |
| <b>4</b> developing a new strategy           | <b>8</b> building an internal futures-thinking capacity |
- 



## 1. Setting sustainability goals

Use scenarios and trends to explore the operating context for your company in the future. By understanding future risks and opportunities you can explore both how future uncertainties will impact your company, and your company's role in creating a sustainable future. This will allow you to set goals for your company now.

Use: Setting future goals exercise (see page 32) and complete scenarios (see pages 62-100)

## 2. Performing a materiality assessment

The principal objective of a materiality process is to shape understanding within your organization of the relative importance of different sustainability priorities. This will be the foundation for a more coherent and business-relevant sustainability strategy going forward. The materiality assessment will be a chance to engage with internal decision-makers and external stakeholders.

Use: Assessing material issues exercise (see pages 33-34) and trends (see pages 39-61)

## 3. Testing an existing strategy

Use futures scenarios to ask the question, "How would my current strategy stand up, if this future world came true?." This process will expose strengths and weaknesses of your strategy for each scenario. By comparing the results across all four scenarios you will find common strengths and weaknesses – showing where your strategy is and isn't 'future-proofed' and allowing you to make adjustments.

Use: Testing an existing strategy agenda (see page 22) and complete scenarios (see pages 62-100)

## 4. Developing a new strategy

You can also use scenarios to build a strategy from scratch. This process uses multiple scenarios to set out different strategies across different futures. Comparing and combining these strategies will allow you to create a new strategy which is fit for multiple futures, which you can then bring back to today through roadmapping.

Use: Developing a new strategy agenda (see page 23), long-term thinking (see page 28) and scenario immersion exercises (see page 26) and complete scenarios (see pages 62-100)

## 5. Creating innovative products and services

Running an innovation workshop with participants immersed in different future scenarios allows the creation of new products and services that would work in that world. Once the ideas are surfaced they can be fleshed out by considering the other scenarios and asking which products and services work across several or all of the future worlds, and are therefore robust for a range of futures.

Use: Creating innovative products and services agenda (see page 24), personas (see pages 101-108) and complete scenarios (see pages 62-100)

## 6. Building new business models

Once you have developed innovative products and services, the next step is to design a business model to bring those to market in the short-term.

Use: Building new business models agenda (see page 25), mapping life-cycle diagram (see page 31), trends (see pages 39-61) and complete scenarios (see pages 62-100)

## 7. Using trends to engage the board

The set of key trends for the future of retail is a useful taster for futures thinking for a group with limited time, such as a board meeting. Asking a group to reflect on the trends and place them on a matrix which maps 'impact on business' against 'preparedness', will allow the identification of high impact issues for which the company is underprepared. This is a good starting point for a board discussion, or getting buy-in to a deeper futures process.

Use: Using trends to engage the board exercise (see page 35) and trends (see pages 39-61)

## 8. Building internal futures-thinking capacity

Doing these types of processes above can help your organization become futures-literate. To develop internal futures capacity we recommend creating a team or virtual team that supports all of these processes, and build their own capacity for futures thinking through learning-by-doing. Once the team is up and running they can develop organization-appropriate horizon scanning which will help to anticipate changes in the operating context that might have implications for strategy.

# PROCESS TOOLS

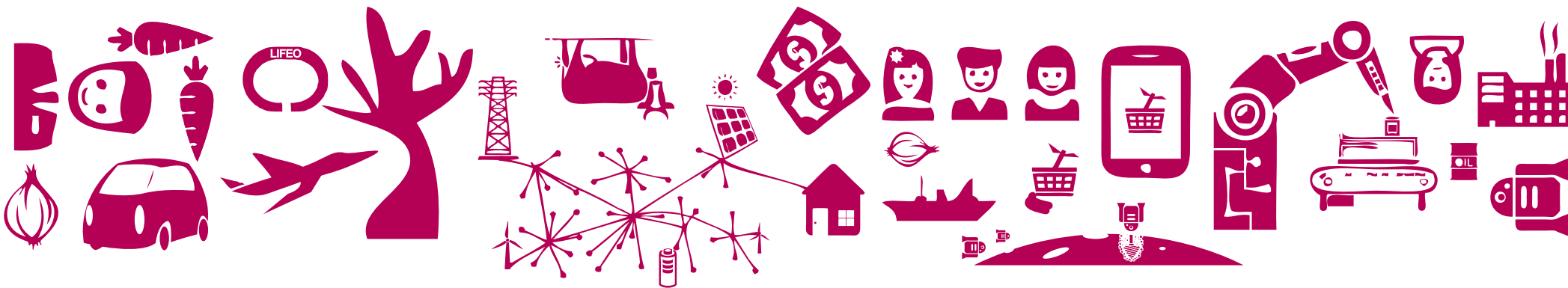
## Workshop agendas

Companies use workshops, informed by future scenarios, to improve their business strategies. Here, we outline a few tried and tested workshop methods to help you and your organization use the *Retail Horizons* trends and scenarios to inform your business strategy.

*Note: for any workshop type, your attendee list should include people from a variety of roles and where appropriate, people from outside of the business with different perspectives.*

## Exercises

Companies can also use exercises to think outside of their day-to-day operations by considering the day in the life of representative consumers, exploring the full product value chain, or setting longer-term goals. The *Retail Horizons* trends and scenarios are a useful way to facilitate those exercises.



### Testing an existing strategy

Diving into the future is ideal for testing an existing strategy and adjusting it if necessary. The below agenda outlines a tried and tested workshop method that can help you and your organization test your current strategy, using the *Retail Horizons* scenarios.

#### Content tools needed:

Complete scenarios (see pages 62-100) | Personas (see pages 101-108) | Recommendations (see page 110)

- 1** Form four groups and allocate each one scenario. Each group conducts the immersion exercise (see page 26).  
In small groups of 3-6 people, groups focus on one specific scenario
- 2** Imagine that your scenario, the indicators, products and services and stories are an accurate description of reality and ask the following questions:
  - Which aspects of your current business strategy would still be effective?
  - Which aspects of your current business strategy would still be effective but would require amending?
  - Which aspects of your current business strategy would be ineffective?
  - What new actions might be effective?
  - For aspects that would require amending, what would those amendments be?
- 3** Write amendments, new actions, and things you would need to drop on post-its.
- 4** Then feedback to all and discuss in plenary—it's helpful to create a wall of post-its using the scenario axis as you feedback (see page 5)
- 5** After everyone has given feedback, discuss the following:
  - How would the strategy play out differently in the various future scenarios?
  - Do the responses across the different scenarios have anything in common? If so, discuss how they can be prioritized into immediate actions.

### Developing a new strategy

As well as testing an existing strategy, it's possible to use the *Retail Futures* scenarios to develop a new, long-term and more sustainable strategy. There are many ways of doing this in a workshop format. Here is one way.

#### Content tools needed:

Complete scenarios (see pages 62-100)

- 1 Run 'long-term thinking' exercise (see page 28)
- 2 Present the four scenarios.
- 3 Form four groups, one per scenario.
- 4 Groups follow the scenario immersion exercise (see page 26).
- 5 Plenary discussion to identify the current assets that make the business successful.  
  
This is likely to be a number of things such as 'marketing expertise', 'world-class R&D' or 'strong relationships with suppliers'.
- 6 Scenario groups discuss the following:  
  
Given the key assets of your company, what new business venture would you set up to create long term value in your scenario? Brainstorm ideas on post-it notes, discuss and select best idea from group.
- 7 Develop the idea further, using a business model canvas or a value chain diagram (see page 31).
- 8 The next step is to compare and contrast ideas from different scenarios. Form new groups that comprise people from all four scenarios. Share the business ideas and discuss the following:
  - Which of these ideas would work in more than one scenario?
  - Would any work in all four scenarios? These are 'future-proof' ideas.
- 9 In plenary, share the 'future-proof' ideas.
- 10 After everyone has shared their ideas, discuss the following:
  - How different are the new ideas compared to your current business model?
  - Do any of the business model ideas seem less risky than your current business model? If so why?
  - Could your company adapt to any of the business model ideas—if so how?

### Creating innovative products and services

Leaping into 2030 is ideal for generating the innovations that will change our world for the better.

Here we outline a workshop method to help you and your organization use the *Retail Horizons* scenarios to generate ideas for the innovative products and services.

Using the personas and scenarios for innovation - in small groups of 3-6 people...

#### Content tools needed:

Complete scenarios (see pages 62-100) | Personas (see pages 101-108) | Recommendations (see page 110)

- 1 Read through and briefly discuss your persona(s) (see pages 101-108)
- 2 Think about how your company's products and/or services are currently meeting this consumer's needs. Jot down points on post-its and collate on a wall. In particular:
  - **why does the consumer purchase the product/service?**
  - **what basic needs is/are the product/service meeting?**
  - **how does the consumer find out about and purchase the product/service?**Repeat for the other persona(s).
- 3 Suspend disbelief. Imagine yourself in one of the scenarios, imagine that the indicators, products and services and stories are an accurate description of reality. Discuss how your persona(s) would be living in 2030, within your scenario. Consider:
  - **what would be different from today?**
  - **are their basic needs still the same?**
  - **would they still be able to purchase the product/service in the same way?**
- 4 Brainstorm ideas for how your company could be meeting the consumer's needs in your scenario. Generate multiple ideas for how to do this—this is about quantity of ideas, not quality!
- 5 Use the *Retail Horizons* recommendations, your company values and any company targets/vision on sustainability to filter down the ideas to one that you love.



### Building new business models

Exploring the future is ideal for generating new business models that will change our world for the better.

Here we outline a workshop method to help you and your organization use the *Retail Horizons* scenarios and trends to brainstorm new business models.

Using the scenarios for new business models - in small groups of 3-6 people.

#### Content tools needed:

Complete scenarios (see pages 62-100) | Trends (see pages 39-61) | Value chain diagram (see page 31)

- 1** Form four groups and allocate each one scenario. Each group conducts the immersion exercise (see page 26).  
In small groups of 3-6 people, groups focus on one specific scenario
- 2** Generate lots of future business model possibilities, at least one per scenario – blue sky thinking, without eliminating any wild or radical ideas.
- 3** You can also use the trends for inspiration. Brainstorm a range of future business models for retail, from digital to physical platform model, and others.
- 4** Refine the most promising possibilities.  
Using each scenario, narrow down your long list to a few business models that seem to best fit these new worlds.
  - **Hash out and agree on the major details of the best-fit models.**
- 5** Build the system around the possibility.  
The most promising business models do not function in isolation. Iteratively develop the system (considering all value chain interaction of that particular business model) they are part of a complete system using the mapping a product life-cycle diagram (see page 31).  
Once the basic ‘ecosystem’ is formed, begin to build a roster of possible variables that are relevant to each player or element in the ecosystem.

## EXERCISE

### Scenario immersion exercise

An easy way to explore the future is to get to know the scenarios in more detail.

Here we outline a method to help you and your organization use the *Retail Horizons* scenarios to get familiar with scenarios and engage people with the process.

#### Content tools needed:

Complete scenarios (see pages 62-100) | Day in the life template (see pages 27) | Personas (see pages 101-108)

- 1 Use the A Day in the Life exercise (see right and following page), in small groups of 3-6 people.
- 2 Each group will focus on one scenario
- 3 The groups should then do as follows:
  - read through the scenario individually;
  - take 10 minutes to discuss initial thoughts and reactions to the scenario as a group;
  - discuss with the group who would be the winners and losers in this scenario;
  - pick 2 personas and sketch out what their day would look like in the scenario;
  - use post-its to capture
- 4 Each group then feeds back to all

### Some examples of 'day in the life' questions:

- where will your persona live?
- what job will he/she be doing?
- where will his/her kids be educated?
- how will he/she get to work?
- what/how will he/she eat?
- what products will he/she use?
- how often will he/she go shopping?

## A day in the life of...

## Retail Horizons



Morning

Noon

Evening

Night



I do...

Services  
I use or  
need...

## Long-term thinking

This exercise helps to prepare the scene for the future scenarios immersion exercise (see page 26).

Run a *Back to the Future* brainstorm. This can either be done as a plenary brainstorm, or with smaller groups. The objective of this exercise is to open people's minds to the likelihood that the future will be radically different from the present. It serves to remind people how quickly change can happen. In the *Retail Horizons* scenarios, we're looking more than a decade ahead to 2030. In order to get a sense for how much could change between now and then, try looking 20 years back to see what has changed in a comparable timeframe.

### **As a group, discuss the following:**

- **What has changed over the last 20 years?**
- **What major world events have taken place?**
- **What do we do differently now compared to 20 years ago?**

*Note: The brainstorm can run as long as the discussion remains interesting and useful.*

### Assessing risks and opportunities through a SWOT analysis

The principal objective of a SWOT analysis is to shape understanding within your organization of risks and opportunities. This will be the foundation for a more coherent and business-relevant sustainability strategy going forward. The SWOT analysis will be a chance to engage with internal decision-makers and external stakeholders.

#### Content tools needed:

Complete scenarios (see pages 62-100)

- 1 In groups, undertake a scenario immersion exercise (see page 26).
- 2 Within each group, think about your current business as it is now, existing in the world described by that scenario, and undertake a SWOT analysis. Each scenario group should have different color post-it notes. Write each strength, weakness, opportunity or threat on a different post-its – write the letter to identify what type it is in the top corner e.g., an O for opportunities.
- 3 Create new groups so that you have clustered all the strengths together, all the opportunities together and so on...people take the correct post-its with them to the new group.
- 4 In these new groups, examine all the post-it notes that people have brought from the scenario groups. Cluster them together and see what commonalities are there. Name the clusters.
- 5 Decide as a group on the top 3-5 clusters that you think your strategy should address – the priorities should normally be those clusters which have the most variety of color post-its, representing the biggest variety of worlds where these issues occurred.
- 6 Share back the prioritized clusters in plenary. Look for commonalities across the groups – e.g., where strengths match opportunities, or weaknesses match threats, and so on. There may be some re-clustering at this stage.
- 7 Across the whole room, agree on the top 5-7 clusters for your business strategy to start addressing now.
- 8 If you have time, break back into groups to work on those clusters and start a top level action plan – what action to take, what resources it needs, who will take the next steps. Alternatively this can form the basis of a full road-mapping session.

## EXERCISE

### Mapping a product life cycle

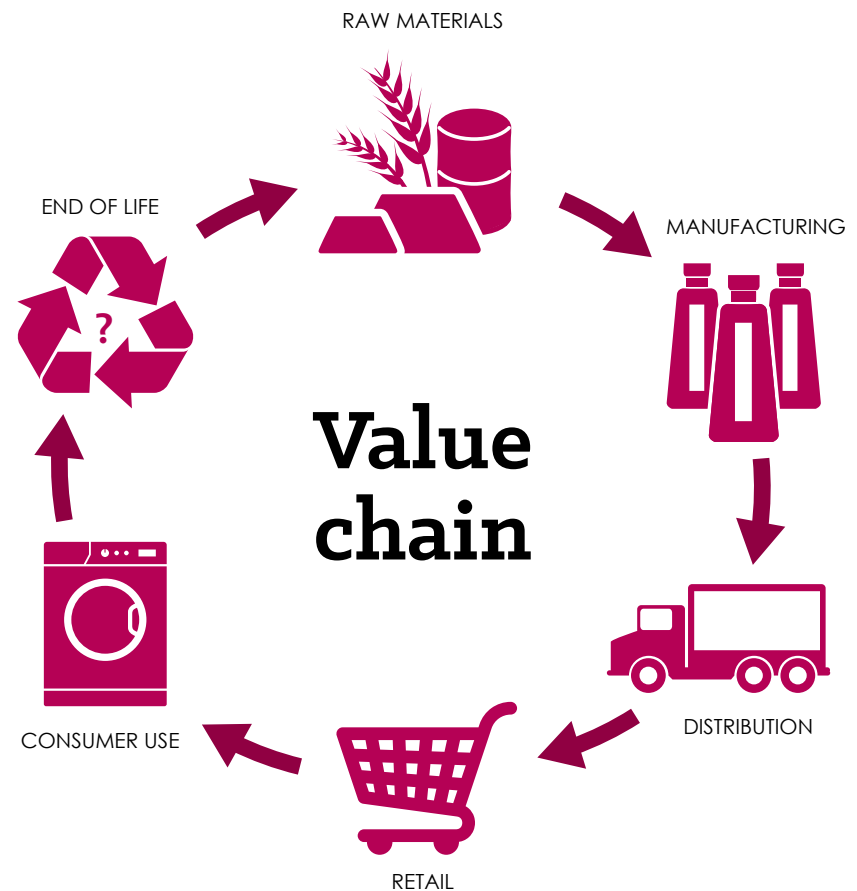
Testing your new product or service ideas is ideal for generating insights and prioritizing ideas. This exercise maps out a product's life cycle, uncovering new business opportunities in the product value chain.

Use the ideas you developed in the creating innovative products or services process (see page 24) - in small groups of 3-6 people...

#### Content tools needed:

Complete scenarios (see pages 62-100)

- 1 Think about the life cycle of the new product and describe it, capture thoughts using post-its.
- 2 Think about how this product and/or service is currently mitigating environmental impact and maximizing social benefits.





## Setting future goals

Jumping into the future is ideal for developing sustainability goals to prepare your organization for the future.

Here we outline a workshop exercise to help you and your organization use the *Retail Horizons* scenarios to set sustainability goals.

### Content tools needed:

Complete scenarios (see pages 62-100) | Value chain diagram (see page 31)

In small groups of 3-6 people...groups

- 1 Present the scenarios and conduct immersion exercise (see page 26)
- 2 Put aside the current sustainability goals for a moment and ask yourselves:  
**“If I were the leader of my sector in this scenario and I wanted to set up long term goals (with global ambitions), what sort of goals would I need to stay ahead of the game in this scenario?”**
- 3 Describe these new goals - use the value chain poster (see page 31) to help do this.
- 4 Capture the goals, the value chain, and key elements of your new goals. Share your group’s new goals with everyone and discuss in plenary.
- 5 After everyone has shared their goals, discuss the following
  - **How different are the new goals compared to your current business model?**
  - **Do any of the goals seem less risky than your current business model? If so why?**
  - **Could your company adapt to any of the new future goals—if so how?**



## Assessing material issues

This exercise allows a group of people to understand the relative potential influence of factors on the success and sustainability of the company in the future. It will identify the most important risk areas that need to be managed, and opportunity areas that could be sources of advantage now and in the future.

This type of exercise works best with a range of participants from across the company and trusted external partners.

### Content tools needed:

Trends (see pages 39-61) | Personas (see pages 101-108)

#### 1 Exploring the trends

Participants are taken through a series of immersion exercises so that they are familiar with the trends.

These exercises could include:

- using personas (see pages 101-108) to understand different views on whether each trend or factor is important to them
- exploring how trends relate and drive one another by giving each individual one trend and asking them to find a partner with a different trend. They discuss how they affect one another. They then join another pair to explore how each pair affect one another.

#### 2 Prioritising the trends or factors

Participants are divided into small groups of between 3-7 people. The factor or trend cards are divided between these groups. They are asked to consider

each factor or trend in turn and make a group judgement on how to rank it according to the following questions:

- What is the impact of this trend on their organisation's financial success over the next ten years? (High positive or negative impact, Medium, Low). Why?
- To what degree can their organization impact this issue to help create a sustainable future? (High ability to impact, Medium, Low). Why?

Groups record their responses on a ranking table.

Trend or Factor	Qu 1 Rank	Why?	Qu 2 Rank	Why?
e.g. Resource price volatility				
e.g. Health inequality				

## Assessing material issues (continued)

### 3 Plotting the trends and discussing relative impacts

On a large matrix on the wall, groups stick their trend or factor cards in the correct place according to their ranking table.

High impact on future success of business			
Medium			
Low			
	Low	Medium	High Degree of impact on factor or trend

### 4 Understanding the implications

Participants are asked to consider what the implications are for their business: for their strategy; products and services; markets; innovation; and organisational set up. How will they manage the material risks? How will they act on the material opportunities?

### Using trends to engage the board

This exercise allows a group of people to share, discuss and respond to the trends from the list of trends.

This is a straightforward process that can be fast and used as a ‘taster’ of futures.

#### Content tools needed:

Trends (see pages 39-61)

#### Using a trends workshop can help to:

- 1 Introduce the concept of futures-thinking.
- 2 Encourage long-term thinking, explore uncertainties and highlight potential risk areas or blind spots.
- 3 Achieve a common understanding of the critical factors that will be shaping the retail industry.
- 4 Build a business that can thrive in a future context and can contribute towards its sustainability.

#### Here we outline a workshop method to help you and your organization use the trends to engage with the board.

- 1 In groups of 3-6, present the trends, allowing participants to read and review.
- 2 Each group will prioritize the trends according to the level of impact they could have on the business.
- 3 Feedback in plenary and do a gap assessment: is anything missing?
- 4 Exploring the prioritized trends in more detail: in groups, explore possible risks or opportunities associated with each trend and specific actions for your organization in response to each.
- 5 Feedback in plenary, cluster actions and prioritize.

## Working with scenarios...

### **Go with the flow.**

Scenarios explore future possibilities, they aren't predictions. Suspend your disbelief and challenge yourself to accept your scenario as reality.

### **Complete the gaps.**

The scenarios are not comprehensive. If you come across specific gaps, fill them in yourself - elaborate and build on the scenario to make it your own.

### **Keep scribbling.**

Any reflections you have about the scenarios, major points, ideas, whatever - write them down on post-its, stick them up and share them with your team.

### **Blue sky thinking!**

This is your chance to step away from today's constraints, regulations, red-tape and societal 'norms'.

# CONTENT TOOLS

## Content tools

## Trends shaping the future of retail

Building on RILA's extensive research and interviews with its membership, RILA, Forum for the Future, and over 50 retail brands created and prioritized trends that will drive change in the retail industry. These trends cover six categories: technology, demographics, big data and transparency, new consumption patterns, economic and political, and resource constraints. See pages 39-61.

## Scenarios for the future of retail

Forum for the Future, with input from RILA and its members, created four scenarios to help retail executives develop an intuition for the industry's future. They are intended to be thought-provoking stories to explore the opportunities and challenges that lie ahead. Each scenario has a one-page summary, an illustrative timeline of events, sample economic and retail metrics, as well as an in-depth story to help you immerse yourself in that world. See pages 62-100

## Personas

Developed by Forum for the Future, personas are diverse, characteristic people that could exist in any one of the future scenarios. They are tools to help ground executives in the exercises that relate to future consumers and employees. See pages 101-108



# TRENDS SHAPING THE FUTURE OF RETAIL

# Retail everywhere

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No longer confined to traditional stores, retail is increasingly ubiquitous. Transactions are becoming ever easier using mobile payments and automated subscriptions for regularly consumed goods. Stores are also popping up in new and unexpected places, such as train stations and truck and bus “stores.”



## Signals of change

- Retail everywhere is becoming possible as a result of a convergence of trends, such as increasing rates of smartphone ownership and the growth of the internet of things, which makes digital connections among objects, consumer desire for convenience, and competition for consumer ‘share of mind.’
- According to Forrester Research, 60% of U.S. retail sales will involve using the internet by 2017. Consumers will either buy a product online or use the internet to research it before purchasing it in a store.
- Most Millennials have never known a world without internet, social media, and mobile technology. They represent 15% of U.S. consumers in 2014 and will account for almost one third of total spending by 2020.

## Business responses

- Launched in April 2014, Amazon Dash is a small WiFi-enabled scanner that consumers can use to scan items in their homes for automatic addition to their Amazon shopping list.
- Grocery delivery service Peapod is testing a system that allows consumers to shop ‘virtual shelves’ at train platforms in Philadelphia.
- Warby Parker, named *Fast Company*’s most innovative retailer, is driving a school bus retrofitted with a showroom across the United States to test different retail markets.

## Questions

- How can your business build brand favorability through retail everywhere?
- Could there be a consumer backlash against retail everywhere?
- How could retail everywhere help consumers adopt more sustainable behavior?



# Augmented reality

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Augmented reality uses mobile or wearable technology to interpose a layer of rich audiovisual data between users and their environment, providing them with useful, context-specific information. Augmented reality applications will increasingly be used in retail environments to give consumers product information and help them interact with brands.



## Signals of change

- Semico, a marketing and research firm, estimates that revenues generated from augmented reality applications in the U.S. will exceed \$600 billion by 2016.
- The provision of augmented reality data can be triggered by a user's GPS location or, increasingly, by electronic 'beacon' transmitters placed in an environment such as a store. In January 2014, beacons were installed in 150 grocery stores on the West Coast to send highly targeted coupons to customers while they are shopping.

## Business responses

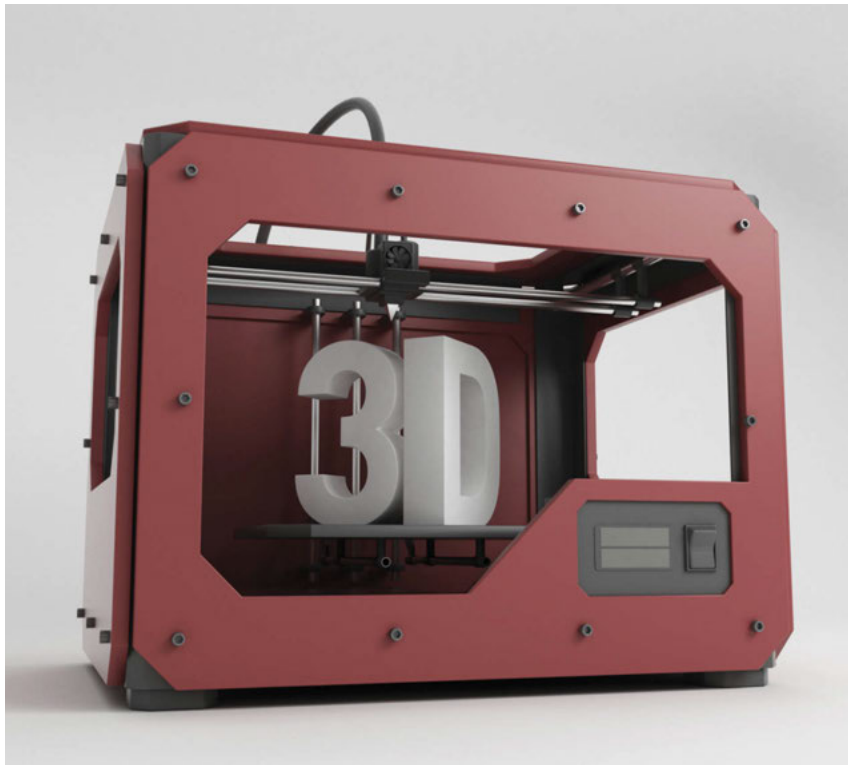
- Google Glass, a wearable computer with an optical head-mounted display integrated into a pair of eyeglasses, is now available to consumers for \$1,500 and offers a range of augmented reality applications, from map overlays to facial recognition services.
- Clothing retailer Topshop and cosmetics company Shiseido are using augmented reality to help customers try on clothes and makeup virtually.

## Questions

- How could the use of augmented reality help you improve operations or enhance the customer experience?
- Augmented reality will increasingly enable consumers to access third-party information about products, such as health or environmental ratings, in real time. How might this impact your business?
- How could the emergence of augmented reality in the retail environment help consumers make more sustainable choices?

# Distributed manufacturing

Technological advances are making localized production easier than ever, and 3D printing and information technology could disrupt and localize conventional manufacturing. Industry is using networks of geographically dispersed manufacturing facilities, and 3D printers have become affordable for consumers to own for their homes or use in their local community.



## Signals of change

- Making products by printing them in ultrafine layers, 3D printing has long been used in high-value manufacturing (e.g., to make jet engine parts). Recent improvements in the technology, coupled with a significant drop in price, are transforming it into a disruptive technology. It is now possible to print a wide variety of materials, such as ceramics, textiles, food, and biological tissue. The availability of inexpensive, compact 3D printers is also enabling consumers to print, rather than buy, a growing range of products.
- A Michigan Technological University study estimated that by using a low-cost 3D printer, such as the RepRap, to produce commonly used household objects, a family could save \$300 to \$2000 per year.
- A Boston Consulting Group survey found that more than half of US-based manufacturing executives at companies with sales greater than \$1 billion are planning (or actively considering) to shift production from China back to the U.S. However, other studies suggest that while there is a slight increase in U.S. manufacturing, there is not a wide-scale movement towards reshoring.

## Business responses

- Organovo, a California-based start-up, is developing printable human liver tissue.
- New Matter, an easy-to-use \$200 3D printer, is being created to make sharing a 3D object with a friend as easy as sending a text message. It's expected to be available in 2015.
- In 2013, Walmart committed to sourcing an additional \$250 billion from US-produced goods in ten years. It will do that by buying more of the goods it already buys from U.S. manufacturers, sourcing new-to-Walmart US-produced goods, and reshoring some products that it already sells.

## Questions

- How could the growth of distributed manufacturing affect your business?
- The growth of 3D printing may drive customer expectations for products that are customizable, modular, and upgradeable. How would this impact the design of your products?
- Are your products capable of being produced by consumers at home, without any need for you? How can you ensure that you are adding value?
- If consumers have more power to create the product they want, how does that affect the retailer's responsibility for product stewardship, performance, or recyclability?

# Advances in biotechnology

Biotechnology is rapidly advancing as new technologies, such as synthetic biology and rapid genomic sequencing, work faster and become more affordable. These advancements are driving the development of powerful new applications in sectors ranging from agriculture to energy to medicine.



## Signals of change

- The impacts of biotechnology are distributed across the economy, but they are particularly significant for food production. Many experts believe biotechnology will play a key role in food security in the future, but consumer acceptance of it in food is far from certain.
- The U.S. biotech industry generates \$98 billion in annual revenue and employs roughly 1.6 million people.
- The garage biotech movement is an extension of the hacker principle applied to genetic engineering and synthetic biology. Although not generally pushing the boundaries of the science, do-it-yourself (DIY) groups conduct projects such as analyzing their own genomes, making fluorescent yogurt, and finding ways of making the technology cheaper to use.
- There is concern that the tools of bioterrorism may become widely available. The U.S. Federal Bureau of Investigation has set up a neighborhood watch-type scheme with groups like DIYbio as an early warning system for identifying suspicious behavior.

## Business responses

- Ecover is developing an algae-based liquid laundry soap in an effort to reduce the use of palm oil in its products. Other benefits include fewer greenhouse gas emissions, less water use, and reduced land competition.
- Unilever has also developed algal oils and adopted them for its Dove and Brylcreem products through a joint partnership with biotechnology company Solazyme.

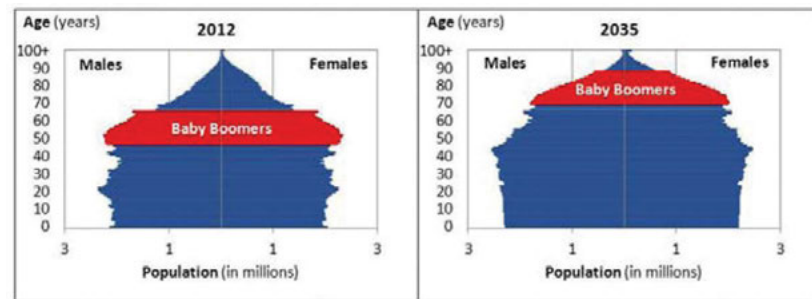
## Questions

- Biotechnology is impacting a wide range of materials (such as food and fibers) and industrial processes. How might this affect your business?
- Manufacturers face mounting pressure to use biotechnology in consumer products. What role can retail play in helping consumers to make informed choices about the ingredients in their products?

# Shifting demographics

The U.S. population is growing and changing, becoming older and more multicultural society. The global population is also increasing and the Millennial generation will soon be filling out the workforce.

Population by Age and Sex: 2012, 2035, and 2060



United States  
Census  
Bureau  
U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU

## Signals of change

- Unlike many developed countries, the population of the U.S. is still growing rapidly, as a result of a relatively high birth rate, increased life expectancy, and continuing immigration, thus increasing the size and diversity of local markets.
- More than half the growth in U.S. population between 2000 and 2010 was attributed to the increase in the Hispanic population. Based on current census data, the white majority will become the minority by 2043.
- By 2030, current projections estimate that there will be about 72 million Americans older than 65, more than twice the number there were in 2000. Projections also say there will be 78 million Millennials in 2030.
- Millennials already account for \$1.3 trillion in direct annual spending in the U.S. This sum is projected to increase as they reach peak earning and buying power.

## Business responses

- New businesses targeting the needs of ethnic groups are emerging. Retail real estate firm The Legaspi Company has successfully rehabilitated 10 struggling shopping malls by transforming them to cater to Hispanic families.
- Technological solutions are being developed to alleviate the caregiver shortage for the growing elderly population. Devices like Lively provide low-cost, in-home kits that monitor the whereabouts of the user so that family members can remotely keep track of elderly relatives and be alerted if there are any breaks in their daily routines.

## Questions

- How will changing demographics impact your customers and employees? How will you meet the needs of different groups, such as the aging population, the multicultural population, and the emergent Millennial generation?
- How will a growing global population impact your overseas business operations and customer base?



# Urbanization in the United States

Despite a pause or even reverse in city growth in the late twentieth century, cities are now experiencing a resurgence. Shifting patterns of settlement have implications for infrastructure, people's lifestyles, and for consumer priorities and demands.



## Signals of change

- According to the U.S. Census Bureau, “the nation’s urban population increased by 12.1 percent from 2000 to 2010, outpacing the nation’s overall growth rate of 9.7 percent for the same period.”
- In his 2013 book *Reshaping American Metropolitan*, Arthur Nelson explores a shift toward urban lifestyles in the United States, citing recent surveys that show that “about half of Americans want to live in walkable communities with mixed housing and other mixed uses.”
- By 2025, large U.S. cities are expected to generate more than 10 percent of global GDP growth, a bigger contribution than all of the large cities of other developed countries combined.
- Urban planners are increasingly concerned with smart and sustainable cities. Cities such as New York and London are experimenting with apps for parking and other services, designing for ample green space, and building bike lanes.
- There is criticism that cities are becoming places where only the rich can afford to live. The most expensive cities in U.S. include New York, Washington D.C., San Francisco, and Los Angeles. City planners and citizens are concerned about gentrification and affordability of city services.

## Business responses

- Retailers like Target, The Office Depot, and Walmart are expanding into cities by opening smaller format stores in urban areas. In some cities, like Chicago, large retailers have met with resistance from local residents.
- Retailers like Petco and Best Buy are developing new store brands that adapt to smaller spaces.
- Ikea is developing alternative methods of transportation, like buses and water ferries, to its stores to attract urban consumers.

## Questions

- What goods and services would appeal to urban dwellers?
- How might retail stores adapt to a growing urban population?
- How might changing densities of settlement affect store formats and siting?

# Global economic shifts

The global economy is changing, with sustained economic growth in emerging economies, such as China, India, and Brazil. The economic center of the world is moving South and East—with middle-class growth in those economies. Meanwhile, global economic inequality is rising—the United States has the greatest wealth disparity out of all the developed economies in the world.



## Signals of change

- “Severe income disparity” ranked fourth in the top 10 global risks in the World Economic Forum’s *“Global Risks 2014”* report. It also ranked as the risk most likely to occur for the third year in a row.
- According to a recent report by Oxfam, almost half of the world’s wealth is now owned by only one percent of the population, and seven out of ten people live in countries where economic inequality has increased over the past three decades. Wealth disparity in the United States has been rising steadily since the 1970s.
- The Brookings Institution estimates that there are 1.8 billion in the global middle class (as of 2013), which will grow to 3.2 billion by the end of the decade.
- According to PwC, the demographics and wealth gaps between shopper segments are expected to widen by 2020. This may create shopper segments with different expectations for product offerings and shopping experiences.

## Business responses

- In February 2014, clothing retailer Gap, Inc., announced that it would unilaterally raise its hourly minimum wage to \$10, impacting 65,000 employees.
- As of 2012, 55 percent of Unilever’s total global business comes from developing markets.
- New business models are being developed to sell a variety of products in African and Asian countries through microfranchisees. Companies like Solar Sister (which sells solar lamps) and Living Goods (which sells a variety of products) are using those models to distribute goods to otherwise difficult-to-reach communities.

## Questions

- What are the implications of wealth fragmentation for your customers and employees? How will this affect your marketing and human resources strategies?
- There may be hidden risks and opportunities to your business from the growth of the global middle class. How can you uncover these and address them?

# New approaches to health and wellbeing

Medical spending on obesity in the United States now accounts for 20.6 percent of U.S. health care expenditures; at \$190 billion per year, this figure exceeds costs related to smoking.



## Signals of change

- The cost of healthcare and a greater understanding of the determinants of poor health are placing a greater emphasis on prevention in addition to treatment. As a result, there has been an explosion in digital healthcare innovation and changes in lifestyle approaches.
- Medical spending on obesity in the U.S. now accounts for 20.6% of U.S. healthcare expenditures; at \$190 billion per year this figure exceeds costs related to smoking.
- According to the Pew Internet Research Project, seven out of ten Americans track a health indicator for themselves or a loved one.
- Governments are more and more interested in introducing taxes and other measures to nudge behavior to improve health. The Prevention and Public Health Fund under the Affordable Care Act provides funds for local governments that want to experiment with obesity prevention.
- Although the fate of New York City's soda ban sits with the State Court of Appeals, Mexico launched a similar scheme in January 2014 in an effort to curb sugar consumption and address its obesity crisis.

## Business responses

- Nike's FuelBand tracks whole-body movement and intensity and provides feedback and reminders via a smartphone app.
- Retailers like Walgreens and CVS are investing in in-store clinics to provide cost-effective and convenient health services.
- Safeway provides its employees with a variety of healthcare options including its CareConnect program, discounts at national fitness centers, online healthcare decision tools, and more. Its healthcare programs were so successful that it spun off a new venture, Safeway Health, to help other organizations apply the same programs.

## Questions

- Health delivery is moving out of the doctor's office and into everyday life. How can your business help promote the health and nutrition of your employees and customers?



# The ubiquity of data

The accumulation of vast amounts of data, combined with an exponential increase in computing power, has enabled the use of new and powerful insights in every aspect of society. Companies that successfully leverage Big Data can provide highly targeted products and services. At the same time, the proliferation of individuals' data and the increasing sophistication of analytic algorithms threatens to undermine individual privacy.



## Signals of change

- In 2012 alone, humans generated more data than over the course of our entire history up to 2011. The rate of production of data from internet and mobile phone use, digital sensors, and the digitization of public and commercial data more than doubles every two years.
- The International Data Corporation and International Institute for Analytics estimate the global market value of Big Data at \$16.1 billion (as of 2014), and see it growing six times faster than the overall information technology market.
- Regulations around what data is truly private are shifting; Google search histories and tweets, for instance, are both admissible as evidence in court. In 2009, Google searches were used to convict a hit-and-run driver when it was found he was searching for the phrase “hit and run” after the crime.
- In May 2014, the European Court of Justice ruled against Google in a landmark “right to be forgotten” ruling that would strip Google of a large amount of private data on individuals.

## Business responses

- Amazon filed a patent for anticipatory shipping in January 2014, a system that can predict purchases and prepare products for shipping before a consumer has purchased them.
- In 2013, personal genomic analysis company 23 and Me came under fire from the U.S. Food and Drug Administration for offering users a profile of their health risks based on an analysis of their genomic data.
- Technology companies like Google and Facebook are using knowledge of their users to customize the users' experiences and advertise to those users.

## Questions

- How can your business leverage the insights that are now becoming possible through Big Data to improve operations or enhance customer experience?
- What sorts of data privacy issues do you anticipate for your business? How will you deal with them?



# Radical transparency

The rapid increase in access to data and information – mainly through the internet – combined with shifts in consumer expectations is creating significant change in organizational and individual transparency. Technological developments mean that in the not-too-distant future, every detailed aspect of a business could be fully in the public eye.



## Signals of change

- According to Deloitte, future consumers will “expect and demand transparency in product and service quality, pricing, and company policies, and procedures.”
- Customer demand for supply chain transparency has led to the proliferation of certification standards for commodities. The number of certified goods increases every year according to Fair Trade USA. Three-quarters of consumers surveyed said Fair Trade made them feel “positive” or “very positive.”
- Regulations, such as the U.S. Securities and Exchange Commission’s conflict minerals rules, are increasingly requiring companies to be transparent about the sourcing and composition of their products. Similar regulatory mechanisms are already being proposed to tackle other supply chain issues.

## Business responses

- Whole Foods Market has committed to full GMO transparency by 2018 for its grocery stores. By that date, all products that contain GMOs will be clearly marked.
- Fashion company Everlane seeks to introduce radical transparency to high fashion and challenge the high premiums associated with it. Everlane’s website features an interactive map where consumers can view the factories where products are made and read stories about the production process.
- Consumer products companies like Clorox, S.C. Johnson, and Seventh Generation are listing their product ingredients on their public websites.

## Questions

- How would greater public scrutiny of your operations and supply chain impact your business?
- What measures can you take to make your business operations more transparent and build trust with all of your stakeholders, from consumers to communities to activists?
- Would greater transparency about the challenges you face around operating more sustainably have a positive or negative impact on relationships with your customers?

# Self- and community-reliance

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New models of self- and community-reliance may flourish as a result of greater access to digital platforms, growth in distributed manufacturing, and the rise of the sharing economy, with the potential to distance people from brands. How this trend will unfold is uncertain, but its impact will be fundamental to retail's health over the next two decades.



## Signals of change

- The number of Maker Faires around the country has grown more than twentyfold in the past seven years, from 22,000 in 2006 to 530,000 in 2013. President Obama hosted the first White House Maker Faire on June 17, 2014.
- Some have called 'the IKEA Effect' one in which people cherish the things they build more than the things they buy.
- The number of farmer's markets in the United States increased 9.6 percent from 2012 to 2013, maintaining the trend of steady increases since the U.S. Department of Agriculture began monitoring them in 1994.

## Business responses

- Etsy, an online marketplace for buying and selling unique goods, sold more than \$1.35 billion worth of creative goods in 2013 – the biggest year for the Etsy community since it was founded in 2005.
- Threadless is an online community of artists who create designs, which are then evaluated via their e-commerce website. The community votes on submitted designs each week, which are then printed on clothing and sold worldwide through Threadless's online store. Winning designers receive an award up-front and a commission when one of their designs is sold.

## Questions

- How would a move toward self- or community- reliance impact your business?
- Are there any new opportunities for your business model that support self- or community-reliance?

# The rise of the sharing economy

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Rather than buying new products to consume, people are increasingly sharing or renting things like cars, bikes, power tools, clothes, housing, and even leftover food. This trend could grow and continue to create a new form of consumer economy in which experiences and access to items are more desirable than ownership. However, it is uncertain whether the barriers to the sharing economy will grow as well.



## Signals of change

- According to *Fast Company*, the U.S. sharing economy was worth \$26 billion in 2013 and is predicted to increase.
- Havas Worldwide, one of the largest integrated marketing communications agencies, reported in its 2014 “New Consumer and the Sharing Economy” study that more than a third of Millennials already belong to a sharing service or expect to join one within the next year.
- Regulatory uncertainty is an important factor shaping the future of the sharing economy and may impact its ability to grow, and the rate at which it can, in different industries. For example, peer-to-peer taxi services have been banned in some cities after strong lobbying against them by traditional taxi organizations.
- The gig economy, a segment of the sharing economy in which people compete to offer services at low prices, has been criticized recently. In a recent *Fast Company* article, “Pixel and Dime: On (Not) Getting by in the Gig Economy”, editor Sarah Kessler highlighted the lack of benefits and struggle to earn minimum wage that many of these workers face.

## Business responses

- Companies like Zipcar, Rent the Runway, and Airbnb are using technology to enable people to share on a large scale. Recognizing the size of the opportunity, car rental company Avis acquired Zipcar for \$500 million in March 2013.
- Instacart, a peer-to-peer grocery delivery service, connects people who have money, but no time to go shopping with people who have time, but would like to make extra money. It’s notable in that it does not intrude on a regulated industry, provides competitive wages, and is leveraging human labor rather than technology to drive value. TaskRabbit is another such example.

## Questions

- Where do opportunities for your business exist in the sharing economy? Could you develop a new business model around products or services you already offer, develop new partnerships, or acquire new businesses?
- Is there a risk that consumers will be less inclined to purchase your products because they can simply share items owned by other consumers?
- How can your business help address the potential downsides of the sharing economy such as the gig economy?



# Empowered consumers

Empowered by social media and easier access to more data, consumers are more and more informed about the ecological and social impacts of their buying habits and have greater means to create pressure for change. This evolution of power is transforming the nature of the relationships between retailers and consumers.



## Signals of change

- Havas Media's 2014 "Meaningful Brands" report found that 71 percent of U.S. consumers think companies and brands should play a role in improving their quality of life and wellbeing, while only "36%" think that brands work hard at improving their quality of life and wellbeing.
- One of the three major findings of IBM's 2013 global chief marketing officer (CMO) survey found that CMOs believe an organization's character (i.e., how it behaves) is as important as the products and services that it sells.
- According to the World Economic Forum's *"Engaging Tomorrow's Consumer"* report, trust (78 percent), environmental friendliness and ethical practices (71 percent), and alignment with a cause or social issue (61 percent) are among the top buying concerns for Millennials. 86 percent of Millennials are willing to share their brand preferences online.

## Business responses

- Chipotle's annual Cultivate Festival inspires consumers to discover family farmers, local products, fresh ingredients, and more around its Food with Integrity platform.
- My Starbucks Idea seeks to crowdsource ideas from consumers. More than 150,000 ideas have been submitted and two million votes have been cast over five years (more than the last mayoral election in Chicago).
- GoodGuide, a smartphone app, enables consumers to review various health, sustainability and other criteria by scanning the product's barcode. It currently catalogues information about over 210,000 products.

## Questions

- How will you build trust with consumers of the future?
- What will you do to ensure that your brands continue to engage with consumers on the issues they care about?

# Circular economy

The circular economy is an integrated industrial system inspired by the natural world, in which waste from one process provides the input for another process. In that way, nothing is discarded. For retail, applying this system typically means finding new uses for products and materials that would otherwise be discarded. As resources become scarcer and more expensive, interest in developing a circular economy is growing.



## Signals of change

- Highly beneficial from a materials and costs point of view, a circular economy is likely to continue to emerge over the next two decades. Its development is at an early stage, and barriers to scale include the need for regulatory change, new technology, cross-industry collaboration, and changes in consumer behavior.
- According to the Ellen MacArthur Foundation, the circular economy has the potential to generate more than \$1 trillion in GDP globally. Currently, only 20 percent of material goods are recovered, primarily to be reused or decomposed. In addition, the report expects this economy's expansion to lead to such benefits as innovation, land productivity, soil health, and job creation.
- Thirty-one U.S. states have extended producer responsibility (also known as product stewardship) laws for specific products. Connecticut, Massachusetts, and Vermont have become the first states to ban the disposal of organic matter in landfills, forcing significant improvements in food waste reduction.

## Business responses

- Launched in May 2014, the business-led Closed Loop Fund aims to provide low interest loans to U.S. municipalities to advance projects that improve recycling infrastructure from a \$100 million fund. Initial investors include Walmart, The Coca-Cola Company, PepsiCo, Procter & Gamble, Unilever, Johnson & Johnson and Goldman Sachs.
- Foss Manufacturing produces a high-quality polyester fiber from 100% recycled plastic bottles that are used as fiber in clothing, carpeting, furniture, and other applications.
- Patagonia provides product repairs, helps host a marketplace for reselling used clothing, and recycles all of its products.

## Questions

- How could your business help build a circular economy? Do you or your consumers produce waste products that could be valuable inputs for another part of your supply chain or another sector?
- Which businesses, within or outside of your sector, are potential collaborators in building circular material systems?
- What is the role of your business in addressing the barriers to creating a circular economy, including regulatory, technological, infrastructural, or behavioral barriers?



# Decline in ecosystem services

Ecosystems provide essential goods and services that sustain life – from the purification of air and water to the provision of food, fuel, and fiber. Although generally not valued or factored into investment decisions, industries such as agriculture, pharmaceuticals, or cosmetics could not exist without them.



## Signals of change

- A study by the The Economics of Ecosystems and Biodiversity (TEEB) found that environmental externalities—including loss of natural resources and nature-based services—are costing the global economy \$4.7 trillion per year. The study estimates that conserving forests would eliminate \$3.7 trillion in damage related to climate change by 2030 and that mismanagement of the world's fisheries costs \$50 billion each year.
- The 2005 Millennium Ecosystem Assessment found that approximately 60 percent of global ecosystem services are degraded or used unsustainably, resulting in nonlinear changes (i.e., accelerating, abrupt, and potentially irreversible) that have important implications on human wellbeing and are affecting the poor disproportionately.
- Emerging complementary approaches to traditional conservation include restoration and rewilding, where targeted interventions aim to increase biodiversity in degraded ecosystems. Examples include re-introducing native plant and animal species back into the White River National Forest in Colorado to address disturbed areas and reintroducing trout into the River Wandle in London, England to restore river health in a polluted area.

## Business responses

- A few companies are exploring monetary valuation of ecosystem services and, in some cases, are even integrating these financial values into their corporate accounting. PUMA's Environmental Profit and Loss Account (EP&L), for instance, evaluates "environmental impact for greenhouse gas emissions, water use, land use, air pollution and waste generated through the operations and supply chain" and has received considerable media attention and a few prominent supporters.

## Questions

- In what ways does your business depend, directly or indirectly, on ecosystem services?
- How would your investment decisions change if you or your stakeholders incorporated the costs of ecosystem services?

# Water insecurity

More water is being used for agriculture, industry, energy generation, and in-home uses as population grows and globalization increases. Freshwater is becoming scarcer and increasingly expensive, which will necessitate changes in usage and conservation in both industrial and household contexts.



## Signals of change

- According to the Organisation for Economic Co-operation and Development (OECD), almost half the world's population will be living under severe water stress by 2030 under a business-as-usual scenario.
- Although the United States is classified as medium risk for water stress overall, large areas are already suffering: Arizona, California, Kansas, Nebraska, New Mexico, and Texas are all classified as being at high or extreme risk.
- Concern over embedded water in food and other products is also expected to increase in the next five years. Trade in embedded water has steadily increased over the last four decades. Approximately 15 percent of domestic water is exported via trade.
- According to the Water Research Foundation, water rates increased in over 1,961 utilities in six U.S. states over the last decade – at a rate faster than Consumer Price Index (CPI) inflation.

## Business responses

- The Coca-Cola Company has committed to becoming “water neutral” by 2020. It needs 333 ounces of water to generate one dollar of revenue and is highly dependent on efficient water use.
- According to the U.S. Department of Agriculture, the ongoing drought in California could potentially have large and lasting effects on fruit, vegetable, dairy, and egg prices beyond forecasted CPI increases; drought conditions in Texas and Oklahoma could drive beef prices up further.

## Questions

- What is the water footprint of your current products, services, and operations?
- What are the implications for your business if relatively inexpensive and/or adequate water supplies are no longer guaranteed?
- What steps can you take to minimize your reliance on fresh water?
- How can your business help people use water more efficiently?



# Resource scarcity

Many key natural resources are becoming more scarce and expensive. An increase in global interconnectedness means that shocks can quickly ripple throughout supply chains, causing price spikes and volatility. Governments and businesses will likely continue to struggle to secure continuous supplies of key resources and are developing alternatives where possible.



## Signals of change

- Humanity currently uses resources at a rate 50 percent faster than they can be regenerated by nature. By the early 2030s, we are projected to need more than two planets to meet resource demand, compared to half a planet's worth in the 1960s.
- Resource demand from emerging markets, particularly in Asia, in the past decade has reversed the price declines of the 20th century. For example, metal prices have jumped 176 percent since 2000 after declining throughout the 20th century, according to McKinsey.
- In 2014, 80 percent of countries consume more biocapacity (e.g., cropland, fisheries, forests, etc.) than is available within their borders. Copper, zinc, tin, and nickel have seen a near exponential rise in production. There is not enough copper to meet the demands of the future global population at the same levels used in Western lifestyles today.

## Business responses

- Pronutria, a biotech company, has developed a process that converts algae to protein necessary for human nutrition. The company claims it can feed a billion people on an area of land the size of Rhode Island.
- In June 2014, BlueOak, a leader in sustainable sourcing, received \$35 million from the Arkansas Teachers' Retirement Fund (a consortium of European and domestic investors) and the Arkansas Development Finance Authority to build the first urban mining refinery in the United States capable of retrieving valuable metals, including gold, silver, copper and palladium, from e-waste. Production at the Arkansas facility is scheduled to begin by the end of 2015.

## Questions

- What natural resources does your business depend on for its products, and what are the medium- and long-term prognoses for these resources?
- How could resource scarcity affect your business indirectly (e.g., through regulation, consumer demand, resource conflict, or protectionism)?
- What actions can you take to secure resources or find alternatives?



# Time poverty

Time poverty is a growing concern for Americans, who work longer hours than citizens of many other countries. This influences many other retail-related trends such as pressure for greater convenience, online shopping, delivery-on-demand, and retail everywhere. Time poverty also contributes to increased stress and mental health problems.



## Signals of change

- The average American worked 1,800 hours in 2013, significantly more than workers in countries like France (1,490 hours) and Germany (1,430 hours). People in East Asian countries, including Korea, Hong Kong, and Singapore, work even more hours than Americans.
- On average, a U.S. worker spends 60 percent of the day (14.3 hours) on personal care and leisure (including eating and sleeping). This is less than the average (15 hours) for the 34 Organization for Economic Co-operation and Development (OECD) member countries.
- According to the Anxiety and Depression Association of America, anxiety disorders are the most common mental illness in the U.S. and affect 40 million Americans. Lack of time, or stress, can exacerbate an anxiety disorder. Anxiety disorders cost the U.S. \$42 billion per year, almost one-third of the nation's yearly mental health bill.

## Business responses

- More employers are experimenting with ways to ensure their employees are healthy and happy—from offering four-day workweeks to nutritious food on the job. In a 2012 *New York Times* article, tech CEO Jason Fried described the productivity gains that came from shifting his company to a four-day workweek.
- Meditation training is becoming widespread in innovative business communities in Silicon Valley. Companies, such as Google, are hiring Zen masters to lead mindfulness exercises.

## Questions

- How will time poverty impact the way customers interact with your products and stores?
- How can your products or services enhance customer wellbeing and minimize time poverty?
- What can you do to ensure the productivity and wellbeing of your employees?

# Geopolitical instability

Climate change, resource scarcity, poverty, and ideological conflicts all threaten to continue or deepen geopolitical instability. Today's retail supply chains are global in nature; meaning that even localized natural, humanitarian, and political disasters can influence the raw material extraction, production, and transportation of products around the world.



## Signals of change

- Geopolitical instability indirectly contributes to fluctuations in commodity prices and impacts the supply of raw materials. Experts believe we are likely to see more system-level disruptions (e.g., attacks on oil pipes, power grids, IT networks, and the food supply) as a high-impact way of expressing dissent. Approximately 60% to 70% of historical commodity price movements are associated with non-commodity shocks, such as political insecurity, rather than direct shocks to commodity markets.
- According to a study conducted by the Millennium Project in 2012, half of the world is vulnerable to social instability and violence due to growing global and local inequalities, falling water tables, increasing energy demands, outdated institutional structures, inadequate legal systems, and increasing costs of food, water, and energy.
- A September 2013 McKinsey survey found that 47 percent of executives considered geopolitical instability the biggest threat to domestic growth in the next year; 69 percent of respondents (up from 51 percent in June) cited geopolitical instability as a threat to global growth.

## Business responses

- In May 2014, the *Financial Times* reported that China and Vietnam's political standoff in the South China Sea is causing significant disruption to global supply chains. For example, Taiwanese electronics manufacturer Foxconn, which produces iPhones and iPads for Apple, halted work for three days as a precaution. Yue Yuen, the world's biggest manufacturer of sports shoes and supplier to Nike and Adidas, also shut down its operations.

## Questions

- In what regions would conflict disrupt your supply chains?
- How resilient are your supply chains to changes in global trade relations?
- Have you conducted a risk assessment of your critical supply chains taking into account indirect threats such as resource scarcity, poverty, and climate change? What mitigating actions could you take now?

# Energy transformation

The U.S. energy system is transitioning in response to multiple factors, including energy security, increasing demand, cost, safety, advances in technology, and the need to lower greenhouse gas (GHG) emissions. Volatile energy costs will have profound impacts on business, both directly and indirectly.



## Signals of change

- A resurgence of fossil fuel production is underway in the United States, driven by the use of hydraulic fracturing (“fracking”) to extract “tight oil” and natural gas. Advocates see the shale boom lasting for 100 years; however, skeptics say it could collapse within five to ten years.
- Although natural gas emits fewer GHGs than coal, fracking is associated with environmental degradation, especially of water sources, and has attracted much public scrutiny.
- The cost of solar panels has dropped 75 percent since 2008.
- In June 2014, the U.S. Environmental Protection Agency (EPA) announced regulations to cut GHG emissions from coal-fired power plants by 30 percent by 2030 (from 2005 levels). The regulations will face years of legal challenges and it remains to be seen whether they will be implemented.
- On May 11, 2014, Germany set a new record by producing 74 percent of its energy from renewables. This record production occurred midday and solar and wind energy filled in a large portion of the power. The country is aiming for 80 percent of power to come from renewables by 2050.

## Business responses

- The solar portfolios of many leading U.S. retailers are growing as the overall commercial market continues to develop. Apple, Costco, IKEA, Kohl’s, Macy’s, Staples, and Walmart were among the top 10 on the 2013 Solar Capacity Rankings for installing more than 445 megawatts (MW) of solar photovoltaic capacity (up from 300 MW in 2012). This investment in solar has allowed companies to reduce energy costs and better plan for the future.
- Retailers like Ahold, Cabela’s, Macy’s, Safeway, Staples, Walmart, and Whole Foods are testing fuel cells at their stores to generate energy on-site.

## Questions

- How exposed are your business and supply chains to unexpected increases in the cost of energy, including electricity and fuels?
- How exposed is your customer base to increases in energy costs? How could increases change their lifestyle and purchasing behavior?
- Are there steps your business should take to hedge against possible cost increases and a change in the energy mix, for example, through on-site power generation?



# Education revolution

The educational model that prevailed in the United States for decades is rapidly changing. There is a widespread feeling that education is no longer preparing students adequately for the world, but little agreement on how it should change. At the same time, technology is enabling new forms of teaching delivery, such as massive open online courses (MOOCs), that are making education more widely accessible and affordable.



## Signals of change

- In recent years, thousands of students who cannot access elite universities have been enrolling in online courses. At Stanford University in 2011, 160,000 students in 190 countries registered for an online artificial intelligence course.
- Educational models are being questioned as employers identify a gap between degrees and the skills that jobs require. According to McKinsey, 45 percent of U.S. employers say lack of skills is the main reason for entry-level vacancies, and only 42 percent of worldwide employers believe new graduates are adequately prepared for work.
- The rising cost of U.S. college education has left many questioning its value and many others graduating from college with a heavy debt burden. According to the *New York Times*, student debt topped \$1 trillion in May 2014. A record number of college students in America graduate deep in debt. Former U.S. Treasury Secretary Lawrence Summers said that student loan debt was taking the “life out of the housing recovery.”
- Net Impact, a leading nonprofit that supports a new generation to work within and beyond business for a sustainable future, reported in its 2013 “Business as UNusual: The Student Guide to Graduate Programs” that social and environmental issues are becoming a standard feature in leading MBA programs, in part driven by overwhelming student demand.

## Business responses

- Companies like Apple, Ford, LEGO, and Disney are members of the Partnership for 21st Century Skills, an organization that builds partnerships among educators, businesses, communities, and governments to promote the teaching of 21st century skills.
- In partnership with handset makers Nokia, Samsung, and Ericsson, and network infrastructure manufacturers Qualcomm and MediaTek, Facebook CEO Mark Zuckerberg launched Internet.org to connect the world’s poor to basic internet services. It aims to alleviate poverty and provide education by allowing more people to participate in the knowledge economy.

## Questions

- What skills will be needed for the future jobs in your industry?
- Is there a role for your business to work with those innovating in the educational system?
- What will it mean for the workforce and consumers if people leave college with a high debt burden?

# Coping with climate change

In addition to the direct environmental impacts of climate change (e.g., increases in floods, droughts, extreme temperatures, sea level rise, etc.), societal responses like regulations will shape the future of retail. Governments and organizations are likely to focus even more on reducing carbon emissions and to place a greater emphasis on adapting and developing climate resilient models.



## Signals of change

- The Intergovernmental Panel on Climate Change's "Fifth Assessment Report" warns that carbon emissions grew twice as fast during the past decade as they did over the previous three decades.
- The World Bank estimates that adapting to climate change will cost the world \$70 to \$100 billion per year by 2050—the same order of magnitude as the foreign aid that developed countries now give each year.
- The 2014 U.S. National Climate Assessment declared that climate change is no longer a future possibility, but a current reality.
- Regional cap-and-trade initiatives have cropped up in the United States and Canada and are considered more efficient and effective than actions taken by individual states because they cover a broader geographic area (and more emissions), eliminate duplication of work among states, and help businesses by bringing greater uniformity and predictability to state rules and regulations.
- San Francisco recently hired the world's first Chief Resilience Officer to plan the city's long-term adaptive response to climate change.

## Business responses

- Two dozen major U.S. corporations (including ConAgra Foods, Delta Airlines, DuPont, Duke Energy, General Electric, Google, Microsoft, Walt Disney, Wells Fargo, and five major oil companies) are factoring the price of carbon into their strategic planning.
- Chipotle recently warned investors that extreme weather "associated with global climate change" might force it to stop serving menu items such as guacamole.
- According to Ceres's 2014 "Power Forward" report, 60 percent of the Fortune 100 have goals for shifting to more renewable energy or reducing greenhouse gas emissions.

## Questions

- Are your supply chains and operations resilient to climate change impacts, such as increased flooding, drought, and extreme storms? Do you have a climate change adaptation strategy?
- How might action by others to address climate change affect your supply chains and products?
- How could you improve business performance while lowering carbon emissions and preparing for climate risks?

# SCENARIOS

## About the scenarios

Becoming sustainable in the long run is about managing businesses to create long-term value in the face of economic, environmental, and social change. Scenarios can be used to challenge, inspire, and excite people to create more sustainable change. The scenarios are not intended to be predictions or visions of desired futures, but instead are coherent, plausible stories about possible futures. You will see them written as just that: stories.

They are a powerful tool to help any company:

- better understand trends, risks, and opportunities
- imagine different possible futures
- imagine new strategies and develop innovations
- intuitively understand possible challenges and opportunities

... and they can help retailers take action now to support their long-term success.



## Future scenario stories

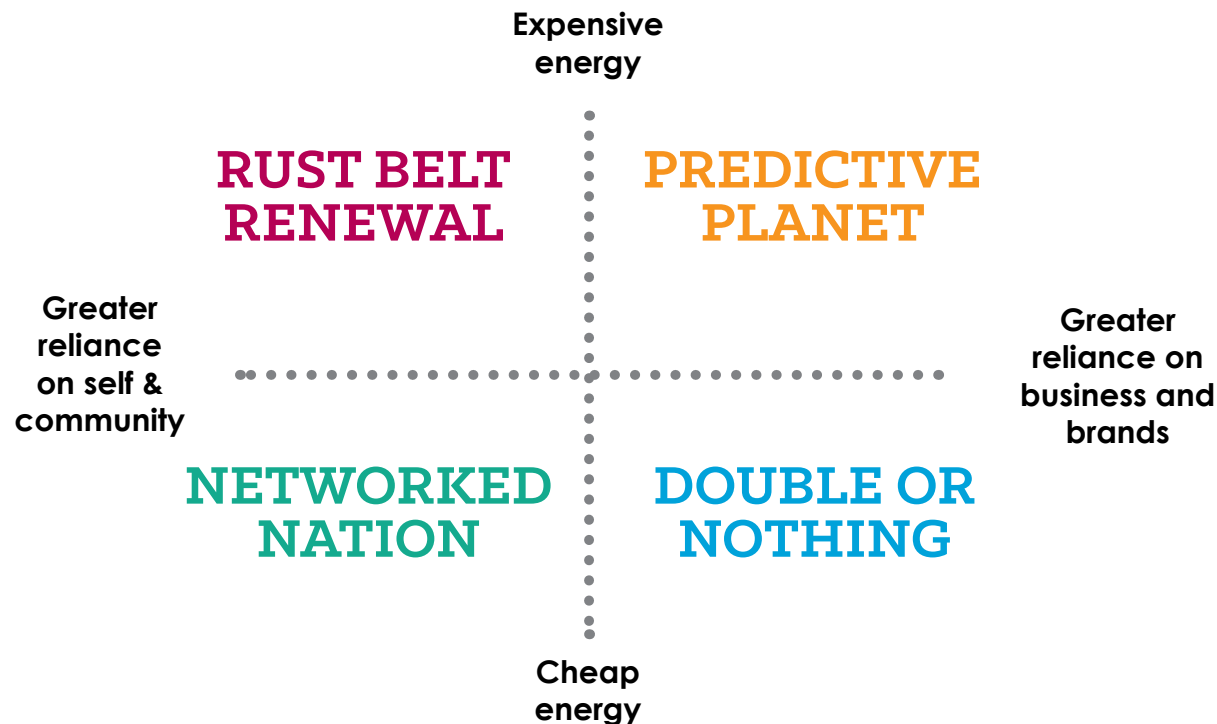
Each story is a structured exploration of the trends explored in the previous section:

**RUST BELT RENEWAL** – Geopolitical shifts have created challenges for the U.S. economy, but a resilient response is emerging based on local manufacturing and agriculture.

**PREDICTIVE PLANET** – Technology enables companies to fulfill consumer desires and offset high energy and resource costs, but is also contributing to the displacement of workers.

**NETWORKED NATION** – Peer-to-peer sharing and radical decentralization have created massive disruption for retail and the economy as a whole.

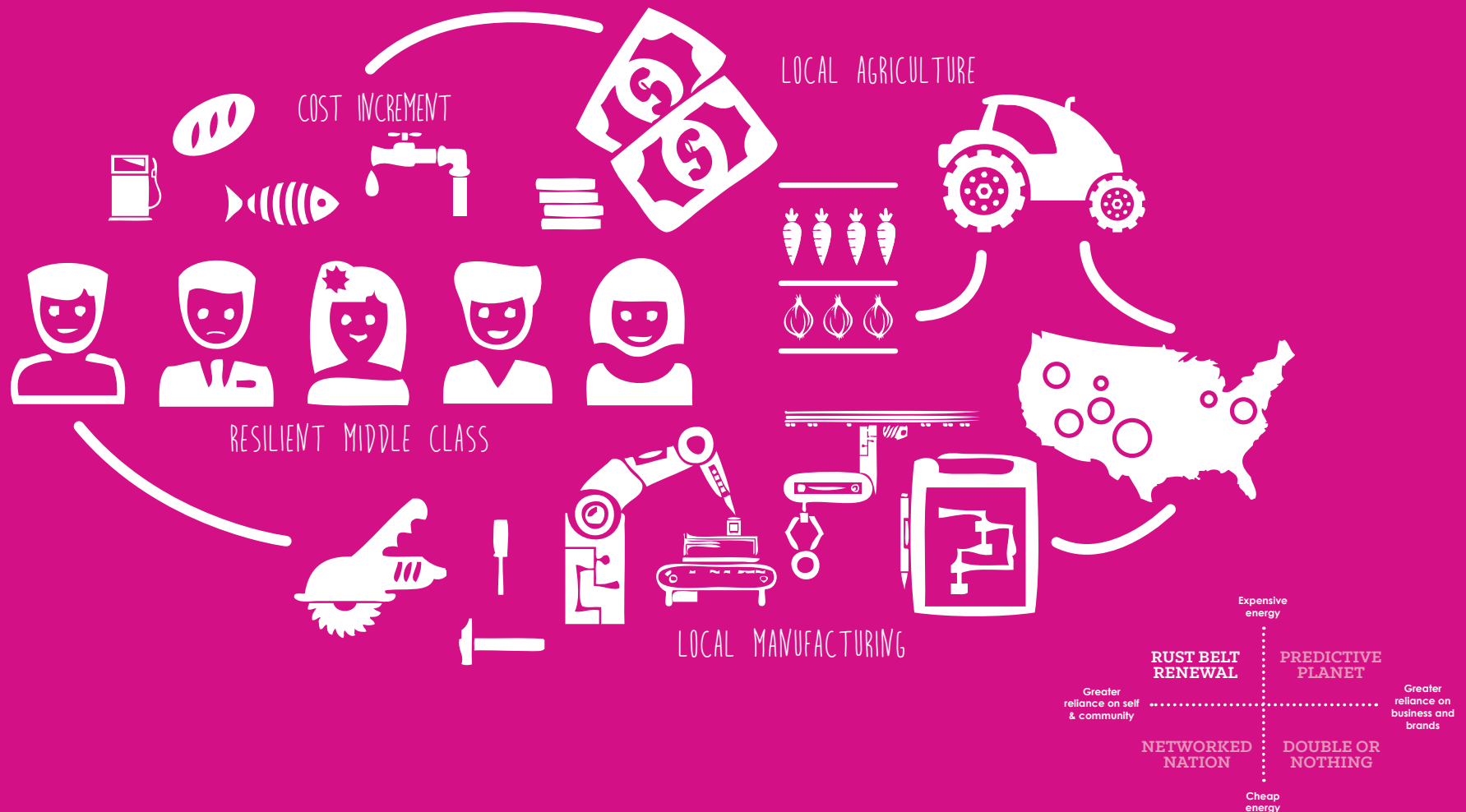
**DOUBLE OR NOTHING** – The U.S. is riding the wave of a cheap oil boom, but some worry that a crash may be imminent.





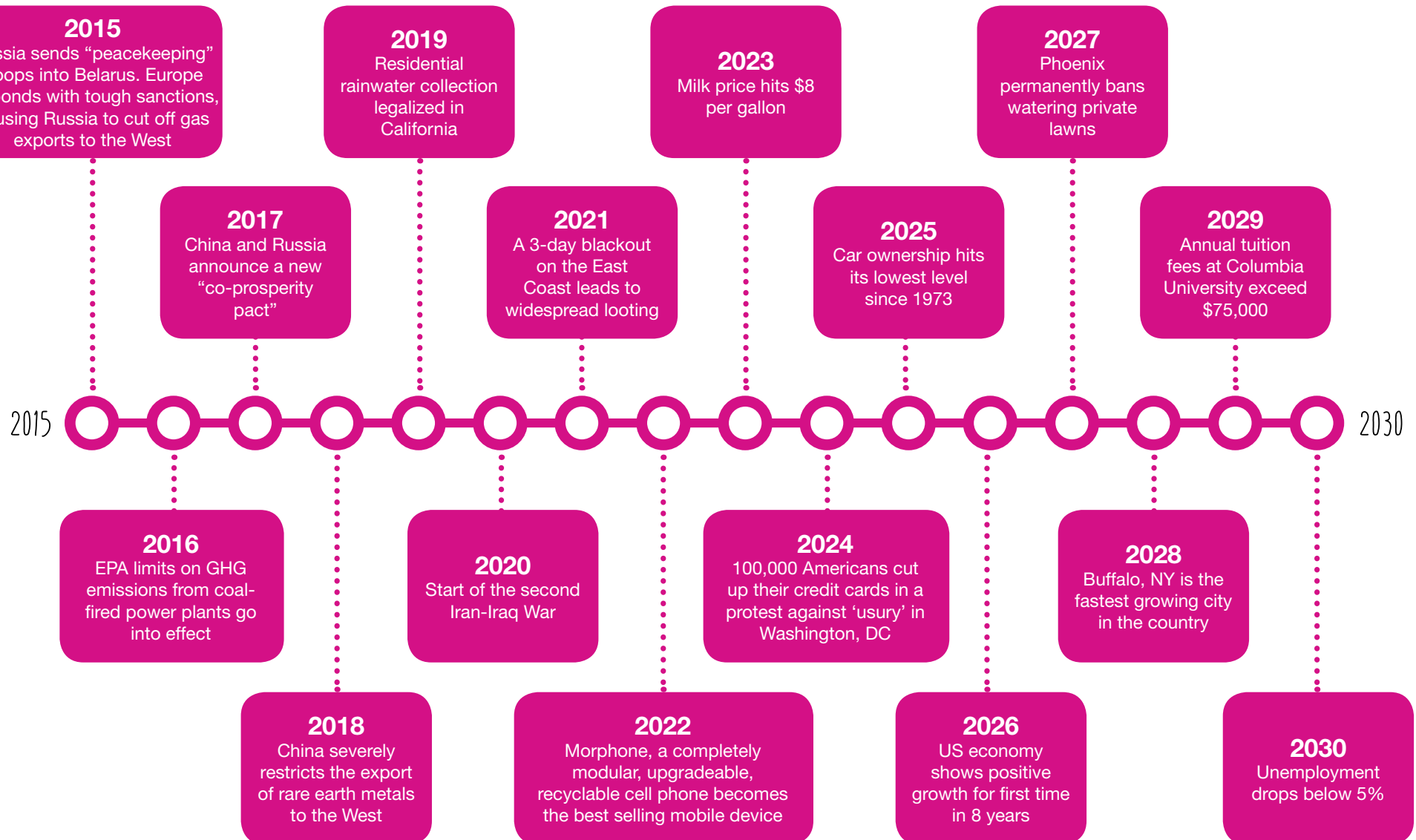
# RUST BELT RENEWAL

Geopolitical shifts have created challenges for the U.S. economy, but a resilient response is emerging based on local manufacturing and agriculture.



- 1 **The global context** has seen major shifts as China and Russia have turned away from the West, causing disruption but also prompting a resurgence of local manufacturing and agriculture in the United States.
- 2 **Energy** is expensive due to conflict in the Middle East and global competition for supplies. Transportation is costly and supply chains have contracted.
- 3 **Resource challenges** have raised the price of basic necessities like food and taken a toll on drought-prone states in the Southwest. A homegrown circular economy is emerging to mine landfills and waste streams for scarce materials to reuse.
- 4 **Key technologies** are those that enable small-scale manufacturing, local agriculture, and waste reclamation.
- 5 **The U.S. economy** was hit hard by the loss of China as a source of low-cost goods and by the higher cost of food and fuel. However, the recent turn toward local manufacturing and agriculture is helping to spur a recovery.
- 6 **Key regulatory issues** are largely concerned with conserving critical resources, such as water, and with encouraging the reshoring of production.
- 7 **Cities and mobility:** Most of the growth is taking place in the small and midsize cities of the Midwest, where legacy manufacturing infrastructure is being put back into use. Shared transit and living close to work are popular as ways of saving money on fuel.
- 8 **The retail industry** is characterized by shorter supply chains, localized production, and a focus on resilience.
- 9 **The retail environment** is smaller than it once was, and in addition to new items, retailers often offer used items, rentals, and classes for do-it-yourself consumers.
- 10 **People's attitudes about business** were negatively impacted by the price hikes of the late 2010s, but they have become more positive as businesses have reshored and created new jobs at home.
- 11 **Consumers** are more self-reliant and have embraced thrift, sharing, and making to save money. They're wary of depending on business to meet their needs.
- 12 **Products and services:** Consumers want products that last a long time and are repairable, upgradeable, and recyclable.

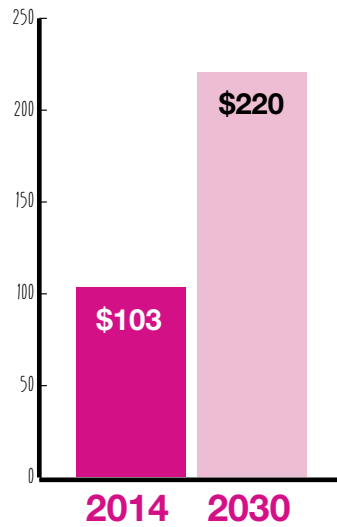
## The journey to this world



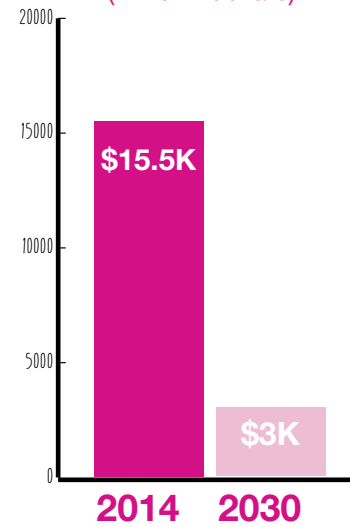
# RUST BELT RENEWAL

\*these indicators are illustrative and not the result of a quantitative modeling process

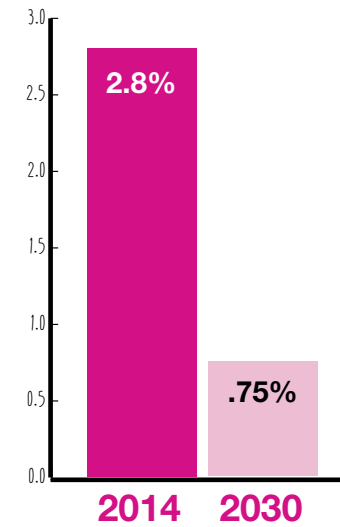
**Price of barrel of oil**  
(in 2014 dollars)



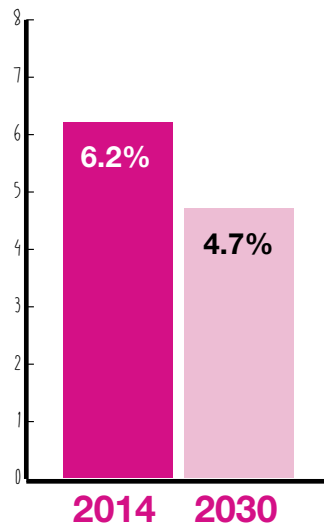
**Average U.S. household credit card debt**  
(in 2014 dollars)



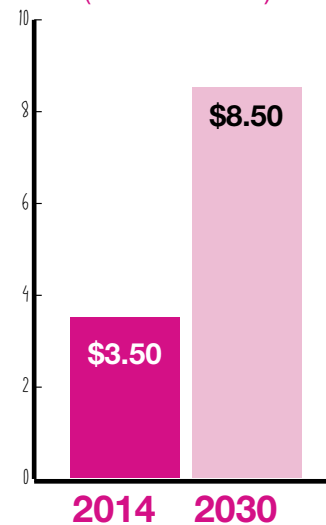
**Average household spend on clothing**



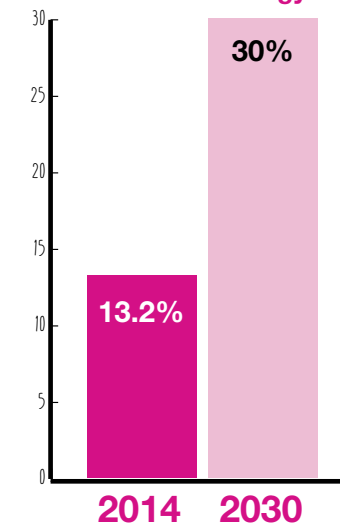
**Unemployment rate**



**Average price for a gallon of milk**  
(in 2014 dollars)



**Percentage of electricity from renewable energy**



## Overview:

The combined effects of geopolitical tensions and resource constraints have made fuel, water, and food that much more expensive. These conditions led to a decade of turmoil and stagnation in the United States as people struggled to adjust. Although net incomes have declined, a resurgence of local manufacturing and agriculture in the U.S. has provided employment for a more stable and resilient middle class.

## What is the global context?

Tectonic shifts in geopolitical relations occurred in the late 2010s as China and Russia forged a powerful new partnership and turned away from the West. At the same time, China was reorienting its economy toward higher value goods and services, and the flow of inexpensive manufactured goods from China to the West significantly declined. Although low-cost manufacturing centers emerged elsewhere, none had the centrally coordinated economic resources to be able to play the role that China once did. Meanwhile, widespread sectarian conflict in the Middle East wreaked havoc on global oil markets.

The United States and Europe have remained strong allies, but the former has shifted much of its trading focus to the Americas, particularly Canada, Mexico, and Brazil. The United States and China compete globally for energy and raw materials. India, the Middle East, and

some states in Africa have shifting bilateral relations with the different powers.

## How expensive is energy, and what is the energy mix like?

Ongoing conflict in the Middle East has significantly impacted oil production and made the price of gasoline highly volatile. Competition among the United States, China, and other countries for oil from other sources has kept prices high. In the United States, shale gas and oil yields have been steadily declining since 2016, and U.S. Environmental Protection Agency (EPA) restrictions on coal-fired power plant emissions have made grid electricity more expensive. Renewables are finally gaining traction but have been scaling slowly due to a lack of planning, political resistance, and incoherent regulations. Many companies are suffering from high electricity prices in the meantime. Small-scale, distributed, community energy solutions are taking off in places like the former Rust Belt cities of the Midwest—as lower regulatory hurdles and capital costs have made it easier to get them up and running.

Because of the high cost of gasoline, transportation has become painfully expensive for both consumers and businesses, which has dampened international trade and caused supply chains to contract. Electric vehicles are emerging as an attractive alternative, but they haven't

reached a large scale due to a lack of infrastructure. Electricity is more expensive for most people, except for the growing number of individuals and communities who get their power from small-scale renewables.

## **How are resources affecting the big picture?**

Starting in the 2010s, water became critically scarce in parts of the United States, such as the Southwest, and skyrocketing water bills hit both consumers and businesses. Agriculture in states like California and Texas suffers from heat and drought—significantly increasing the cost of meat, dairy products, and produce for consumers. These developments have driven the proliferation of small-scale, local farms and a shift toward more seasonal and vegetarian diets. Southwestern cities like Los Angeles, Phoenix, and Las Vegas have been losing residents for years as the region's climate becomes hotter and drier. Those who remain are increasingly the less wealthy, who lack the means to relocate.

Raw materials have become more expensive as well. In the early 2020s, China restricted exports of rare earth metals, which increased prices for electronics and other goods in the United States. The Department of Energy's Critical Materials Institute has been working to develop alternatives, but the results so far have been mixed. In the meantime, mining landfills and other parts

of the waste stream for valuable materials has become economically important, and disassembly line jobs have become a major source of employment. Most of this activity has been ad hoc, but more and more products are being designed for disassembly. The high cost of energy and resources is spurring the use of other types of waste as well. A grassroots circular economy has emerged, coordinated by consumers and entrepreneurs who identified it as an opportunity, rather than by government or big business.

## **What are some of the key technologies in this world?**

The pace of technological innovation has cooled off due to the high cost of energy and reduced consumer demand. However, technologies for small-scale manufacturing, local agriculture, and waste reclamation are all important. Residential gray water harvesting has become much easier, and anaerobic digesters to produce energy from biological waste have become more efficient and less expensive. 3D printing technology has advanced to the point that it plays a crucial role in the local lighting industry. Drones and sensors are widely deployed to increase the efficiency and output of small farms. Software to optimize the efficient allocation of all sorts of resources, whether automobile rides or recycled metals, is very popular.

## How is the U.S. economy doing?

The retreat of globalization, the higher cost of fuel and food, and the loss of China as a source of inexpensive manufactured goods caused a decade of economic pain and disruption in the United States. The abruptness of the changes prevented a quick or coordinated response, and many Americans had a hard time adjusting.

However, a resurgence of local manufacturing and agriculture has emerged in response. Rust Belt cities like Detroit and Buffalo are growing once again thanks to their low rent, skilled workforces, proximity to farmland, and legacy manufacturing infrastructure. Job growth is taking place within small and medium-sized local businesses, many of which are run as cooperatives. The return of local manufacturing and agriculture has helped to slow the decline of the middle class. The informal sector, comprised of off-the-books, unregulated economic activity, has also become an important part of the American economy, especially in areas like elder care. Although they pay poorly and lack benefits and security, such jobs offer a means to get by.

The cost of higher education has continued to outstrip inflation and is now affordable only for the elite. More and more people skip college in favor of private training programs, which have become increasingly sophisticated. Apprenticeships have also become much more common. Although median income has declined over the past couple of decades, employment is up.

## What are some of the key regulatory issues in this world?

The U.S. regulatory environment is slow moving and incoherent. In response to the global economic realignment, the U.S. government sought to promote reshoring of manufacturing by relaxing some regulations on labor standards and safety. The government also provides tax incentives for companies that move their manufacturing operations back to the United States.

Water use has become increasingly regulated as competition among agriculture, industry, and consumers has forced difficult decisions about allocation. Water efficiency standards have become more stringent and certain types of water-intensive irrigation and industrial processes have been prohibited. Most states now permit rainwater harvesting for residential use.

## Where do people live, and how do they get around?

Major growth has taken place in small and midsized cities, which are relatively affordable and offer better employment prospects for the middle class than either large cities or rural areas. The most attractive are those in the Midwest that have the infrastructure nearby to support local manufacturing and agriculture. Suburbs tend to be a mixture of wealthy enclaves, blight, and pockets of self-reliant communitarian living. People try

to live close to where they work. Cycling has enjoyed steady growth, as have shared transit options like community vanpools and ridesharing.

## **How is the retail industry structured?**

Supply chains have become shorter as transportation has become more expensive and manufacturing has been reshored. Global trade is vulnerable to climate and security shocks. A major growth area has seen businesses licensing designs to be produced locally. Large companies have shifted their focus to R&D, innovation, and design—with manufacturing and distribution often taking place on a local level. Local production centers often combine 3-D printed new parts with the refurbishment of used products and reuse of materials (such as expensive metals).

As industries move manufacturing back to the United States, companies are finding myriad advantages in tighter supply chains. Keeping manufacturing close to R&D has stimulated innovation, and local production has cut transportation costs and made business more resilient in the face of mounting climate-driven disruptions.

## **What does the retail environment look like?**

Many stores now include rental, repair, and training centers. They also often provide places for customers to sell used products and serve as product takeback hubs. Consignment stores have become popular. People frequently go to stores to learn how to use their products or to meet with others who have shared interests. Stores also often rent equipment, such as canning equipment and dehydrators, to help consumers stretch their dollars. Given the do-it-yourself focus, store employees need to be able to provide expertise and guidance, and often require more training than they did in the past. Given the high cost of electricity, stores tend to be smaller and more localized—and giant shopping malls are a distant memory.

## **What do people think about business?**

The consumer price hikes that started in the late 2010s sowed distrust in corporations, which could no longer guarantee affordable products, and consumers are still cautious about relying too much on business to meet their needs. Global companies have to work hard to be seen as trusted members of the local community.



Some have managed to gain this trust, especially those who have reshored their operations and created local jobs. However, citizens and communities have seen the benefits of taking care of their own needs, and increasingly favor self-reliance and community-based solutions. Individuals, businesses, and municipalities have all embraced the mantra of resilience.

## What are consumers like?

Most Americans live more modestly and rely more on thrift, sharing, and making to save money. Consumers have turned away from brands—mostly because of cost constraints, but also because individuals want more control over and involvement in production. Many people participate in a grassroots form of the circular economy—trading spare parts and engaging in home-based recycling of valuable ‘waste’ materials—and are highly aware of resource constraints.

The economic shift has been a difficult one, and people are wary of speculation and debt. As a result of the significant increase in the cost of living, people have become reluctant about relying on businesses to provide them with their necessities. *Freedom* has become identified with self-reliance and a lack of dependence on corporations. Local libraries of things—where members can borrow infrequently used high-ticket items—are

common. A new Debt Free movement has millions of followers who have managed to avoid or pay off all their consumer debt, burning their credit cards as a symbol of liberation. A small elite of highly affluent consumers can still be found in major cities, but the gap between them and the mainstream has widened.

People enjoy their free time by attending cultural and sporting events featuring local performers and athletes. A soccer craze has developed, and the United States won the World Cup in 2022.

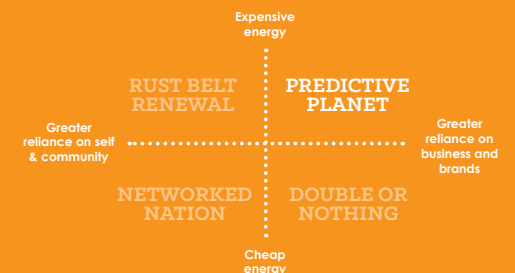
## What are people buying?

Consumers want products that last a long time and are repairable, upgradeable, and recyclable. Products are also increasingly modular, in order to facilitate their upgrading and disassembly so that any valuable materials they contain can be reused. Although this trend started with high-ticket items like appliances and cars, it has become common in a wide range of products. Training, repairs, rentals, and other auxiliary services are also big business. The wealthy aspire to buy high-tech electronics from China, which is creating products like virtual reality games that are unaffordable for most U.S. consumers.

# PREDICTIVE PLANET

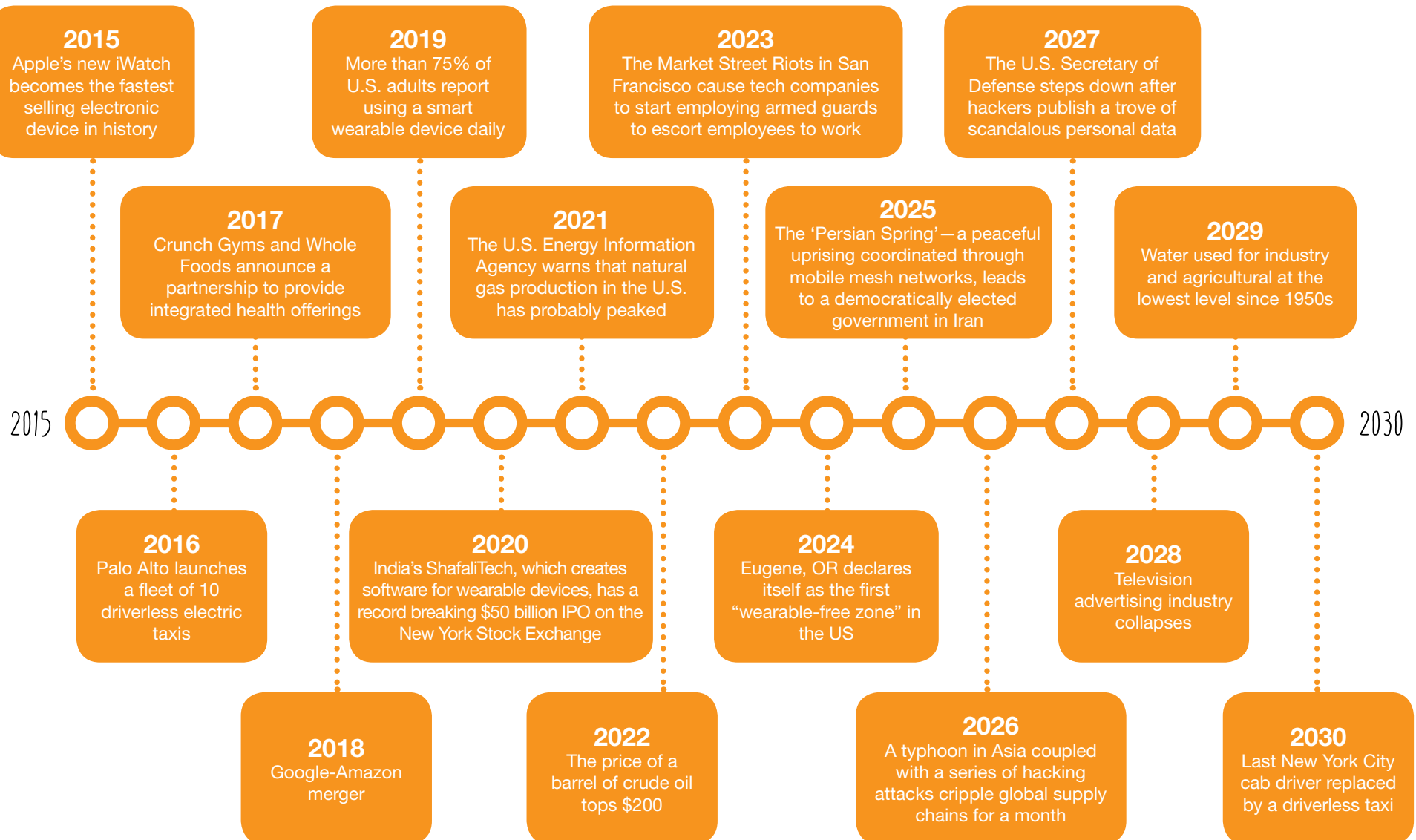
2

Technology enables companies to fulfill consumer desires and offset high energy and resource cost, but is also contributing to the displacement of fulfill workers.



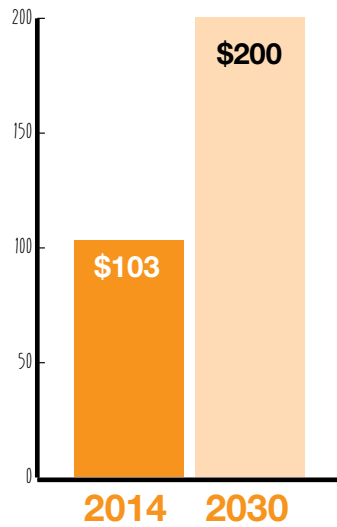
- 1 **The global context** sees the US, China, and India racing to innovate digital technology and improve efficiency, with business taking the lead and transparency becoming widespread.
- 2 **Energy** is expensive, as demand surges, oil and gas production level off, and uneven policies slow the transition to renewables.
- 3 **Resource challenges** are being addressed through materials science, tightly coordinated supply chains, and much better data to predict consumer demand.
- 4 **Key technologies** include wearable devices that analyze all aspects of a user's experience and emotional state, enabling extremely customized recommendations for products and services.
- 5 **The U.S. economy** is performing well in industries related to technology, while those people in more traditional jobs must compete to stay relevant.
- 6 **Key regulatory** issues include those related to data security, privacy, and trust, as insights gleaned from consumer data become more powerful and revealing.
- 7 **Cities and mobility** are high tech, with most people aspiring to the services made possible by living in a 'smart city' and driverless electric cars becoming more common.
- 8 **The retail industry** is characterized by massive integration, as diverse companies share rich consumer data to provide seamless, customized solutions.
- 9 **The retail environment** has become largely invisible, as 'shopping' can take place with the blink of an eye and "stores" transform into lifestyle spaces.
- 10 **People's attitudes about business** are ambivalent, as they value the ever more customized solutions available but worry that business may be too powerful.
- 11 **Consumers** are highly reliant on 'megabrands' to anticipate their needs and offer integrated solutions, and have high expectations for service and security.
- 12 **Products and services** are less often sold as discrete entities and often come bundled as part of a solution to meet a particular need, like health or education.

## The journey to this world

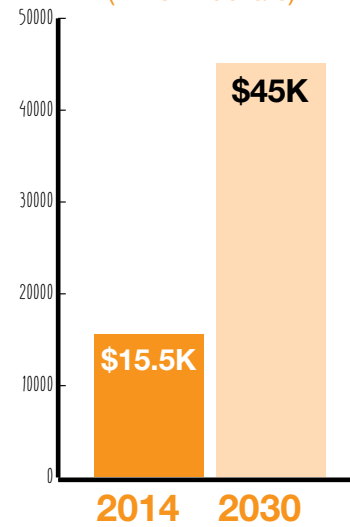


\*these indicators are illustrative and not the result of a quantitative modeling process

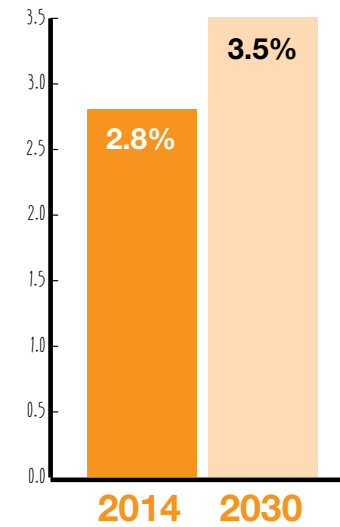
**Price of barrel of oil**  
(in 2014 dollars)



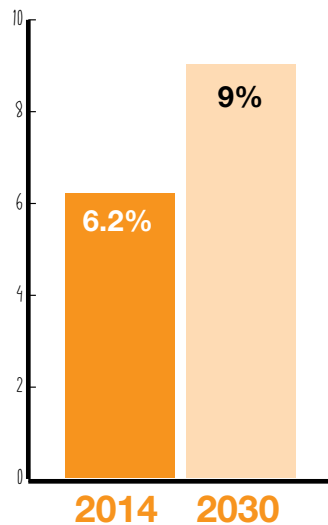
**Average U.S. household credit card debt**  
(in 2014 dollars)



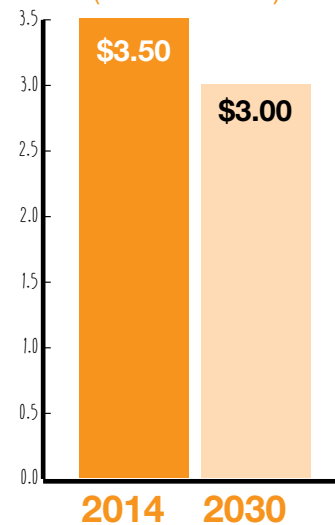
**Average household spend on clothing**



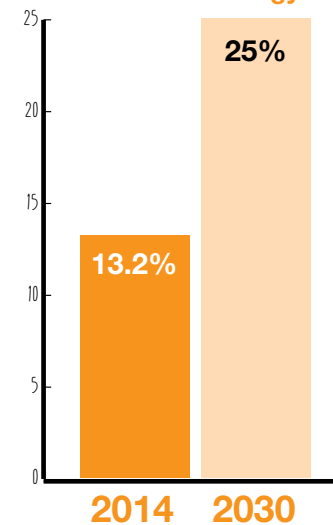
**Unemployment rate**



**Average price for a gallon of milk**  
(in 2014 dollars)



**Percentage of electricity from renewable energy**



## Overview:

Technological innovations drive this world. One of the most important has been the Lifeo, a wearable device that records everything a user sees and hears, combines that with physiological data, and sends this ‘lifestream’ into the cloud for storage and analysis. By correlating a user’s emotional state with people, objects, and places, lifestream analytics can be used to offer consumers highly customized products and services—from meals to clothing to guidance on social interactions. Energy and resources are expensive, but the United States is transitioning toward renewable energy and a less materially intensive economy. There is deep anxiety about the loss of privacy and authenticity in human interaction, and a high degree of income inequality is causing social and political tension.

## What is the global context?

The major powers in this world (the United States, China, and India) are all racing to innovate digital technologies and transition to renewable energy. Power has shifted from governments to business, and those countries with major technology companies have done the best. Technological leapfrogging has driven substantial growth in Africa, and increased transparency has sparked political reform in a number of oppressive regimes. The high cost of energy and resources is forcing businesses to become more efficient, which they’re doing through

integration and unprecedented insight into consumer behavior enabled by devices, such as the Lifeo.

## How expensive is energy, and what is the energy mix like?

The global production of oil and natural gas has leveled off. Meanwhile, increased demand for electricity in the United States, coupled with inconsistent state regulations on emissions, has driven up the cost of electricity. Although renewable energy is being brought online quickly, high demand and confusing policies have made the transition slow and expensive. Higher energy costs have had both direct and indirect impacts on business. The cost of aluminum production, for example, has increased dramatically, as have the costs of logistics and shipping. The most successful companies are those that have transitioned to renewable energy and use information technology to achieve radical resource efficiency.

## How are resources affecting the big picture?

Energy, water, and many raw materials have become more expensive. However, improvements in material technology and efficiency, along with algorithms to predict the flow of materials through the value network,



have helped prevent onerous price increases on most consumer products. Large companies are at an advantage as they have the budget to invest in materials R&D and insights into consumers on a massive scale. Improvements in supply chain coordination have taken the concept of “just in time” to a new level. It all works quite well—except when it fails catastrophically. With so little slack and so much global integration, failures in the system can cause widespread disruption.

## **What are some of the key technologies in this world?**

The constant accumulation and analysis of vast amounts of consumer data really took off with the widespread adoption of the Lifestream. Most people have opted to share their lifestream data with companies as it allows the companies to powerfully anticipate individuals’ needs and desires and hypercustomize their products and services. Indeed, the predictive power of lifestream analytics has become so reliable that little money is wasted on advertising or unsold merchandise; the traditional advertising industry has collapsed.

There is a cost to these technologies, however. Serious breaches of privacy, exposing highly sensitive health, financial, relationship, and other personal information, have become common. Privacy is largely a thing of the past, and the use of anticipatory detention against

dissidents in China has raised serious human rights concerns. Conversational product placement and corporate-sponsored endorsements are creeping into ordinary social interactions, causing widespread anxiety about a loss of authenticity in human relations. In response, a Switch Off movement has gained millions of followers around the world, and dozens of small cities in the Pacific Northwest have declared themselves “wearable-free zones.” Privacy management services for the wealthy have become big business.

## **How is the U.S. economy doing?**

Many middle-class jobs have been made redundant by technology and automation. The areas of the economy that are thriving are those in technology, the biosciences, and creative fields, all of which tend to be located in cities. Millennials have adapted well to these new roles, but older workers in traditional jobs and industries have struggled. The result has been an increasing bifurcation of the American labor force, with an erosion of the middle class. While the wealthy enjoy large disposable incomes, most other segments of consumers are struggling financially. Many people are taking on high levels of debt to finance additional education to retool themselves for the data economy. For some people, this tactic pays off handsomely, but many find themselves mired in debt. Agriculture is highly automated, and employment opportunities in rural areas are particularly scarce.

## **What are some of the key regulatory issues in this world?**

Data security, trust, and privacy issues are major battlegrounds for regulation as data breaches have become much more serious in their consequences. Collaboration among diverse companies to provide integrated solutions to consumers is also contentious, with critics charging that they result in anticompetitive corporate practices. Regulation in these areas is lax, partly because of the rapid pace of change and partly from a fear of stifling innovation. Rules are more stringent in the European Union, something that many people see as partly to blame for Europe's ongoing economic stagnation. Most U.S. states have enacted some limits on GHG emissions and water consumption, driven by large businesses that sought a framework for collective action on these issues that wouldn't disadvantage those who took action. However, the regulations vary widely from state to state.

## **Where do people live, and how do they get around?**

The smart city is a major draw for people, as the level of customized products and services makes life in this context much richer; plus, many of these services are unavailable outside of the city. Corporations have

taken an increasingly active role in urban planning. In particular, companies have brokered deals to build, own, and operate 'smart' infrastructure in major cities. However, social tensions are common at the edges of neighborhoods and cities, where the distinction between the haves and have nots has become most obvious. Rural dwellers are increasingly underserved when it comes to new products, services, and infrastructure.

Google and Amazon announced the largest merger in U.S. history, to "build the analytics and logistics infrastructure for the new economy." Googlezon, as it's widely known, has set out to disrupt transportation, retail, and energy by deploying a fleet of self-driving electric Teslas in cities to provide a range of services. These cars function primarily as delivery vehicles, bringing packages from local manufacturing and distribution centers to consumers, and most items are delivered in less than two hours. The cars also function as automated taxis for individuals. Finally, they serve as a vehicle-to-grid electricity storage system, providing load balancing for the emerging renewables-powered grid.

## **How is the retail industry structured?**

Integration is the order of the day as companies from different sectors partner to share massive amounts

of consumer data in order to create customized and seamless solutions. For example, Kaiser Permanente, Whole Foods, and Crunch Gyms launched the EverWell megabrand to offer “wellness as a service” in the form of highly customized nutritional and exercise ‘solutions’ based on genomic and lifestream data. Retail is no longer seen as a distinct industry given how seamlessly embedded it has become in most activities. It has become nearly impossible to go to a movie, visit a hospital, or even talk to a friend without having a retail experience of some sort, as it has been woven into the fabric of every experience.

New distributed manufacturing technologies make it possible to produce many items on demand close to the consumer. Rail has largely displaced long-haul trucking, both because it is more easily retrofitted to be powered by renewable energy and because long-distance shipping is used primarily for raw materials rather than finished goods.

## **What does the retail environment look like?**

Retail has become so pervasive that it is largely invisible and almost unconscious, and traditional shopping is becoming an archaic concept. Most people would rather put themselves in the care of a few megabrands and allow them to provide just the right offerings, rather

than having to go out and search for items a la carte. However, given the commitment entailed in partnering with megabrands, there is deep anxiety about finding the right ones.

Stores rarely keep stock on hand anymore but instead function as lifestyle spaces where megabrands deepen their relationship with consumers and collect additional lifestream data. The use of digital beacons, biometrics, and sensor technologies mean that stores can now identify every customer inside them. Store employees are focused entirely on providing (and gathering) useful information and highly individualized customer service. SmartChic, for example, operates a network of spaces that young women visit to feel clothing material samples, attend fashion shows, listen to live music, or simply hang out with their friends in the VIP lounge.

## **What do people think about business?**

Megabrands wield an enormous amount of power and have unprecedented insight into and access to consumers’ personal lives. Most people depend on them but are also deeply concerned about privacy and security. Those businesses that convince consumers of their trustworthiness and intelligence can enjoy a highly valuable, long-lasting, multidimensional relationship with them.

The proliferation of publicly available data and the need

for trust has also driven business to become more transparent. It is now standard for all material data from the supply chain to be shared publicly, and NGOs and government agencies continuously analyze it to rate companies and products and enforce labor and environmental laws. Sweatshops have largely become a thing of the past, both because of greater transparency and because most garment and household product manufacturing now takes place within the United States.

## **What are consumers like?**

Consumers develop long-lasting relationships with megabrands, usually starting as children. Many of these megabrands are represented by personas and avatars, and consumers develop close imaginary relationships with them, as many consumers do with celebrities. As individuals grow and develop, their megabrands evolve symbiotically with them, using their lifestream data to help them navigate choices that determine which cultural subgroup they belong to.

People expect perfect service, seamless interactions, total security, and extreme customization. They may get angry and disoriented when algorithms fail to deliver or when they deliver offerings that are too expensive or don't match a consumer's desires. Given how much potential there is for abuse of consumer data, trust

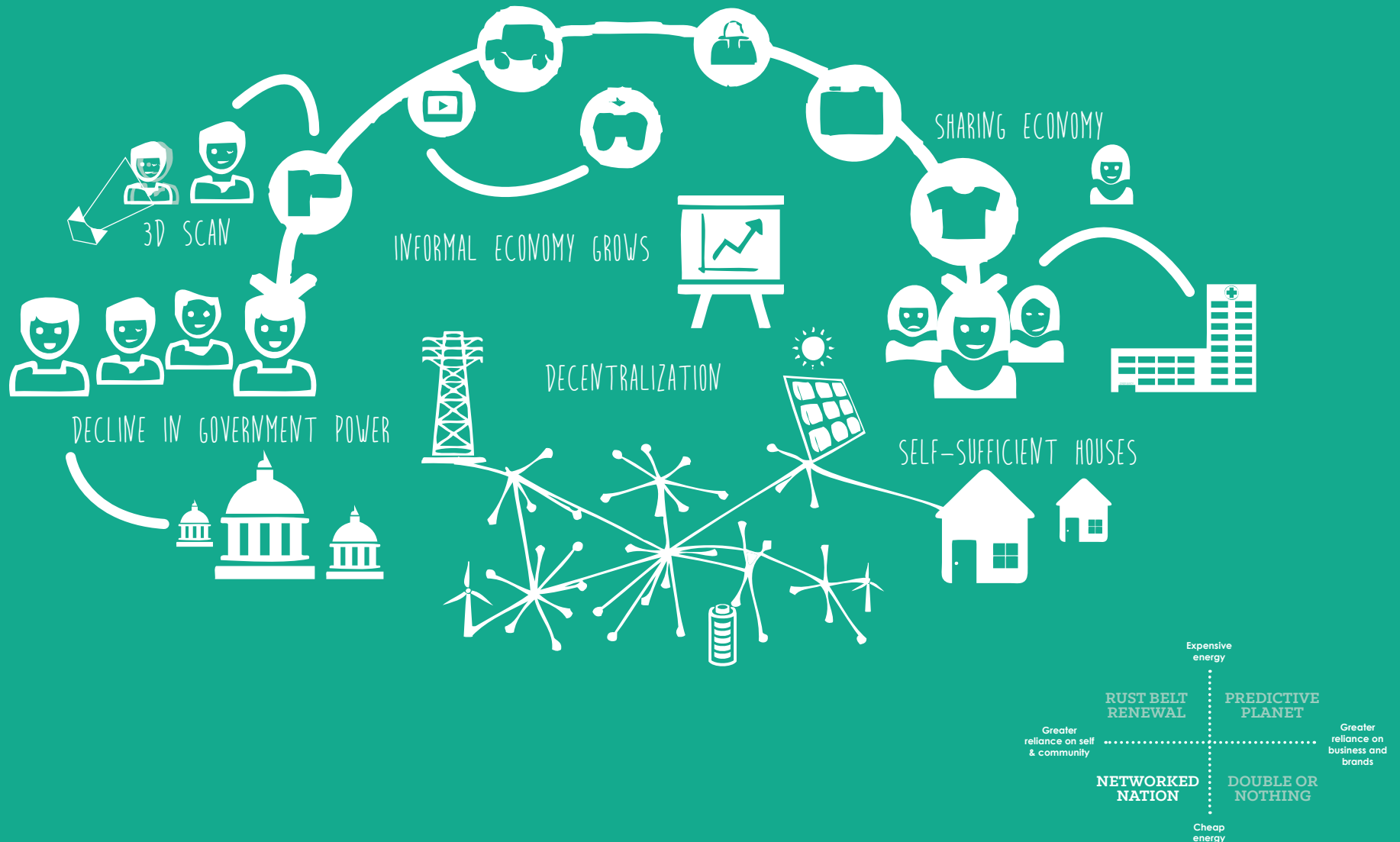
is of paramount importance. Trust auditing is a major business, and new regulations have arisen to promote trustworthiness. Most consumers subscribe to trust auditing services that use automated trustbots to continually scan an individual's interactions for security breaches.

## **What are people buying?**

Consumers no longer focus much on selecting discrete products and services but rely on the megabrands to choose for them. Integration and customization are at the heart of these solutions offerings. Megabrands meet consumers where they are and offer equivalents to fulfill the same needs—e.g., wellness customers who don't eat enough vegetables will find that their treadmill workout is longer to compensate. Although some people, like members of the Switch Off movement, represent a countermovement that stresses authenticity; they find it difficult to gain traction in part because it has become expensive to produce and market goods and services in a more traditional way.

# NETWORKED NATION

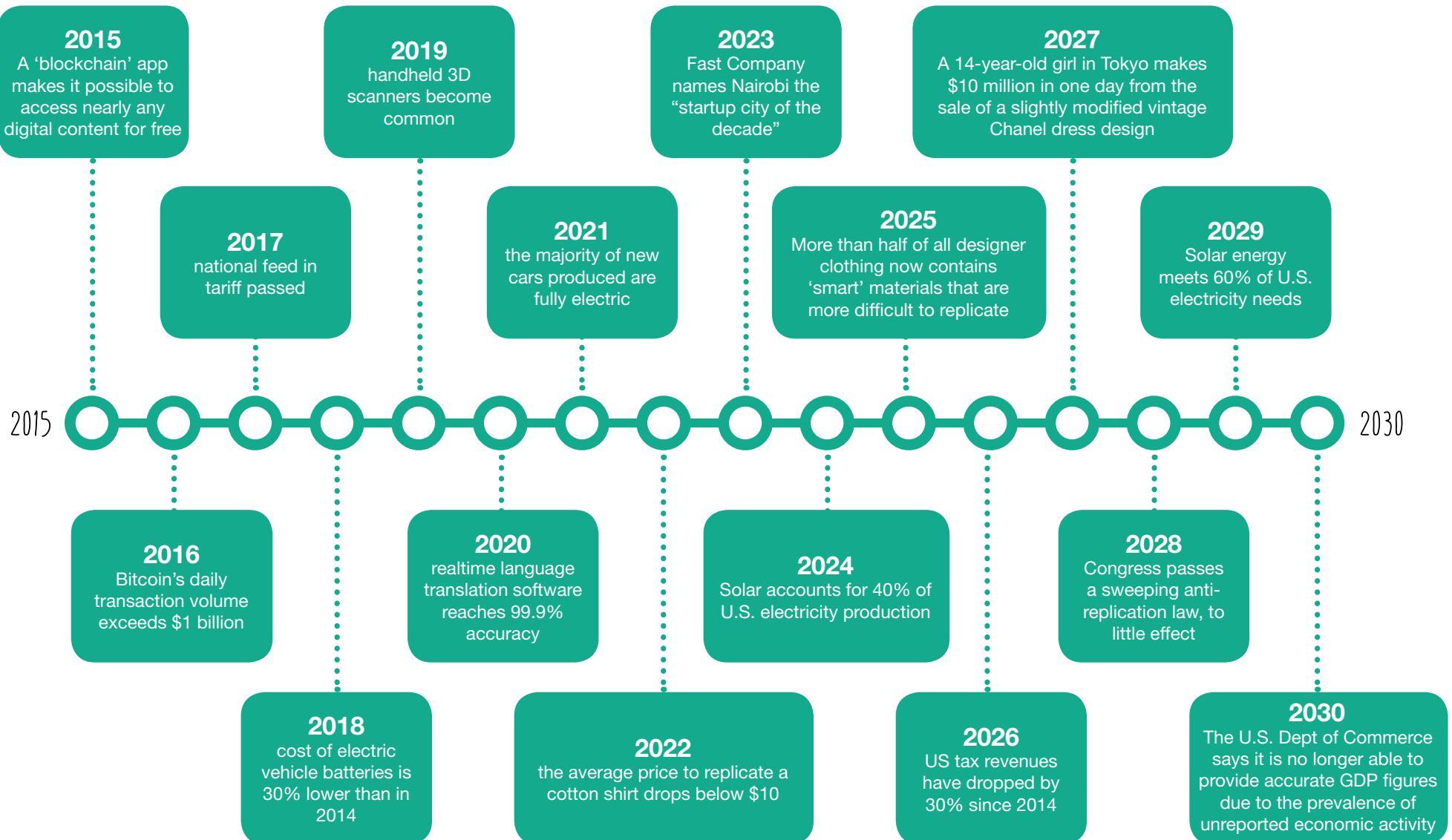
Peer-to-peer sharing and radical decentralization have created massive disruption for retail and the economy as a whole.



- 1 **The global context** has seen a significant decline in government power as disruptive new technologies have made it ever easier for citizens to tap into self-organized global networks with other like-minded individuals to satisfy their needs.
- 2 **Energy** is less expensive due to the growth of distributed solar power, catalyzed by federal policy and improved storage technology
- 3 **Resource challenges** are being exacerbated by the explosion of distributed manufacturing, which has made it easy for consumers to produce their own products cheaply.
- 4 **Key technologies** include software applications enabling secure, anonymous peer-to-peer transactions with no need for centralized coordination or verification.
- 5 **The U.S. economy** is struggling when evaluated using traditional metrics like gross domestic product (GDP); however, a huge amount of unreported, untaxed economic activity is taking place off the books.
- 6 **Key regulatory issues** entail trying to ensure that the new peer-to-peer economy is held to the same standards as business and contributes to the revenues of the state.
- 7 **Cities and mobility:** People aspire to the freedom of being able to live and operate anywhere, and belonging to global networks has become more important than national or city boundaries.
- 8 **The retail industry** has become profoundly disaggregated. It is now common to outsource every function of a business, from design to manufacturing to sales.
- 9 **The retail environment** has been challenged by the ease with which consumers can scan and replicate many common items. Stores now specialize in limited edition, high-tech, or unique items that are difficult to commoditize, as well as additional services.
- 10 **People's attitudes about business** are skeptical, and consumers prefer to buy from independent producers, which are seen as cheaper, faster, and less controlling.
- 11 **Consumers** are fickle, extremely diverse in their tastes, and frenzied in their attempts to keep up with the latest trends. Fads in physical objects now turn over as quickly as memes do on the internet.
- 12 **Products and services** are quickly pirated and replicated. Businesses compete by either providing things that are difficult to replicate, like experiences or products made from advanced materials, or by providing low-cost commodities.

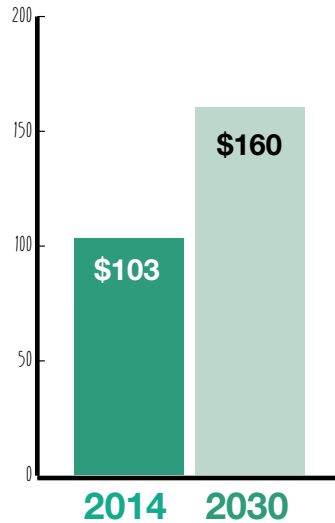


## The journey to this world

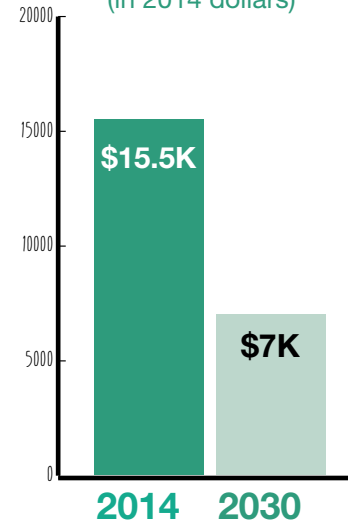


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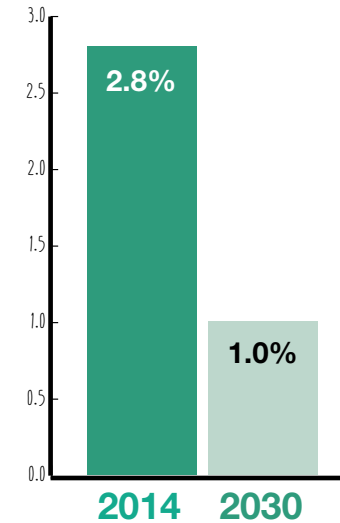
**Price of barrel of oil**  
(in 2014 dollars)



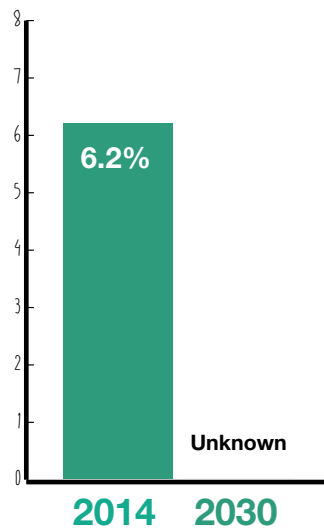
**Average U.S. household credit card debt**  
(in 2014 dollars)



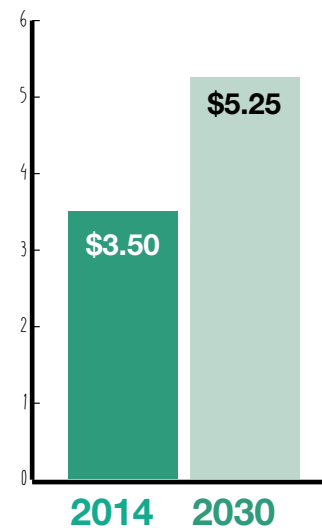
**Average household spend on clothing**



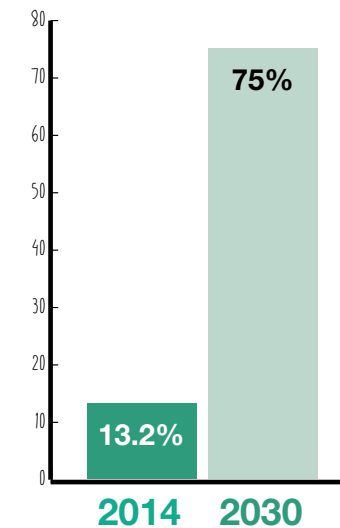
**Unemployment rate**



**Average price for a gallon of milk**  
(in 2014 dollars)



**Percentage of electricity from renewable energy**



## Overview:

In this globalized but highly decentralized world, technology, cheap energy, and a shift in attitudes have cut out the middleman and disrupted numerous industries. Self-organizing networks of individuals coordinate the provision of a wide range of products and services from food to clothing to health care. Many industries have confronted similar challenges to those faced by music and publishing companies during the 2010s and can no longer count on economies of scale or market dominance to ensure profit margins. A great deal of economic activity takes place off the books, often measured in nonmonetary currency. The friction of most transactions has been reduced, and the playing field among economic actors has been leveled. Disaggregation and outsourcing have affected all economic activity.

## What is the global context?

Governments worldwide have seen a significant decline in power, as disruptive new technologies have made it ever easier for citizens to tap into self-organized global networks with other like-minded individuals to satisfy their needs and to escape scrutiny when doing so. People's lives are shaped less and less by the country in which they reside and more by the networks to which they belong. Individual nations have become more heterogeneous internally, with pockets of innovation,

creativity, and entrepreneurship widely distributed around the world. At the same time, the erosion of governmental authority has also created a power vacuum in many areas, leading to the proliferation of local mafias, ungoverned districts, and exploitation.

## How expensive is energy, and what is the energy mix like?

As both solar power generation and battery storage technologies have improved and become cheaper, the cost of electricity has steadily declined in the United States. The adoption of distributed solar experienced a serious boost in 2017 when a group of congressional representatives from the South, where the solar supply is strong, threw their support behind a nationwide feed-in tariff to spur energy independence and entrepreneurial activity. Most residential electricity is now provided by individual or community-scale solar installations, with gas and wind making up much of the remainder. Although petroleum is still being used, the rising cost of gasoline has led to a massive shift to electric vehicles.

## What are some of the key technologies in this world?

In addition to solar and battery technologies, another key development has been the proliferation of software

enabling secure, anonymous peer-to-peer transactions with no need for centralized coordination or verification. Built on the same computer science foundation as Bitcoin, these ‘blockchain’ applications provide the architecture for an entire shadow economy that operates without the need for any centralized authority. One of the first applications was a video-sharing website that debuted in 2015 with a Netflix-like interface but a catalog that included essentially all films and TV shows, without any rights. Since then, blockchain applications have emerged to coordinate everything from voting to stock transactions to contracts.

Also important is 3-D scanning, which has become standard on mobile devices. This tool makes it possible for people to scan objects and then have them precisely, quickly, and cheaply replicated—strongly undercutting the proprietary value of product design. Making a copy of an object is now almost as easy as making a copy of an image. Finally, robust real-time language translation has made global collaboration much easier.

## **How are resources affecting the big picture?**

With the rise of powerful, decentralized manufacturing technologies, the rapid production and disposal of so many products is driving the depletion of resources such as timber. Although a centralized way to manage

this process has not yet emerged, more and more peer-to-peer fabrication centers (‘fabs’) are using recycled materials to keep prices low and conserve materials. Prices have become more sensitive to supply and demand, resulting in the more sustainable use of some resources, such as cotton. Most externalities, however, remain unpriced and many resources have been overexploited.

## **How is the U.S. economy doing?**

The health of the U.S. economy, like that of all economies, has become a matter of fierce debate. A vast number of economic transactions are now conducted in nonmonetary currencies, and traditional metrics like GDP have become nearly meaningless. Many transactions are now informal, microlevel, and untaxed. According to traditional measures, such as GDP, tax revenues, and official employment figures, the United States has been in economic trouble for years. However, an entire shadow economy operating off the books is sustaining millions of Americans comfortably.

Government coffers are in disarray as the volume of untaxed transactions explodes, hastening the decline of the state. Traditional companies have been at an increasing disadvantage as economies of scale no longer hold sway and as they have been compelled to adhere to regulations and taxation that peer-to-peer entrepreneurs

can avoid. One industry after another has been disrupted just as music and print were in the 2000s. Apparel was one of the first, when mobile 3-D cameras made it easy to scan a garment's design and then send it to a fab to be reproduced in the scanner's choice of color, material, and size. Although the unemployment level has gone up, people no longer depend as heavily on traditional employment to make ends meet. However, those who are not tech savvy—including the poor, elderly, and those in rural areas—are suffering.

## **What are some of the key regulatory issues in this world?**

Regulators have been fighting a losing battle to keep up with the rapid pace of change, and informal entrepreneurs have become adept at evading regulation. Governments are trying to constrain developments that have already happened, such as the proliferation of technologies that allow the widespread pirating of products, and businesses complain that they are disadvantaged by regulations that individuals don't follow. Food, chemicals, health, and safety regulations have become a matter of fierce debate as entrepreneurs argue that the products they make are often safer than those created by big companies—a claim hotly contested by the latter. Fears regarding the safety of

peer-produced foods (often unsubstantiated) have prompted occasional scares, but the tangible value of reputation has become so important that most bad actors quickly lose their following.

## **Where do people live, and how do they get around?**

People's lifestyles are inextricably bound to the networks to which they belong, and those networks are most vibrant and dense in cities. Although it is easy to produce and obtain products anywhere, many people meet their needs by participating in informal networks in cities. At the same time, most people desire to be untethered to a single place, and mobility is seen as highly desirable. People aspire to both the freedom of being able to live and operate anywhere, as well as finding unique things and places. Just as studying abroad is still popular among students, it is now desirable for employees as well, and working abroad programs are increasingly common. Informal mobility services, coordinated by mobile apps, are the most popular way of getting around. It is considered the pinnacle of style to be able to live and operate with ease anywhere in the world, and a class of New Nomads, empowered by the ability to tap into nonmonetary networks of value around the globe, has emerged.

## How is the retail industry structured?

Retail, like most industries, has become highly disaggregated. It is now common to outsource every function of a business, from design to manufacturing to communications to sales. Ad hoc global networks of people, rather than large enduring companies, coordinate a great deal of economic activity. Churning out all kinds of products, small-scale local fabs can be found around the world. Many of these are unofficial (i.e., pirated) iterations of products made by others. As a result of this disaggregation, the retail sector has become more volatile and opaque. It is often difficult to determine who first created a product, and brands and products often go viral in a way that escapes the original creator's control.

## What does the retail environment look like?

The practice of showrooming has been taken to an extreme level; it has become a simple matter to take a 3-D scan of an object (provided it is made from standard materials), modify it to suit your tastes, and then have it quickly and cheaply replicated. Stores tend to specialize in limited edition, high-tech, or unique items that are difficult to commoditize. They also compete by offering additional services, such as free tailoring and fashion consultation.

Providing unique experiences has become a key component of successful business, as they are difficult to pirate and consumers are constantly looking for ways to assert their individual identities. Some retailers have reimagined themselves primarily as networking hubs for people who share similar tastes and values. Others have had success running competitions for the best design hacks, managing to recuperate some of the buzz and revenue diverted to peer-to-peer production. Grocery stores seek to be more than just places to buy food, and often provide space for community gardening and host farmer's markets.

## What do people think about business?

Big business is regarded with skepticism. Attempts by traditional businesses to preserve their intellectual property and police against copies and commoditization have engendered a backlash. People generally prefer to buy from independent sources that are usually cheaper, more agile, and seen as less controlling. Some businesses have responded by impersonating peer producers, sometimes hiring well-known independent designers to promote their products. Businesses that are seen as entrepreneurial, creative, and independent can do well. Consumers are rarely loyal to specific businesses and brands, with the exception of those that are unique or cutting edge.



## What are consumers like?

Consumers are fickle and seek intensely curated lifestyles. Tastes are so diverse and specific that segmentation has become nearly impossible. Status comes from belonging to the right networks, owning (or simply using) the right things, and living the right experiences. Most companies find it difficult to adapt to quickly changing consumer tastes.

As products have become easier to replicate, consumers have grown more frenzied in their efforts to differentiate themselves. New fashions may come and go in a matter of days or even hours, as people around the world replicate, mutate, and then discard the latest styles. Viral trends are no longer confined to funny photos and videos online but now include objects in the real world. The website MemeFab has become an up-to-the-minute hub of rapidly iterating crowdsourced designs for everything from shirts to furniture. Haruko, a 14-year-old girl in Tokyo, has earned a global cult following and the equivalent of millions of dollars for her signature modifications to classic Chanel outfits. Although the cost of producing (and copying) everyday products has dropped dramatically, the challenge of keeping up with

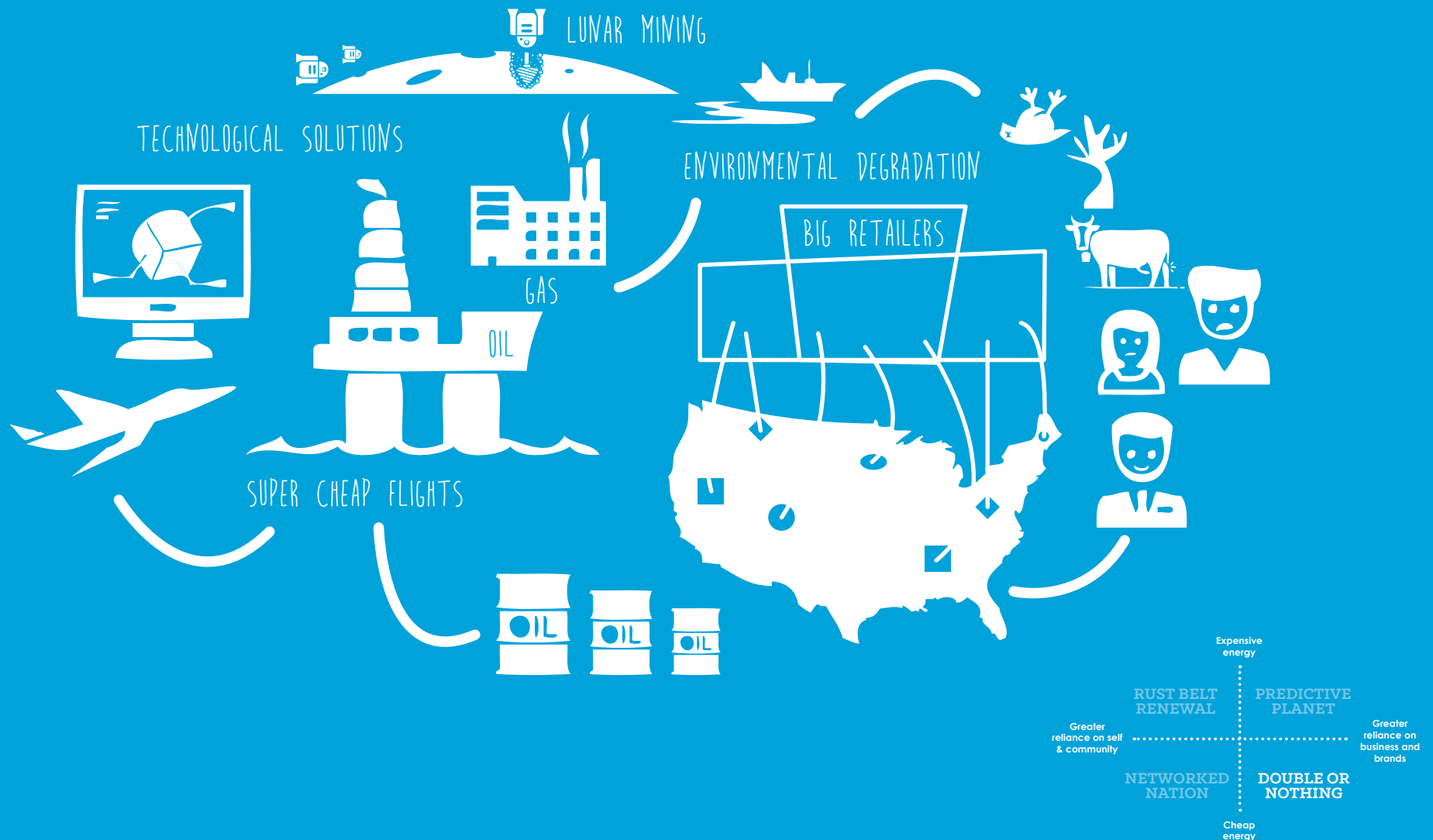
such rapidly changing trends has also driven an increase in sharing and renting for more expensive items like cars, fashion items, and apartments.

## What are people buying?

Consumers have turned to business for products on both the high and low ends, while peer-to-peer production has disrupted the middle. One area where companies are still able to add value is in new or rare materials, and high-performance smart garments still command a high profit margin. R&D budgets have grown as companies look to create products that are difficult to replicate. Experiences have also become a key offering that cannot be commoditized, and companies are increasingly complementing their products with packages of intangible benefits, such as access to a global network of clubs or entry to celebrity events. On the low end, business for low-margin utility goods, such as sugar, detergent, and other everyday items, continues to thrive.

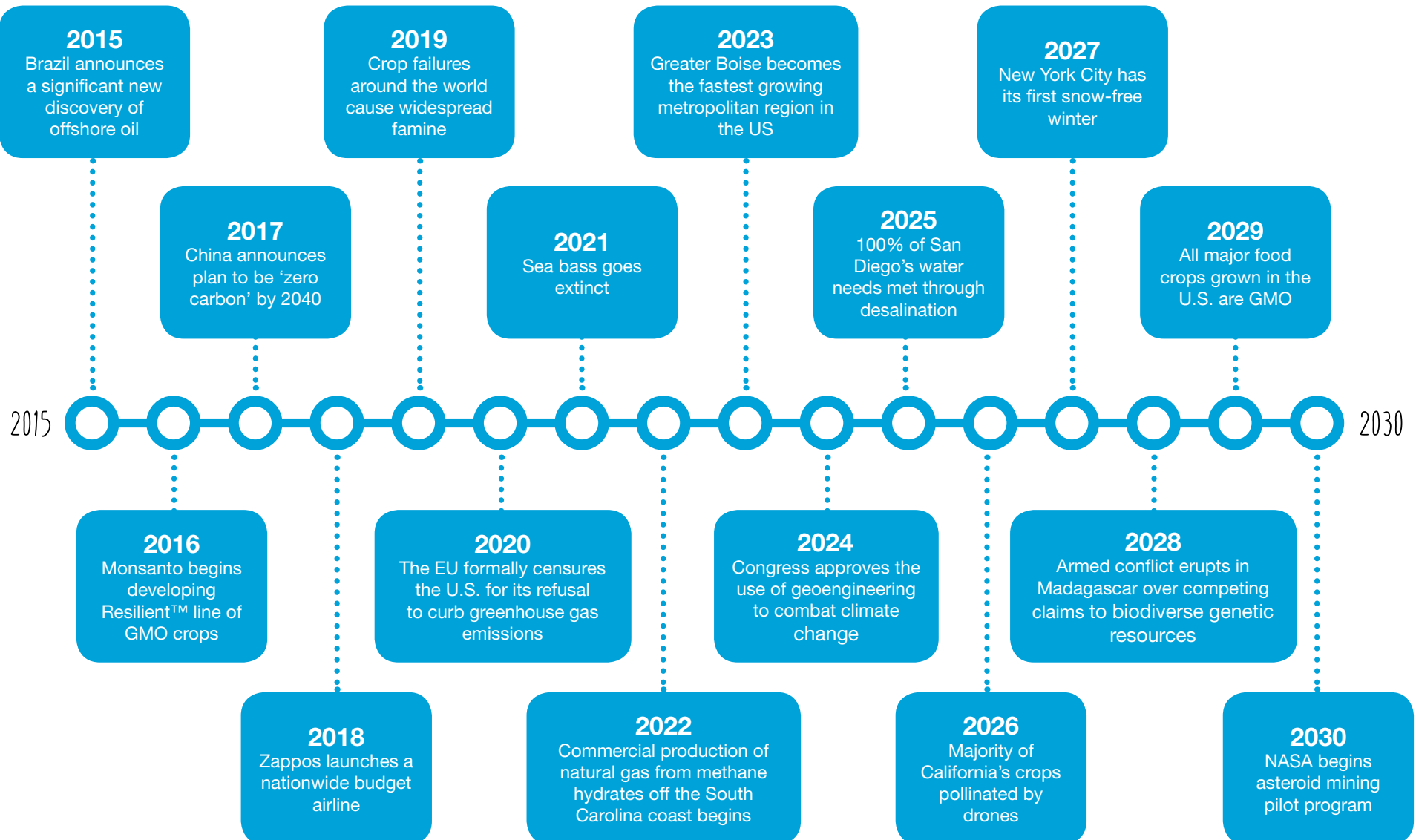
# DOUBLE OR NOTHING

The U.S. is riding the wave of cheap oil boom, but some worry that a crash may be imminent.



- 1 **The global context** is characterized by growing tension between those countries that have fully embraced renewable energy and those that continue to rely primarily on fossil fuels.
- 2 **Energy is cheap** in the United States, due to increased production of shale gas and oil, and the exploitation of unconventional fossil fuel sources like methane hydrates.
- 3 **Resource challenges** are sparking fierce global competition to secure supplies and to develop alternatives. New frontiers for resource extraction are being opened up, from Antarctica to outer space.
- 4 **Key technologies** are ones that address the challenges posed by resource scarcity and climate change, such as water desalinization, geoengineering, and genetic modification.
- 5 **The U.S. economy** has enjoyed a decade of strong economic growth fueled by cheap oil and easy credit; however, some people fear that this growth rate cannot continue.
- 6 **Key regulatory issues** have been developed around food and product safety, synthetic biology, genetic modification, and geoengineering—all of which are considered critical to the U.S. economy.
- 7 **Cities and mobility:** Travel by air and automobile is cheap again, and much of the population growth in the United States has taken place on the outskirts of low-density metropolitan areas in the West.
- 8 **The retail industry** is characterized by long, increasingly complex supply chains as the markets for raw materials have become more uncertain and political instability often disrupts them.
- 9 **The retail environment** often takes the form of small shops and boutiques, although many are chains and franchises owned by big companies.
- 10 **People's attitudes about business:** American consumers have positive feelings about big business, which they see as working in partnership with the government to keep them safe from the many challenges facing the world.
- 11 **Consumers** are anxious about the rapid pace of change and nostalgic for simpler times.
- 12 **Products and services** are most popular when they are designed to seem authentic and natural. Product safety and reliability are also essential.

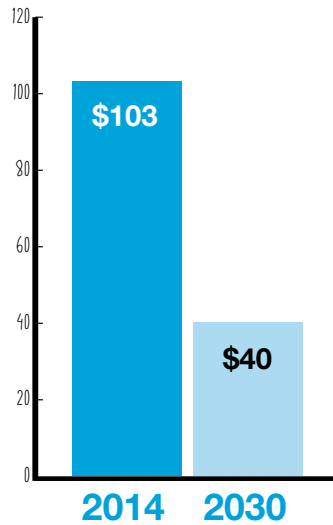
## The journey to this world



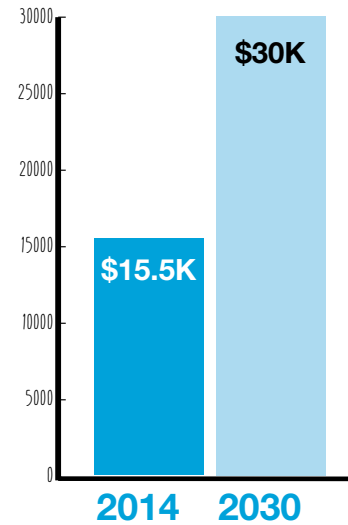
# DOUBLE OR NOTHING

\*these indicators are illustrative and not the result of a quantitative modeling process

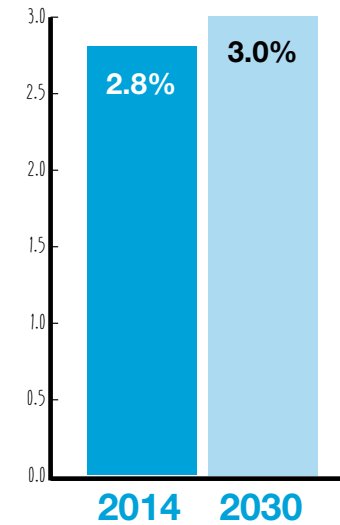
Price of barrel of oil  
(in 2014 dollars)



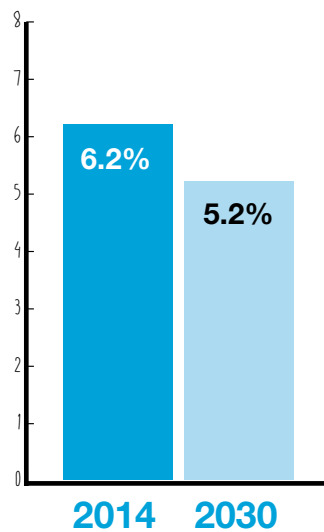
Average U.S. household credit card debt  
(in 2014 dollars)



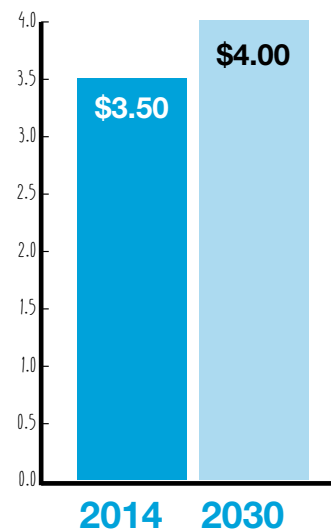
Average household spend on clothing



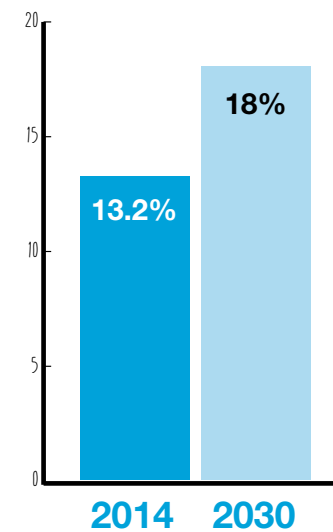
Unemployment rate



Average price for a gallon of milk  
(in 2014 dollars)



Percentage of electricity from renewable energy



## Overview:

Buoyed by cheap energy, the U.S. has enjoyed steady growth while much of the rest of the world struggles. Given the difficult changes taking place outside the US, consumers are nostalgic for a simpler time and seek out products that give them a sense of peace and safety. Technological solutions are increasingly important as a means of addressing resource scarcity and environmental degradation. Although these have managed to prevent any major cataclysms in the US, there is an undercurrent of anxiety about whether America can continue to evade the crises that have befallen other parts of the world.

## What is the global context?

The United States (and to a lesser extent Australia, Brazil, Canada, India, Mexico, Nigeria, and Russia) have all pushed ahead with fossil fuel-driven economic growth, while Europe, China, and others are in the midst of a large-scale transition to renewable energy. Tensions have emerged among these groups, as the impacts of climate change are starting to be felt more acutely. Agricultural disruption, overpopulation, and resource shortages have exacerbated conflict in many regions, particularly Africa, the Middle East, and South Asia. Some countries have unilaterally started to experiment with large-scale geoengineering projects to try to reverse the effects of climate change, but a lack of agreement on whether these projects should be attempted and

what unintended consequences they may cause are ratcheting up tensions.

## How expensive is energy, and what is the energy mix like?

The North American shale boom of the 2010s has continued and expanded. Between American shale gas and oil, deepwater oil from Brazil, methane hydrates from Mexico, and tar sands oil from Canada, the United States is awash in cheap fossil fuel energy. The price of gasoline started to drop in 2018 and is now at prices not seen since the 1990s. The low price of fossil fuels in the United States, along with political gridlock in Congress, has prevented renewable energy from being developed on a significant scale in the country. The European Union and China have embraced renewable energy and are highly critical of the U.S. stance. The United States has become increasingly isolated in international fora, such as the World Trade Organization (WTO).

## How are resources affecting the big picture?

Natural resources and ecosystem services are under intense pressure worldwide, and price and availability have become major issues for some raw materials. Competition both to secure supplies and develop alternatives is fierce. Africa is an increasingly important



source of minerals, timber, and agricultural products for the global market. As in other parts of the world, however, conflict has erupted between states that are attempting to conserve resources like forests and those that are seeking to use these same resources to fuel economic growth.

The struggle over resources has migrated well beyond state conflict to more distant frontiers. Resource extraction is already under way in the Arctic and Antarctica and on the ocean floor—with pilot projects for lunar and asteroid mining in the early stages. Agreements to more sustainably manage some resources, such as palm oil, have been put in place, but others have succumbed to overexploitation. Many major fisheries, for example, have been severely depleted, and wild fish are prohibitively expensive.

Companies are innovating to develop new materials and find substitutes for others. Genetically modified organisms also play a key role in American agriculture and industry, with food crops being designed to adapt to changing conditions. Energy-intensive water desalinization and purification is being deployed on a massive scale in the United States and Middle East.

## **What are some of the key technologies in this world?**

Large-scale technological solutions to address emerging resource shortages and ecosystem damage are becoming more common, and the United States is a leader in this area. One of the most important of these is water desalinization and purification, which has provided a lifeline to cities such as Los Angeles and Phoenix. New agricultural technologies are also being deployed to increase yields and adapt to changing conditions. After widespread, worldwide crop failures in the late 2010s, consumers have largely accepted the development of genetically modified crops. The use of sensors and microdrones to monitor field conditions and pollinate crops has also become widespread. The market for artificial meat has been growing in Asia but has not yet caught on in the United States.

Finally, some countries are starting to experiment with geoengineering to try to mitigate the effects of climate change. In 2025, NASA began a program of injecting sulfate aerosols into the stratosphere to deflect sunlight from the Earth, which they claim is already having a cooling effect. Dubai has been seeding the ocean with iron particles to encourage the growth of carbon-consuming algae. And India is working on a sunlight-deflecting space mirror.

## **How is the U.S. economy doing?**

The U.S. economy has enjoyed a decade of strong economic growth, and according to standard metrics such as GDP, home starts, and employment, is doing well. In 2020, the U.S. president called for “a new century of American peace and prosperity”, and to many Americans, that promise seems within reach. Much of the growth has been driven by government investment in research and development and public-private partnerships in agriculture, biotechnology, and the life sciences. However, more and more dissenting voices are warning that this growth is unsustainable. Yields of shale gas and oil are starting to decline, much of the economic boom has been financed with risky credit, and global pressure for the United States to change its practices is growing. According to one influential commentator’s perspective, the United States can be seen as either an oasis of prosperity within a troubled global economy or a dangerously overleveraged bubble.

## **What are some of the key regulatory issues in this world?**

The U.S. government has worked in close coordination with business to try to safeguard the safety and interests of American consumers. Important regulations have been developed around food and product

safety, synthetic biology, genetic modification, and geoengineering—all of which are considered critical to the U.S. economy. Many of the new regulations developed by the United States, particularly those related to genetic modification and geoengineering, are controversial on an international level, and the United States has found itself at odds with intergovernmental bodies like the WTO and World Bank. Most American consumers feel reassured that the government and businesses are working together to ensure their safety and prosperity, but some citizens feel that industry has undue influence over government policy and that the government is approving new technologies without proper scrutiny.

## **Where do people live, and how do they get around?**

Much of the population growth in the United States has taken place on the outskirts of low-density metropolitan areas in the West, such as Salt Lake City and Boise. These developments seek to recreate the feeling of traditional small-town America, but they depend heavily on fossil fuel energy for both electricity and transportation. The new housing boom has been financed with cheap credit, and some believe that this new American prosperity is an unsustainable bubble and warn that this debt-driven materialist culture cannot last.

Fuel is inexpensive, and new high-efficiency cars have made driving cheap and fun again. The retailer Zappos launched its own airline, Zappos Air, in 2018, which massively increased regional and domestic air travel and has helped drive growth in the West.

## **How is the retail industry structured?**

Supply chains are long and more complex as the markets for raw materials have become increasingly uncertain and political instability often disrupts them. Still critical to manufacturing, low-cost labor has shifted to different regions, particularly Sub-Saharan Africa. Large companies pursue complex hedging strategies to ensure continuity of supply and also depend heavily on economies of scale to bring affordable products to market. Most consumers prefer to know less about the labor and environmental conditions where their products are made. Some are clamoring for greater transparency, however, and companies often find themselves caught in the middle.

## **What does the retail environment look like?**

In the redesigned villages of the suburban West, small shops and boutiques are particularly popular. People like to be able to interact with shopkeepers and value

the sense of community they get from having local neighborhood shops. Many of these are owned by large companies and are operated as chains or franchises—with owners and managers encouraged to customize them to suit local tastes. Although they are designed to feel quaint, these retailers rely on sophisticated information technology to manage inventory, handle logistics, and gather data on consumers. However, this technology is designed to be less obtrusive, with a premium put on human interaction.

## **What do people think about business?**

Consumers have a positive attitude toward business and see it as working hard to provide continued American prosperity even as much of the rest of the world struggles. This got a boost when, in the late 2010s, the use of genetically modified crops seemed to spare American consumers from the worst of the food crisis that took place elsewhere around the globe. Business proved that it could deliver what Americans needed while the rest of the world struggled, and that success engendered a new level of trust with American consumers. Many Americans now consider it their patriotic duty to support American business and will go out of their way to buy American brands. Imported products are treated with skepticism and generally considered inferior.

## **What are consumers like?**

American consumers are anxious about the rapid pace of change and nostalgic for simpler times. They have accepted the use of technology to protect them from challenges like agricultural disruption and water shortages and seek a sense of peace within the relative oasis of America. There is a widespread feeling that the world is changing too fast, and consumers value a sense of continuity and tradition, even if that can only be provided through the use of technology.

## **What are people buying?**

Although technology makes possible much of what they buy, American consumers prefer products that are designed to seem authentic and natural. Cotton has become more expensive as its growing range has diminished, but synthetic textiles that successfully mimic cotton are more popular than obviously artificial fabrics. Tech gadgets such as TVs and phones are often embedded into consoles made from traditional materials. Handcrafted items and locally grown food are highly desirable but tend to be expensive, and mass-produced simulations of many items suffice for many consumers. People also want products that are safe and well made. Aspirational consumers differentiate themselves through their consumption of products made from increasingly rare natural materials.

# PERSONAS

The background of the slide is an abstract composition of overlapping, wavy lines. The colors transition from a deep magenta at the top to a bright yellow in the middle, and then to a warm orange at the bottom. The lines are fluid and organic, creating a sense of movement and depth.





## Personas

### Grace, age 15

- Lives in Austin, TX with parents and two older siblings, ages 17 and 19
- Home-schooled by her father, a freelance journalist; her mother is a pediatrician
- Loves to read and learn, listen to music, and go to concerts with friends
- Hopes to attend an East Coast college and major in biology
- Cares about her appearance; enjoys experimenting with new fashions and visiting second-hand stores





## Lily, age 28

- Works as a fashion entrepreneur and experience consultant in Chicago, IL
- Single with no kids
- Often works long days and picks up take-out dinners on the way home
- She wishes she had more time for exercise but has trouble fitting it in
- Often heads downtown for shopping over the weekend and is always dressed in the latest styles
- Doesn't own a car; takes taxis or the "L" train around the city



## Roger, age 75

- Lives in a large home in Miami, FL, with his wife; no children
- Retired from work in the financial industry
- Has a large group of friends and enjoys hosting dinner parties and cocktail nights
- Often goes for day trips or long weekends on his sailboat
- He's had to slow down lately due to pain from arthritis, but is otherwise in good health



## **Amira, age 53**

- Lives in Pasadena, CA, working in a laboratory on agricultural technology
- She's divorced with two children, ages nine and 13, who split their time between her house and their father's
- Drives a minivan so she can easily transport her kids and their gear to baseball and football practice
- Owns and rents out a duplex nearby and puts away the extra income for retirement
- Every Saturday meets her girlfriends for coffee and a long bike ride





## Michael, age 38

- He and his wife live in the suburbs of Boise, ID, where they run a grocery store that features local specialty foods
- They treat themselves a few times a year to a weekend getaway and nice meal in the city
- No kids yet but planning for one or two
- Michael enjoys spending time outside year round – gardening, running, skiing, and backpacking trips
- He volunteers at a soup kitchen and serves on the board of a local land conservation organization



## **Victor, age 64**

- Lives in Phoenix, AZ in a mid-sized condo
- Recently retired after thirty years with local government, but still earning some income from part-time consulting
- Divorced with two kids who are 18 and 21; both live on their own and attend state college
- He enjoys watching sports and meeting friends for beers at the neighborhood bar
- Leads a mostly sedentary lifestyle and his doctor as warned him of potential heart problems





## **Jasmine, 44**

- Stay-at-home mom in Boston, MA; her husband works for an environmental engineering firm
- Four kids ranging in age from six to 14 years
- Her parents are retired in a small town in New Hampshire, and they get together every few months
- Raising a healthy family is her priority; she uses only natural cleaners, cooks primarily vegetarian meals, and always shops at the organic grocery or farmers market
- She regularly goes to early-morning yoga before her kids wake up for the day



# Recommendations for the Retail Industry

# Recommendations for the retail industry

## 1 Prepare now for a radically different and uncertain future

Companies should prepare now and put strategies in place that will be robust in a variety of scenarios. They should carry out a risk assessment of their business models and supply chains; put together a sustainability roadmap covering the full product/service lifecycle; and ensure they understand the social and environmental context in which they operate.

## 2 Seize the opportunity to be a pioneer

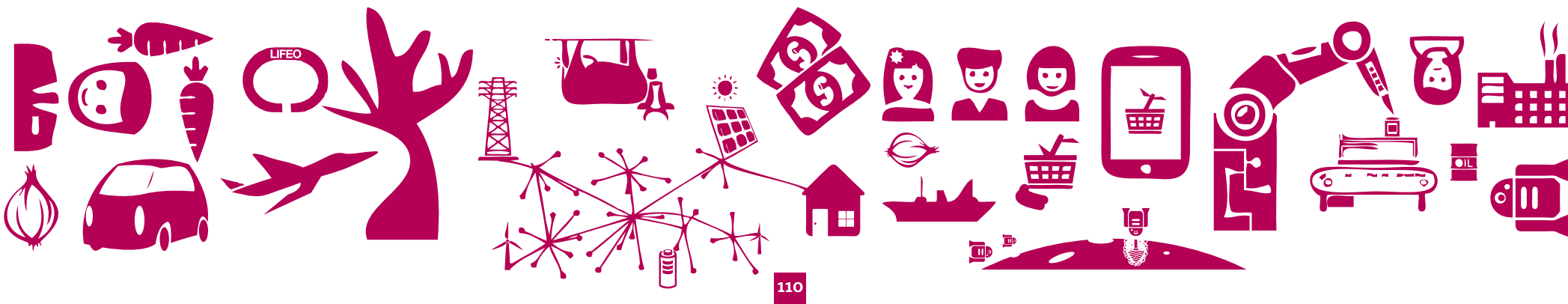
Companies can gain first mover advantage by proactively developing strategies to deal with emerging challenges such as water scarcity. They can also benefit from taking the lead in talking to consumers and investors about the business case for sustainability, working with government, and driving collective industry action.

## 3 Embrace change

In a world that is changing rapidly and unpredictably, success will depend more than ever on being agile and innovative. Companies should invest in design and innovation, and experiment with new business models.

## 4 Develop skills for a new world

Companies should start developing the skills they will need to be successful in the future. The industry will need climate change experts, energy policy specialists, innovators with skills in design for disassembly and closed-loop manufacturing, and many more. Businesses should also explore trends where consumers self-organize to perform many of the functions currently carried about by business.



# About RILA and Forum for the Future

# About RILA

## Retail Industry Leaders Association (RILA)

The Retail Industry Leaders Association (RILA) is the trade association for the world's largest and most innovative retail companies. RILA members include more than 200 retailers, product manufacturers, and service suppliers, which together account for more than \$1.5 trillion in annual sales, millions of American jobs, and more than 100,000 stores, manufacturing facilities, and distribution centers domestically and abroad.

RILA's Retail Sustainability Initiative (RSI) engages retail sustainability executives to share practices, develop new processes, and communicate their efforts to the industry's most crucial stakeholders. RILA uses its annual conference, benchmark studies, collaborative partnerships, and research on behalf of retail sustainability interests to help our members learn and develop their programs.



# About Forum for the Future

## Forum for the Future

Forum for the Future is an independent non-profit with a mission to create a sustainable future, working globally with business, government and other organisations to solve complex sustainability challenges.

We believe organisations and innovators must have one eye on the future if they are to remain successful in a complex and rapidly changing world.

We have a long track record of using trends, visions and scenarios to challenge businesses, governments and other

organizations on their assumptions about the world and to map their route to a sustainable future.

System innovation is at the heart of our strategy. One of our key approaches is creating innovation coalitions, bringing together groups to solve bigger sustainability challenges - including those that work across whole value chains. Another of our approaches is helping pioneering businesses go further, faster.





# retailhorizons

ENVISIONING THE FUTURE OF RETAIL

To find out more visit:

<http://forumforthefuture.org/retailhorizons>

-or-

<http://www.rila.org/future>

## Contact

Adam Siegel – [adam.siegel@rila.org](mailto:adam.siegel@rila.org)

Rodrigo Bautista – [r.bautista@forumforthefuture.org](mailto:r.bautista@forumforthefuture.org)

Jacob Park – [j.park@forumforthefuture.org](mailto:j.park@forumforthefuture.org)



TARGET.



Unilever

