## INFORMATION DESIGN AND THE PSYCHOLOGY OF BEHAVIORAL CHANGE

Kath Straub Usability.org

# The purpose of visualization is insight not pictures.

6,255 RDD	
	MANAGING THE GENERAL STORE
NEW COALSI	It's not easy, managing the general store. But Hank's a cheerful man and a hard worker. He gets stuff done.
	Harvest Ten Tomatoes 0/10 UNLOCKFOR 20 20
NEW GOALS!	Listen to One Bad Joke from Hank 0/1
NEW COALSI	
	Clear Five Debris
	Click on Hank to hear the joke of the day. (They're ALL bad!) If you haven't got any debris, clear a space on your homestead and wait a bit.
	0KAY 10 Chat (15)

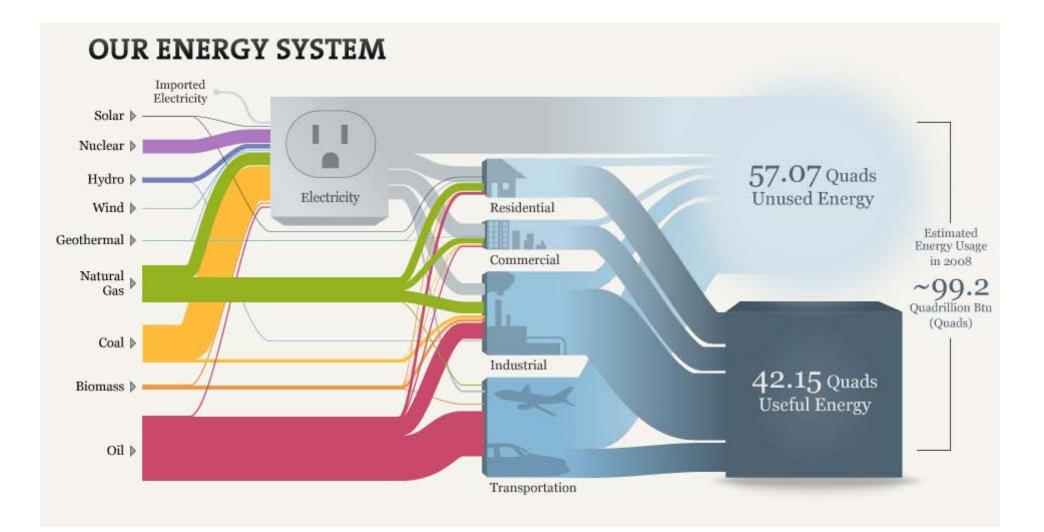
Engage Educate Guide

### Why great information designs don't evoke change Wedesigners forget the conversation part.

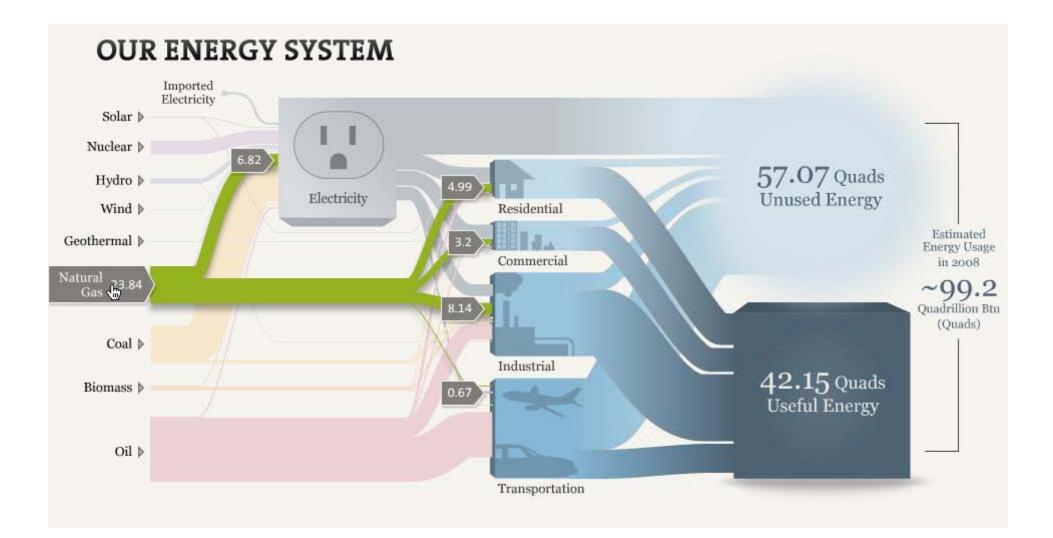


The data above represent approximate values. Energy used represents both the "useful" energy and energy lost due to inefficiencies and thermodynamic limitations. Roll your mouse over each set of data for further explanations.

Information ... because we can.



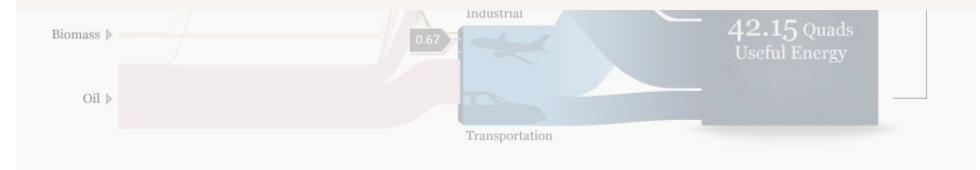
Information ... because we can.



### Information for information's sake

OUR	ENERGY	SYSTEM				
	Imported Electricity					
Solar ▶	Lacandia					
Nuclear	6.82					
Hydro	0.82		4.99		57.07 Quads	

This interactive diagram is based on the energy flow diagram produced by Lawrence Livermore National Laboratory in 2009. The data are from the Energy Information Administration of the U.S. Department of Energy (DOE/EIA-0384(2008), June 2009). Hydro, wind, and solar electricity inputs are expressed using fossil-fuel plants' heat rate to more easily account for differences between the conversion efficiency of renewables and the fuel utilization for combustion- and nuclear-driven systems. This enables hydro, wind, and solar to be counted on a similar basis as coal, natural gas, and oil. For this reason, the sum of the inputs for electricity differs slightly from the displayed total electricity output. Distributed electricity represents only retail electricity sales and does not include self-generation. The efficiency of electricity production is calculated as the total retail electricity delivered divided by the primary energy input into electricity generation. End use efficiency is estimated as 80% for residential, commercial, and industrial sectors, and as 25% for the transportation sector. Totals may not equal the sum of components due to independent rounding.



In our enthusiasm, we forget to remind people why they care and to tell them what to do ...

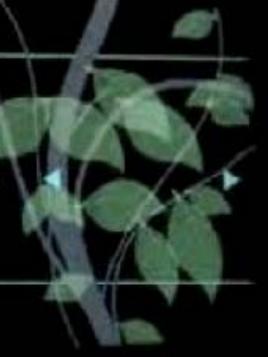




## Efficiency Leaves

Indicates short term efficiency. The more leaves and vines that are displayed, the more efficiently you're driving.

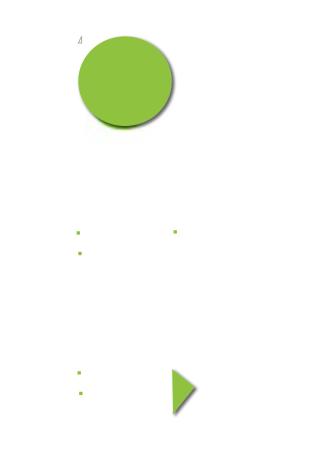
1 of 5



# But, how do I make the leaves grow faster?



# **CREATING HABITS**





	GREEN Do new behavior	BLUE Do familiar behavior	PURPLE Increase behavior intensity	<b>GRAY</b> Decrease behavior intensity	BLACK Stop existing behavior
DOT One time	GREEN DOT Do a new behavior one time	BLUE DOT Do familiar behavior one time	PURPLE DOT Increase behavior one time	GRAY DOT Decrease behavior one time	BLACK DOT Stop behavior one time
SPAN Period of time	GREEN SPAN Do behavior for a period of time	BLUE SPAN Maintain behavior for a period of time	PURPLE SPAN Increase behavior for a period of time	GRAY SPAN Decrease behavior for a period of time	BLACK SPAN Stop behavior for a period of time
PATH From now on	GREEN PATH Do new behavior from now on	BLUE PATH Maintain behavior from now on	PURPLE PATH Increase behavior from now on	GRAY PATH Decrease behavior from now on	BLACK PATH Stop behavior from now on

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### Behavior = Motivation Ability Triggers



## Ability holds me back

Unfamiliar behavior just once

## Fear holds me back

Unfamiliar behavior for some time



# Timing holds me back

Familiar behavior just once



# Size of Commitment holds me back

Familiar behavior from now on





# Green and blue dot behaviors fail to transition to blue paths because we try to do too much too fast

# Sequencing and Behavior Chains

Fogg Behavioral Model - http://www.behaviormodel.org/ But see also Pavlov, Skinner,...



# BACK TO INFORMATION VISUALIZATION

#### Create a conversation

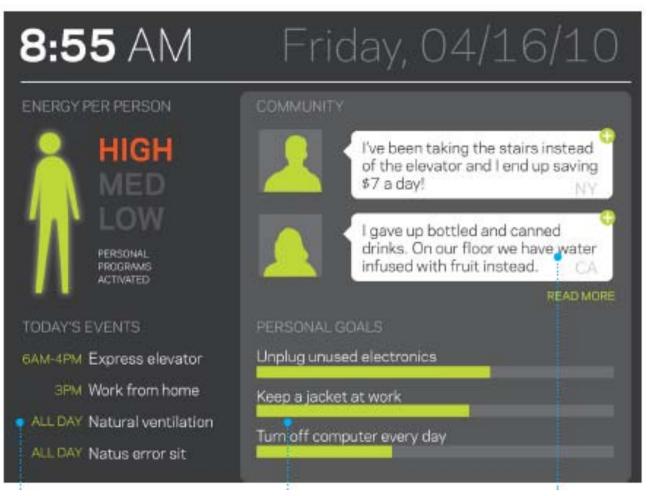
- Help me connect the dots
- Remind me why I care (Motivation)
- Remind me what to do (Trigger)
- Make it easy (Ability)
- Make me accountable
- Reward me

#### Show me what I need to know



IDEO desktop display concept for GSA GREENPRINT

### Show me ... help me TRIP over the information



IDEO Elevator display concept for GSA GREENPRINT

### Show me ... help me TRIP over the information



Push Alerts

#### Show me what I need to know... in a way that is meaningful to me

AR 104 1004

Enphase Energy: Monthly Report

#### Monthly Energy Pro Report for Chong, J

Monthly\_report1c Welcome to your monthly energy about your system. View the sur system performed and how much global carbon footprint.

Welcome to your monthly energy report. Our goal at Enphase Energy is to maximize your solar energy production, and to keep you informed is to maximize your solar energy about your system. View the summaries below to see how your system performed and how much you contributed to offsetting the global carbon footprint.

#### **Energy Production and Peak Power for** February 2011

Week	Peak Power	Energy Produced
02/01/2011 - 02/07/2011	9550 W	430 kWh
02/08/2011 - 02/14/2011	9540 W	456 kWh
02/15/2011 - 02/21/2011	9540 W	368 kWh
02/22/2011 - 02/28/2011	9560 W	413 kWh

February 2011's Total:	1.67 MWh
Previous Month's Total:	1.65 MWh
Year to Date:	3.32 MWh

For more details on these production results, please visit your Enlighten® system.



#### Show me what I need to know... in a way that is meaningful to me

		03/01/2011	
Monthly Ene	rgy Production		
	hong, Jenny Syst	em	
about your system.	solar energy production, and View the summaries below to nd how much you contribute	see how your	
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Week 02/01/2011 - 02/07/2011	Peak Power 9550 W	Energ Febr	uary 2011's Total:
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02/15/2011 - 02/21/2011	9540 W	Previo	ous Month's Total:
02/22/2011 - 02/28/2011	9560 W		
Febr	uary 2011's Total:		Year to Date:
Previo	ous Month's Total:	7.00 MAAU	
	Year to Date:	3.32 MWh	
r more details on these production	Your Carbon (	Offsets em generated 1.67	
Monthly_report2b	MWh of energy du February 2011. CO, offsets: 283		

1.67 MWh

1.65 MWh

3.32 MWh

#### Show me what I need to know... in a way that is meaningful to me

#### Enphase Energy: Monthly Report

Monthly\_report2b

#### 03/01/2011

#### Monthly Energy Production Report for Chong, Jenny System

Monthly\_report1c Welcome to your monthly energy report. Our goal at Enphase Energy is to maximize your solar energy production, and to keep you informed about your system. View the summaries below to see how your system performed and how much you contributed to offsetting the global carbon footprint.

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Tell me what to do next ..

Small, visible, incremental steps.





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Tell me what to do next ...

Small, visible, incremental reinforcement



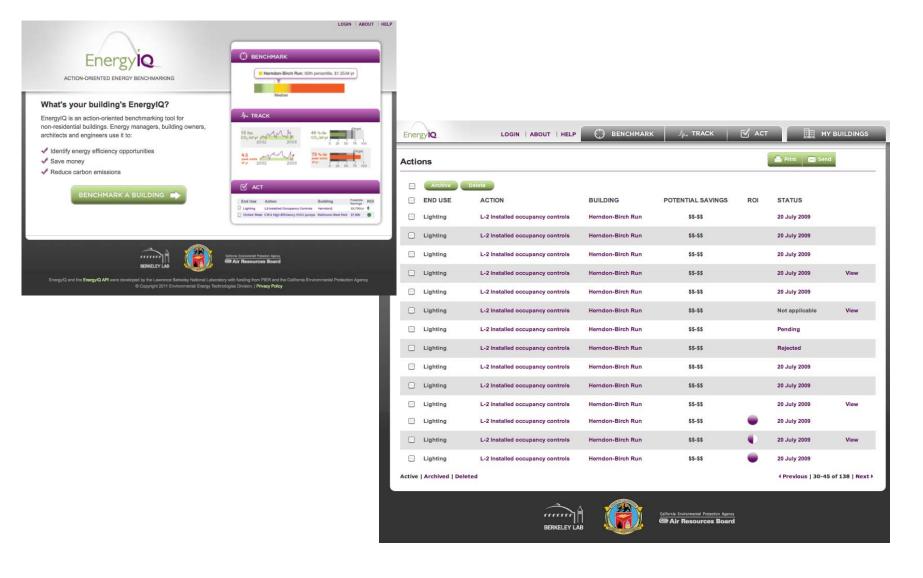


#### Reinforce me when I get it right ...

<	<	Se	p 20	10	>	>>	Log Hours: Wednesda	y Septe	mber 22, 2010
iu	Mo	т.,	We	Th	Er.	6.2	Project:		Notes:
u	MO	IU	we	In		54	LBNL - EnergyIQ	-	
29	30	31	1	2	3	4			
5	6	7	8	9	10	11	Task:		
12	13	14	15	16	17	18	- select a task -	_	
19	20	21	22	23	24	25	Hours:		You are a genius
26	27	28	29	30	1	2			V Tou are a genius

**Freshbooks** 

#### Tell me what to do, next.



### Engage me and make me accountable

habitforge	
daily checkpoint	
Hi Kath – Were you successful yesterday (April 12, 2011) at you left work?	
"Habit is second nature, or rather, 1 Your status of yes	s has been recorded for Thu, Oct 15, 2009. Congratulations! You've succeeded 3 days in a row. Only 18 more days to go!

# Information design that changes behavior creates a conversation.

Helps me connect the dots Reminds me why I care (Motivation) Reminds me what to do (Trigger) Makes it easy (Ability) Makes me accountable Rewards me