Flight Booking Redesign

Meredith Hitchcock, Kiki Liu, Noah Shafi, Chris Thompson, Pavel Vanegas

What we'll cover

- Problem statement

- Case studies

- Personas

- Our starting point - Google Flight Search

- Our redesign

The Problem

The Problem

Buying airlines tickets is painful!

- Parting with lots of money

- Making lots of choices about the flights while also being bombarded with add-ons from airlines

How can we make for a better experience?

Example: United Airlines

Case Studies

Case Studies: Airlines & Aggregators

- United Airlines (Traditional)

- Ryanair (Budget)

- Southwest ("New style")

- Virgin ("New style")

- Emirates (Luxury)

- Google Flight Search & KAYAK (aggregators)

Questions we asked

- How is the site organized?

- What is the choice architecture?

- What is the site's main goal?

- Who is the site designed for?

- What are the underlying design principles?

Takeaways from the case studies

- Current airline offerings are overwhelmingly unpleasant.

- Complicated, unclear choice architectures.

- Poor segmentation of different personas.

- No attention to demonstrated preferences.

Persona: Greg Walker
The Budget Traveler

Greg: The Budget Traveler

- Recent college graduate, Santa Clara University. Single, lives in small studio apartment.
- Takes about 2-4 flights per year, mostly short-haul routes.

Goals: Cheapest priced flight

Prefers: Low fares and a "no-frills" experience

Flexible on originating airport, on-board amenities and customer service

Attractive Features

- Mix-and-match airlines

- Open-ended travel dates

- Price drop alerts & price history charts

Recommendation: Show the absolute lowest price as first option & have tiered "budget" categories.

Persona: Jim Archer
The Business Traveler

Jim Archer
"I care about efficiency"

Works as a Project Manager at Yahoo!, leading two teams in both US and Poland

Goal: participate in team meeting and sync up with the project progress

Must: date is critical(be in destination on time), short travel time (in flight and ground transportation), able to adjust the travel date again and again after booking or have to book late

Prefer: boarding priority, TSA priority, outlets, wifi, loyalty program
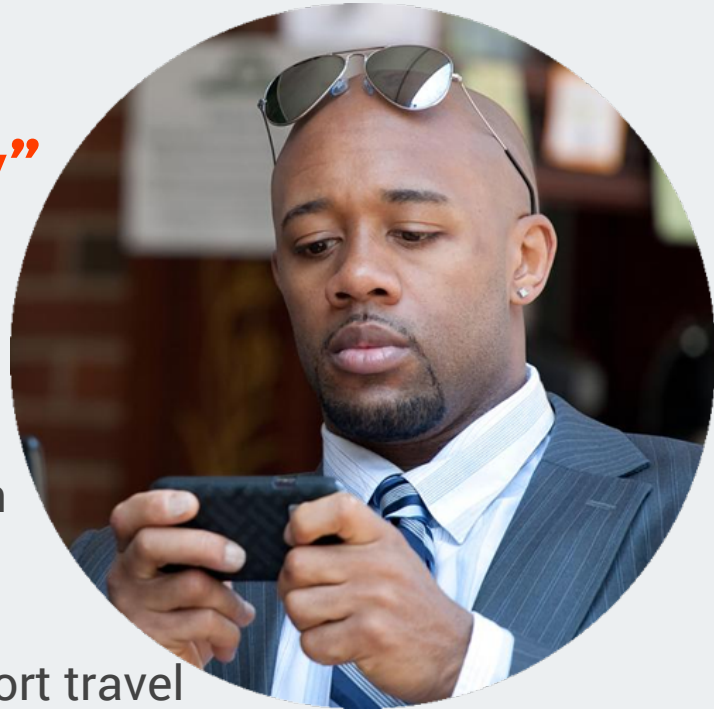
Attractive Features

- List multiple airports

- Show lag and stop duration

- Change/return policy

- Recommendation: meet criteria then no more searching (satisficer)
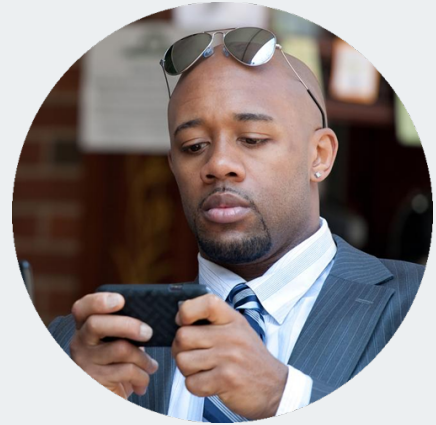
Persona: Hallie Jones
The Explorer

Hallie: The Explorer

- Works as a brand manager for Whole Foods in Austin, TX
- Makes it a point to visit a new country every year
- Travels to New York to visit her parents 2-3 times a year, plus quarterly business travel

Goals: Figure out how it's cheapest to fly

Musts: No more than two stops, short layovers for domestic

Prefers: Front of the plane, morning flights, window seats, leg room

Attractive Features

- Window seats selected by default
- Showing flights for the two airlines where she accumulates points higher in the results

Recommendation: Learn about her **booking habits** for two types of travel, international vacations and domestic

Recommendation: Update the **default options for seat selection** based on her previous preferences

Google Flight Search

Theory Behind Google Design
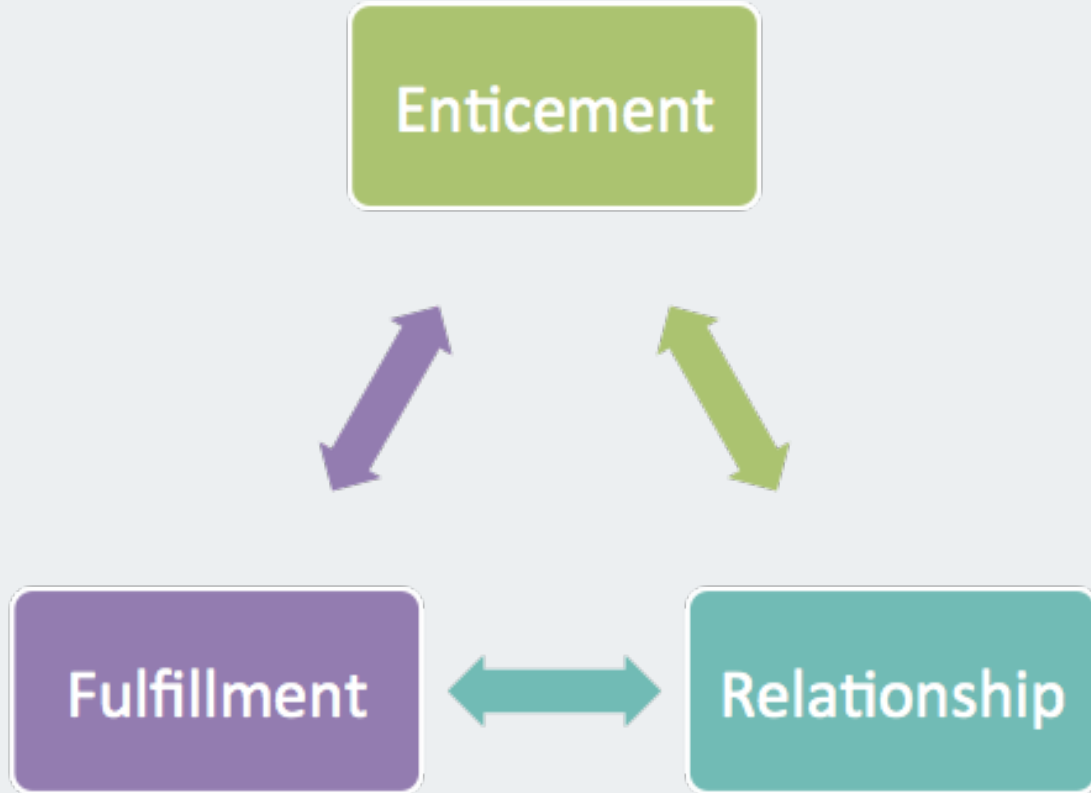
| Round trip | One way | Multi-city | | Economy ⇕ | 1 adult ⇕ |

SFO San Francisco   +

📅 Tue, December 9   ◀ ▶   📅 Sat, December 13   ◀ ▶

Stops ▾   Price ▾   Airline ▾   Times ▾   More ▾

Your previous searches
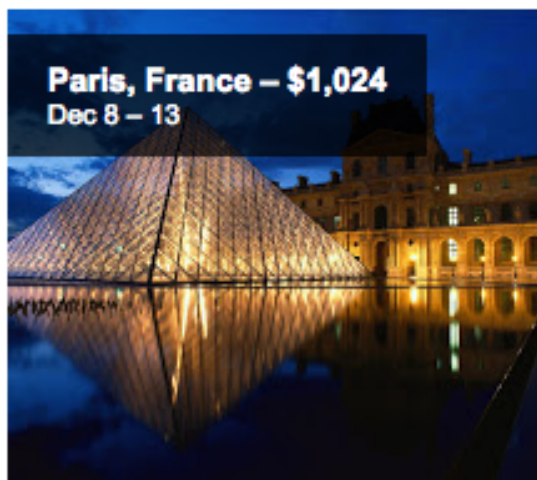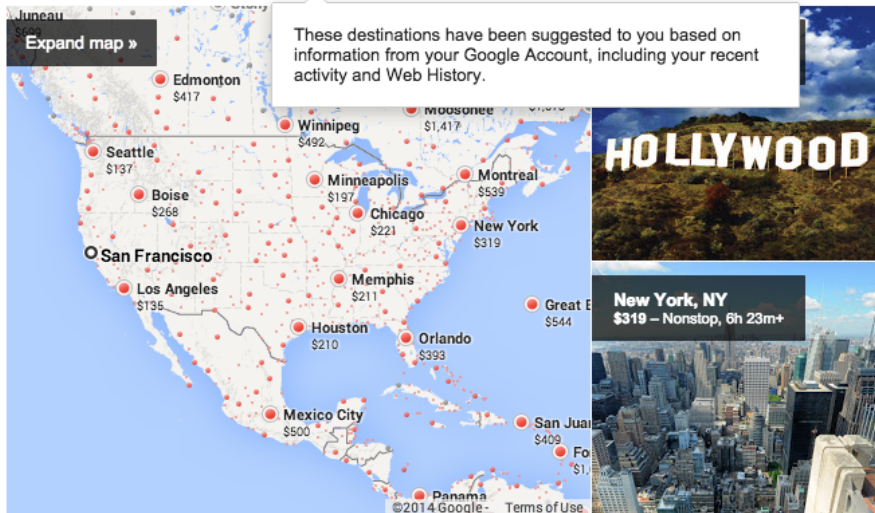
Paris, France – $1,024
Dec 8 – 13

Houston, TX – $210
Dec 3, 2014 – Jan 15, 2015

Seattle, WA – $238
Dec 3, 2014 – Jan 15, 2015

Interactive, Visual
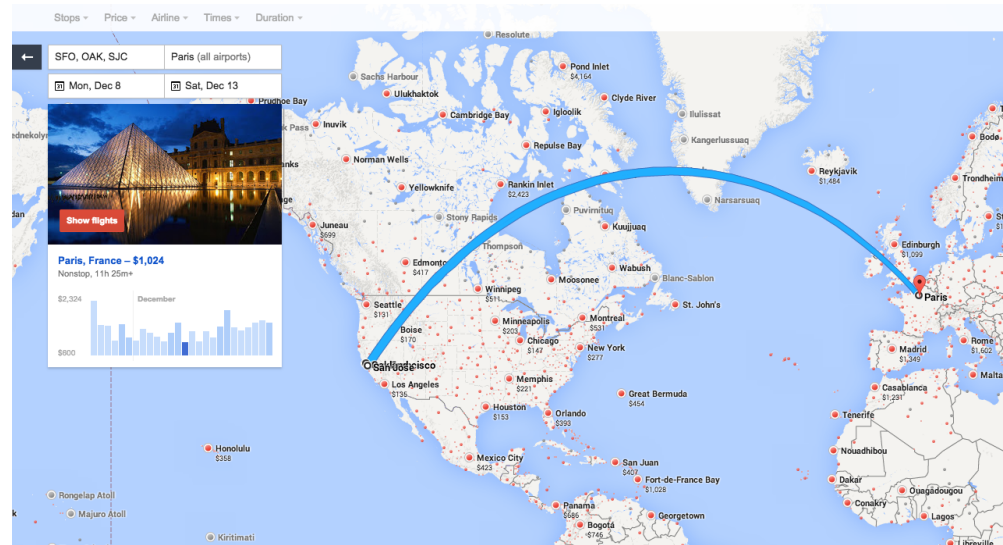
Round trip	One way	Multi-city		Economy ⇕	1 adult ⇕

SFO, OAK, SJC   +

Paris (all airports)   +

📅 Sat, December 13   ◀ ▶

Airports near San Francisco

☑ San Francisco Int'l $1,586
SFO - 10 miles from San Francisco

☑ Oakland Metropolitan Int'l $1,501
OAK - 11 miles from San Francisco

☑ San Jose Norman Y. Mineta Int'l $1,441
SJC - 39 miles from San Francisco

☐ Santa Rosa Sonoma County $1,458
STS - 55 miles from San Francisco

☐ Sacramento Stockton
SCK - 64 miles from San Francisco

More airports

Paris

es may apply.

n Mon, Dec 8

Mon, December 8	◀ ▶		Sat, December 13	◀ ▶

Stops ▾   Price ▾   Airline ▾   Times ▾   More ▾

December								January 2015						
S	M	T	W	T	F	S		S	M	T	W	T	F	S
	1 $1,071	2 $1,430	3 $1,303	4 $1,194	5 $1,048	6 $1,303						1 $1,383	2 $1,500	3 $1,521
7 $1,626	8 $1,024	9 $1,372	10 $1,051	11 $1,372	12 $1,173	13 $1,523		4 $1,898	5 $1,431	6 $1,367	7 $1,171	8 $1,232	9 $1,051	10 $1,209
14 $2,034	15 $1,490	16 $1,378	17 $1,483	18 $1,641	19 $1,700	20 $1,635		11 $1,112	12 $1,011	13 $1,189	14 $1,031	15 $1,209	16 $1,024	17 $1,134
21 $1,958	22 $1,871	23 $1,518	24 $1,383	25 $1,383	26 $1,415	27 $1,465		18 $1,040	19 $1,112	20 $1,011	21 $1,011	22 $1,011	23 $1,011	24 $1,011
28 $2,314	29 $1,900	30 $1,557	31 $1,527					25 $1,040	26 $1,011	27 $1,011	28 $1,011	29 $1,011	30 $1,011	31 $1,011

$2,314

January

$600

Lowest fares for a **5-day trip** ◀ ▶   +/- 0 days ◀ ▶

Expand graph ⤢

Our Redesign

How do we improve?

A **new flight aggregator**.

- **Early segmentation** by simple preference groups.
- **Learn** customer's preferences.
  - Improve defaults, choices shown.
  - Reweight factors for sorting flights.
- Make learned preferences **transparent**.

ABE Concepts/Theories in Resign

- Shift the **anchoring-and-adjustment** heuristic in favor of the customer.
- Implement **Prospect Theory** in the development of customer personas.
- Decrease the **transaction costs** for the customers.

| Round trip | One way | Multi-city | | Economy ⇕ | 1 adult ⇕ |

SFO San Francisco +   Paris (all airports) +

📅 Tue, December 9 ◀ ▶   📅 Sat, December 13 ◀ ▶

Stops ▾   Price ▾   Airline ▾   Times ▾   More ▾

⬇ **Choose an outbound flight**
Tuesday, December 9: San Francisco – Paris
Sort by price + best ▾

Prices round trip, 1 adult, Economy. Additional bag fees may apply.

$1,024   TIP   Save $587 if you leave on Mon, Dec 8
round trip   Depart 1 day earlier

Best flights   Learn more

$1,611 round trip	▲ Delta · Air France	6:15 am – 6:10 am⁺¹	📶 14h 55m SFO-CDG	1 stop 1h 51m in ATL
$1,913 round trip	🌐 United · Lufthansa	2:05 pm – 10:15 am⁺¹	11h 10m SFO-CDG	Nonstop
$2,151 round trip	AF✈ Air France	2:50 pm – 10:35 am⁺¹	10h 45m SFO-CDG	Nonstop

Outbound flight   ✕

Tue, Dec 9	**AF**	**2:50 pm – 10:35 am**[+1]	10h 45m
		San Francisco – Paris · SFO–CDG	
		Air France 83 · Boeing 777	
		Overnight flight	

⬇ **Next, choose a return flight**
Saturday, December 13: Paris – San Francisco
Sort by price ▾

Prices round trip, 1 adult, Economy. Additional bag fees may apply.

$1,546 round trip	KLM	8:15 pm – 12:45 pm[+1] KLM	25h 30m CDG-SFO	1 stop 12h 45m in AMS
$2,436 round trip		7:55 am – 12:45 pm KLM, Air France · Delta	13h 50m CDG-SFO	1 stop 1h 05m in AMS
$3,779 round trip	AF	10:30 am – 12:55 pm Air France · Delta	11h 25m CDG-SFO	Nonstop
$6,189 round trip		9:10 am – 12:10 pm United · Lufthansa	12h 00m CDG-SFO	Nonstop

⌄ Show 48 longer or more expensive flights

Outbound flight   ✕

Tue, Dec 9	**AF**	**2:50 pm – 10:35 am** [+1] San Francisco – Paris · SFO–CDG Air France 83 · Economy · Boeing 777 Overnight flight	10h 45m

Return flight   ✕

Sat, Dec 13	**KLM**	**8:15 pm – 9:30 pm** Paris – Amsterdam · CDG–AMS KLM 1246 · Economy · Boeing 737	1h 15m
		Layover in Amsterdam AMS Overnight	12h 45m
	KLM	**10:15 am** [+1] **– 12:45 pm** [+1] Amsterdam – San Francisco · AMS–SFO KLM 605 · Economy · Airbus A330 Often delayed by 30+ min	11h 30m

Buy your tickets
Total incl taxes & fees for 1 adult

Book with KLM AF 83, KL 1246, KL 605	**$1,546**
Call **Air France** to book: 1-800-237-2747 TTY number: 1-800-210-6508 Marketed as AF 83, AF 8242, AF 8402 Price includes an estimated airline phone service fee of $25.	$1,571
Call **Delta** to book: 1-800-221-1212 TTY number: 1-404-209-3434 Marketed as DL 8599, KL 1246, DL 9380 Price includes an estimated airline phone service fee of $25.	$1,571

| Round trip | One way | Multi-city | | Economy ⇅ | 1 adult ⇅ |

SFO San Francisco   +   Paris (all airports)   +

31 Tue, December 9   ◄ ►   31 Sat, December 13   ◄ ►

Stops ▾   Price ▾   Airline ▾   Loyalty ▾   Times ▾   More ▾   Flyer Type: Budget   +

| **Budget** | **Business** | **Premium** |

1	2	3
$1,481	**$1,583**	**$1,799**
Round-Trip	Round-Trip	Round-Trip
2 stops	2 stops	1 stops
32 hours	*23 hours*	*21 hours*

Full flight details with booking options

Outbound flight   ✕

Tue, Dec 9   6:15 am – 1:45 pm   4h 30m
                San Francisco – Atlanta · SFO–ATL   📶 Wi-Fi
                Delta 1866 · Economy · Boeing 737

                Layover in Atlanta ATL   1h 51m

Option to see details for next budget package

                3:36 pm – 6:10 am⁺¹   8h 34m

Show the benefits of loyalty explicitly, in ***effective price*** and/or ***progress towards status***, while anchoring the decision to stay loyal.

| Round trip | One way | Multi-city | | Economy ⇕ | 1 adult ⇕ |

SFO San Francisco   +

Paris (all airports)   +

📅 Tue, December 9   ◀ ▶

📅 Sat, December 13   ◀ ▶

Stops ▾   Price ▾   **SkyTeam** ▾   **SkyMiles+AmEx** ▾   Times ▾   More ▾   Flyer Type: Budget   +

No loyalty

SkyMiles

✓ SkyMiles + American Express

☐ Miles for status

☑ Miles for flights

Budget   emium

1   3

$1,481   1,799

Round Trip   Round Trip   Round Trip

| Round trip | One way | Multi-city | | Economy ⇕ | 1 adult ⇕ |

| SFO San Francisco | + | Paris (all airports) | + |

| 📅 Tue, December 9 | ◀ ▶ | 📅 Sat, December 13 | ◀ ▶ |

Stops ▾   Price ▾   **SkyTeam** ▾   **SkyMiles+AmEx** ▾   Times ▾   More ▾ | Flyer Type: Budget   + |

| **Budget** | **Convenient** | **Quality** |

1	2	3
$1,481	**$1,583**	**$1,799**
Round-Trip	Round-Trip	Round-Trip
-$130 miles value	-$130 miles value	-$130 miles value
(13020mi)	(13020mi)	(13020mi)
2 stops	**2 stops**	**1 stops**
32 hours	*23 hours*	*21 hours*

Budget	**Business**	**Premium**

1	**2**	**3**
$1,481	**$1,583**	**$1,799**
Round-Trip	Round-Trip	Round-Trip
-$130 miles value	-$130 miles value	-$130 miles value
(13020mi)	(13020mi)	(13020mi)
2 stops	**2 stops**	**1 stops**
32 hours	*23 hours*	*21 hours*

Loyalty Comparison | **United Airlines** is rated comparably to Delta on **Leg Room** and **Customer Satisfaction**. If you booked with United, you could fly for **$1575**.

Meeting our goal

Our original question:

- How can we make for a better experience?

Our redesign strived to address this through:

- Explicit implementation of ABE concepts
  - Smart segmentation, learned preferences, better defaults, increased transparency

Future Work

Happiness Feedback Loop

We want to reduce the time you spend searching for a flight so you can spend more time doing things you love
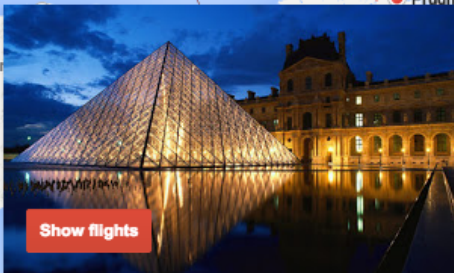
Discussion

- Challenges/Next steps

- Questions?

Appendix
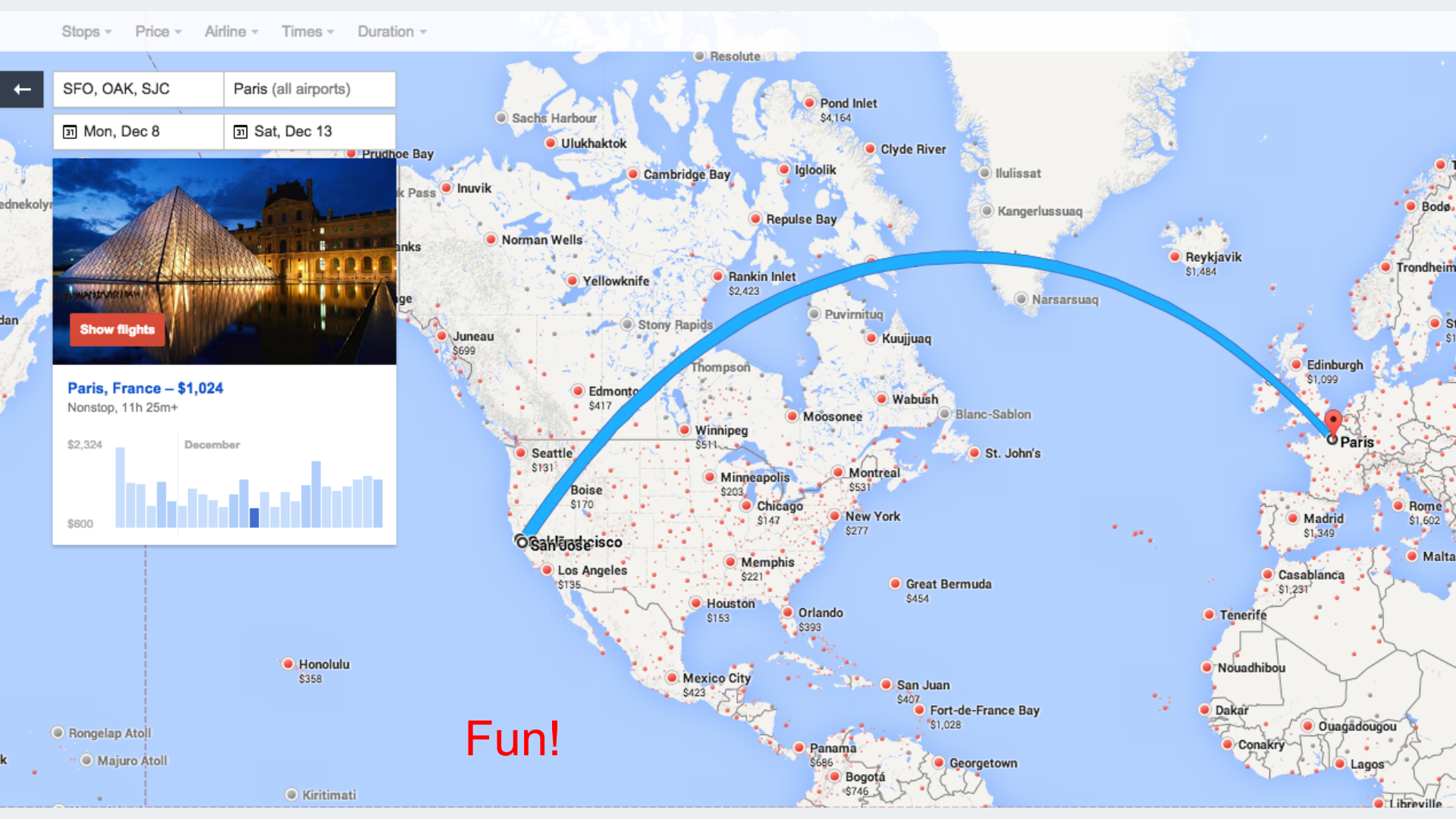
Fun!

Southwest

- (-) Clean, modern homepage, but then gets ugly fast.
- (+) Select departure and return flights on same page, shows all details at once.
- Upsell focuses on mitigating risk.
- Not much focus on "System 1" or current self
  - Focus on budget, some time-pressure offers