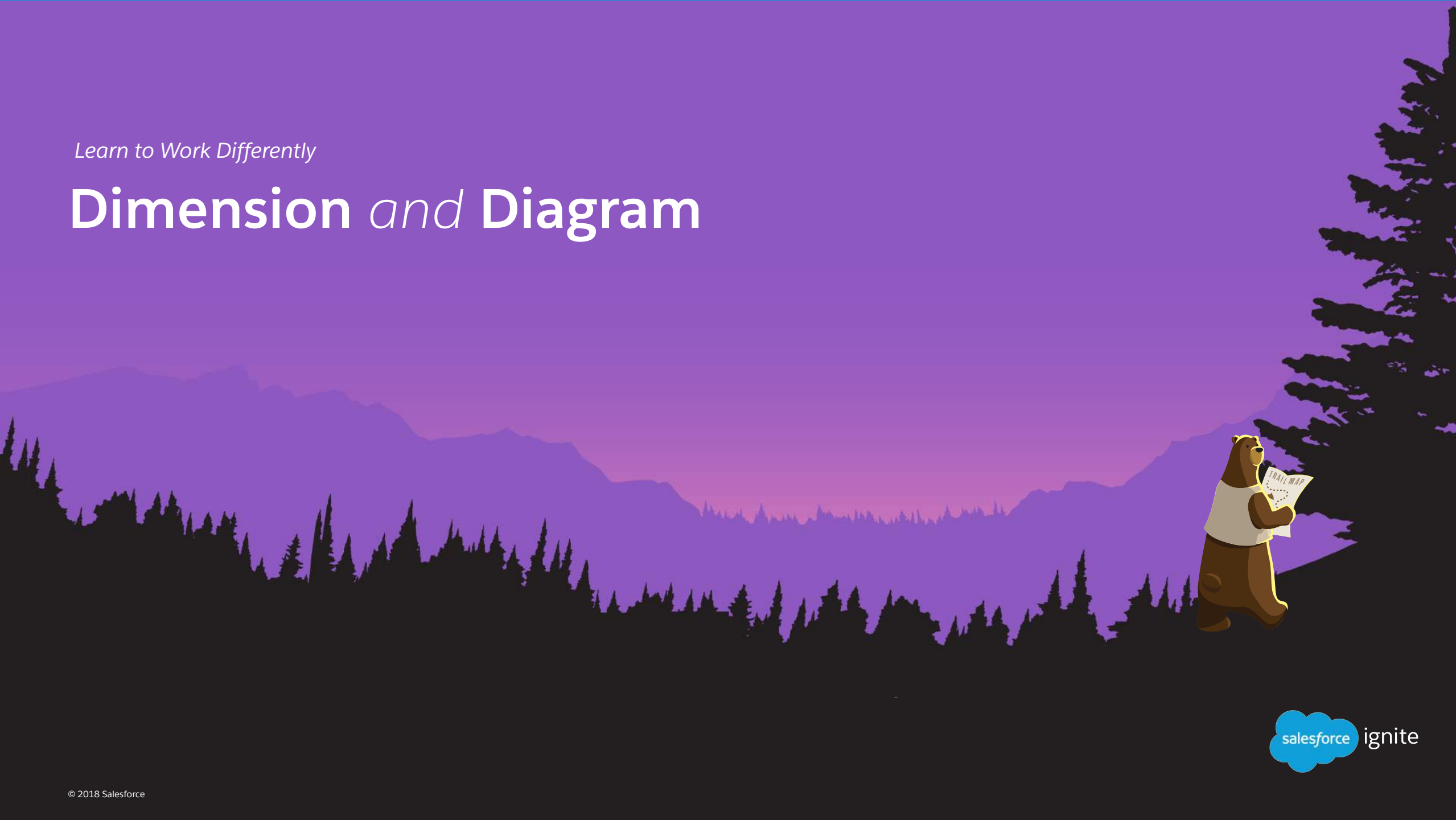
Learn to Work Differently

Dimension *and* Diagram



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4

5 (a) By using the binomial expansion, or otherwise, express $(1+2x)^4$ in the form

$1 + ax + bx^2 + cx^3 + 16x^4$

where a, b and c are integers (4 marks)

$(1+2x)^4$ → ascending powers

0-4 ↑ → power we're expanding to

$\binom{4}{0} = 1 \times (1)^4 \times (2x)^0 = 1 \times 1 \times 1 = 1$ +

$\binom{4}{1} = 4 \times (1)^3 \times (2x)^1 = 4 \times 1 \times 2x = 8x$ +

$\binom{4}{2} = 6 \times (1)^2 \times (2x)^2 = 6 \times 1 \times 4x^2 = 24x^2$ +

$\binom{4}{3} = 4 \times (1)^1 \times (2x)^3 = 4 \times 1 \times 8x^3 = 32x^3$ +

$\binom{4}{4} = 1 \times (1)^0 \times (2x)^4 = 1 \times 1 \times 16x^4 = 16x^4$

These two powers MUST add up to the power you're expanding to (in this case 4)

$1 + 8x + 24x^2 + 32x^3 + 16x^4$

Now we know U_2, we can work out U_3 (as it's the next one along in the sequence)

$U_{n+1} = 6 + \frac{2}{5} U_n$

↓

$U_3 = 6 + \frac{2}{5}(6.4)$ ← from prev ans

$U_3 = 8.56$

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b) for this kind of question replace U_{n+1} or U_n with 'L'

So $U_{n+1} = 6 + \frac{2}{5} U_n$ becomes

$L = 6 + \frac{2}{5} L$

This is our equation

To find L, re-arrange

$L = 10$

PROBLEM TO SOLVE

Develop a solution to improve cold care

CONSIDERATION

Develop a solution to improve cold care

For who?

What type of solution?

Where is existing need?

What's important in a solution?

Resources?

Timing?

Defined production constraints?

EXAMPLE

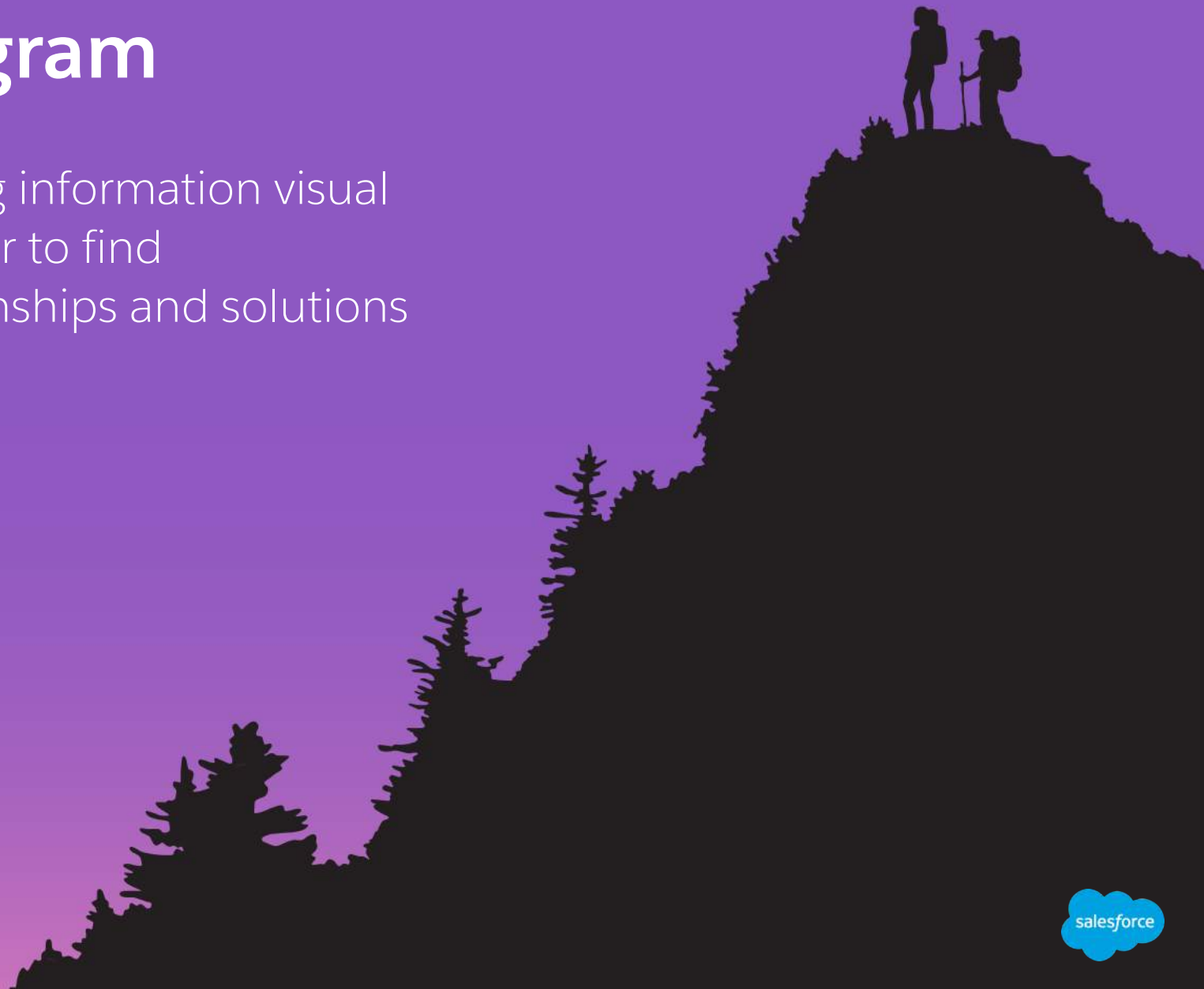
Structuring the problem is part of the work

	SD *something different*	GAC *getting a cold*	HAC *having a cold*	GOAC *getting over a cold*
Masking Symptoms			✓	
Changing Environment				
Flushing				
Comforting				

Dimension *and* **Diagram**

Identifying and exploring important facets of a problem

Making information visual in order to find relationships and solutions



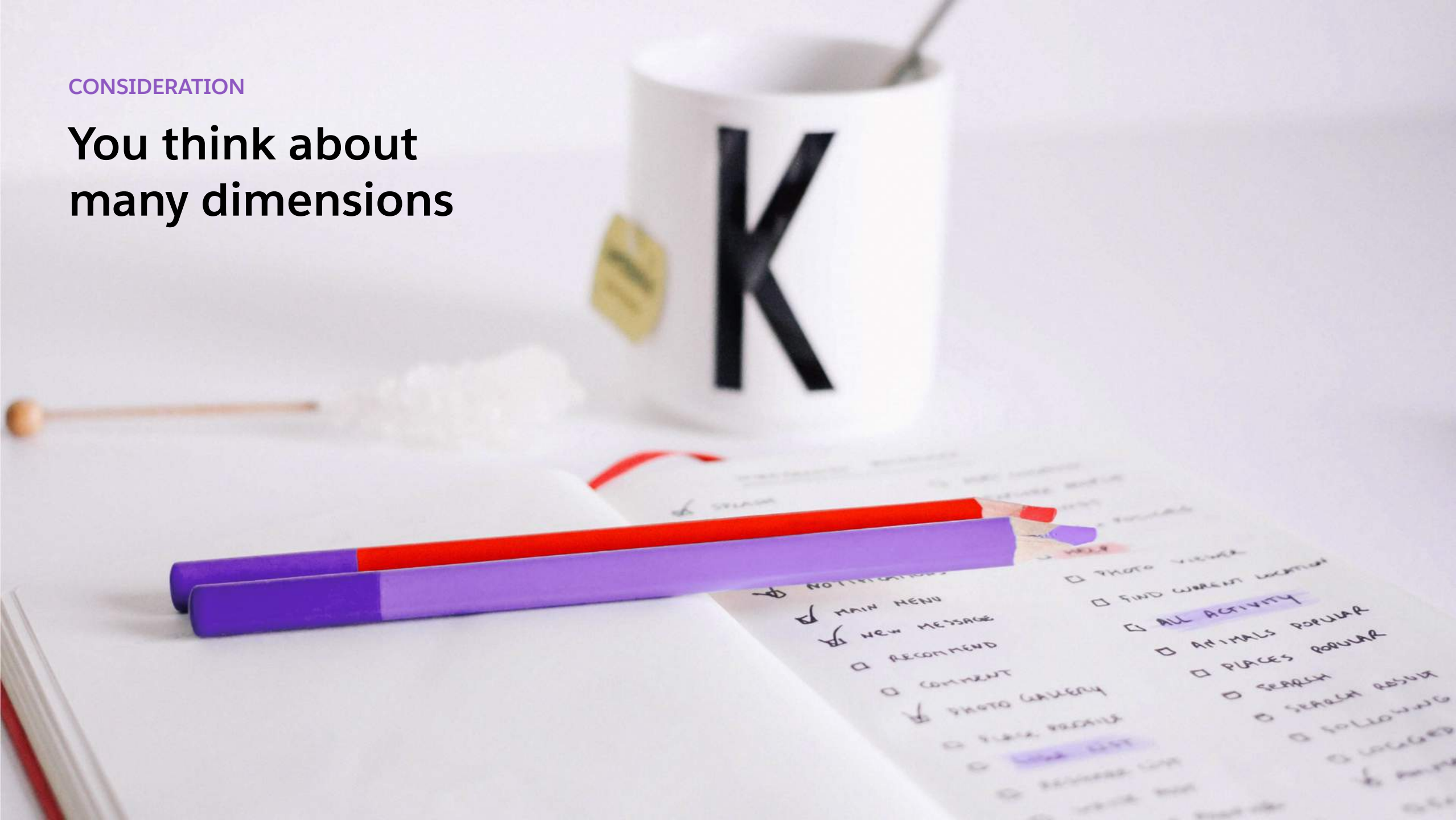
You *already practice* this behavior in other areas of your life.

PROBLEM TO SOLVE

How do you decide on a new apartment or house?

CONSIDERATION

You think about many dimensions



CONSIDERATION

And use visual tools to better understand

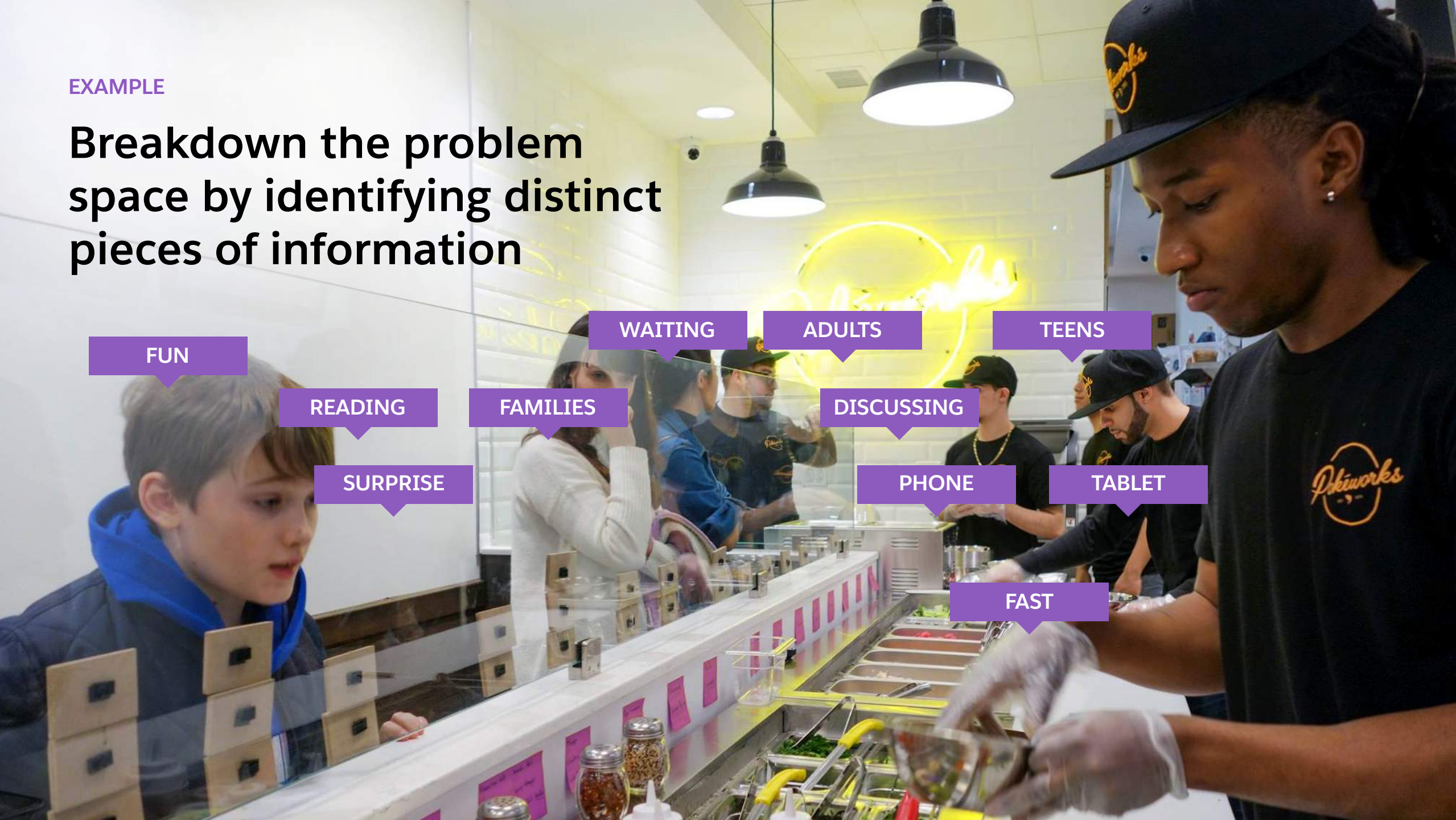
Apply the *same behaviors*
to your innovation challenge

PROBLEM TO SOLVE

Create connections with online shoppers

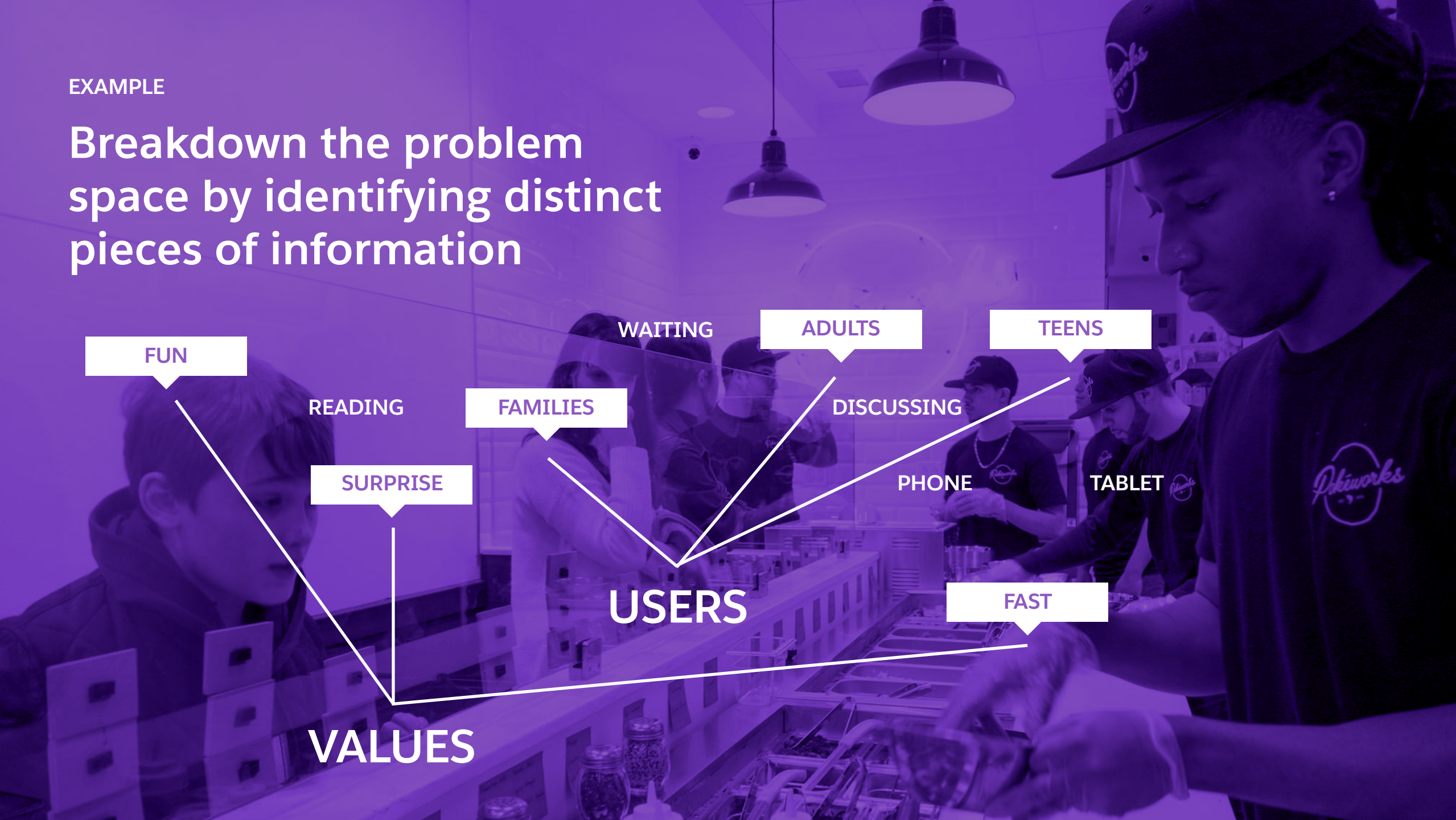
EXAMPLE

Breakdown the problem space by identifying distinct pieces of information



EXAMPLE

Breakdown the problem space by identifying distinct pieces of information



CONSIDERATION

Common dimensions to explore

Triggers

Points in an experience that spark a particular action.

coughing fit, fever, walking by store

Pain Points

Specific issues encountered in accomplishing goals.

difficult to open packaging, sore nose

Value

What people care about.

comfort, speed, cost

Activities

Actions performed during an experience.

blow nose, go to bed early, disinfect

Use Cases

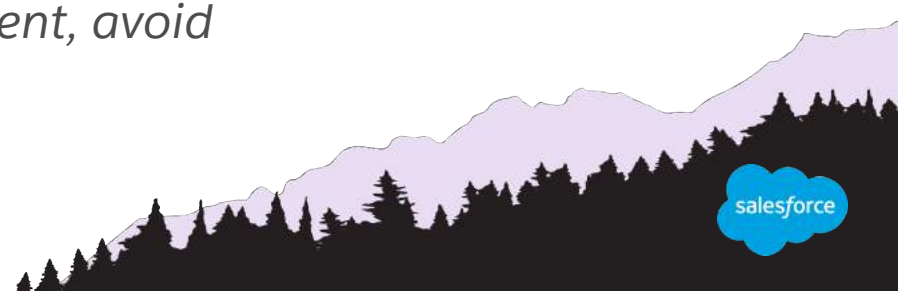
Different types of people and how they use the offering.

fall asleep, stop coughing, child fever

Modes

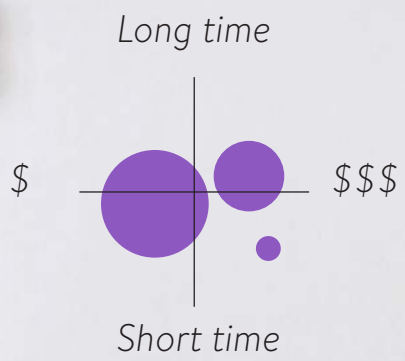
Goal or mindset for behavior.

manage, prevent, avoid

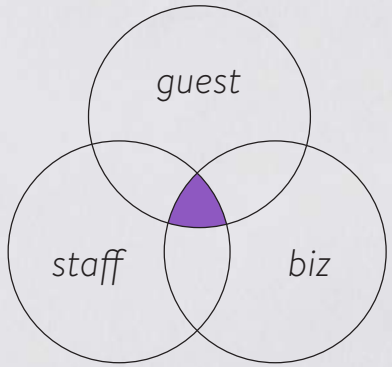


Create simple diagrams as tools to frame and communicate

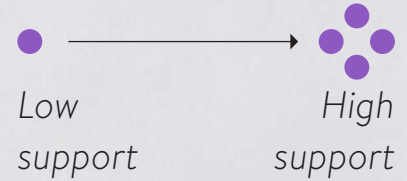
It's not about being perfect, but useful.



2x2



Venn diagram



Spectrum

Thank You