SEAD | Super-efficient Equipment and Appliance Deployment

CLEAN ENERGY MINISTERIAL
Accelerating the Transition to Clean Energy Technologies

ipeec

BENEFITS OF A CROSS-COUNTRY DATA FRAMEWORK FOR ENERGY EFFICIENCY

TVs 

Rooms ACs 

enerVee

clasp

BERKELEY LAB
LAWRENCE BERKELEY NATIONAL LABORATORY

CREATING A DYNAMIC FRAMEWORK

(Reuters/Jim Urquhart)

CONNECTING DIVERSE DATA FACILITATES INNOVATION

(Reuters/Jim Urquhart)

PROBLEM: SAME SAMSUNG 40” TV HAS VERY DIFFERENT ENERGY METRICS

	US	South Korea	Australia
Model Number	UN40EH5000	UN40EH5000F	UA40EH5006
Lowest Price (USD)	$498 USD	$728 USD (790.470 KRW)	$530 USD (570 AUD)
Energy Consumption	65 kWh/yr	157 kWh/yr	195 kWh/yr
Usage Assumption	5 hours/day	6 hours/day	10 hours/day

Up to 83% Price Difference

Up to 300% Annual Energy Consumption Difference

CROSS-COUNTRY DATA PROJECT OVERVIEW

OBJECTIVE

- Develop an international energy efficiency data standard enabling wider exchange of energy use, ratings/certifications, and pricing data for products

KEY TASKS

- Assess existing data sources, standards, and certifications
- Identify data use cases for TVs and Room Acs
- Develop cross-country reporting framework

BENEFIT

- Single product lookup for energy use, ratings/certifications, and pricing data
- Standard data model for developing new energy efficiency programs
- 3rd parties can promote energy efficiency via access to the data

IDEAL WORLD – INTERACTIVE MOBILE PLATFORM

- Mobile, in store lookup of products with energy use and market pricing
- Energy efficiency data in real-time
- Product labels can be manufacturer or retailer specific QR codes
- 360 retail data and special offers

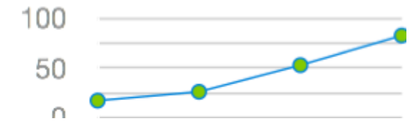
SUPEREFFICIENT.ORG

Televisions, LCD, 26”, Sep 2010 - Oct 2012, USA, Spain, Australia

USA

# of products:	353
price range:	USD 123.00 - 676.90
energy range:	kWh/yr 34.2 - 89.5
energy change:	- 34%
downloads:	

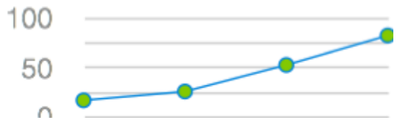
Efficiency



Australia

# of products:	274
price range:	AUD 136.00 - 715.40
energy range:	kWh/yr 34.2 - 89.5
energy change:	- 32%
downloads:	

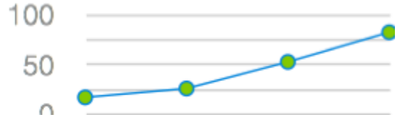
Efficiency



Spain

# of products:	301
price range:	EUR 95.00 – 546.80
energy range:	kWh/yr 34.2 - 89.5
energy change:	- 41%
downloads:	

Efficiency

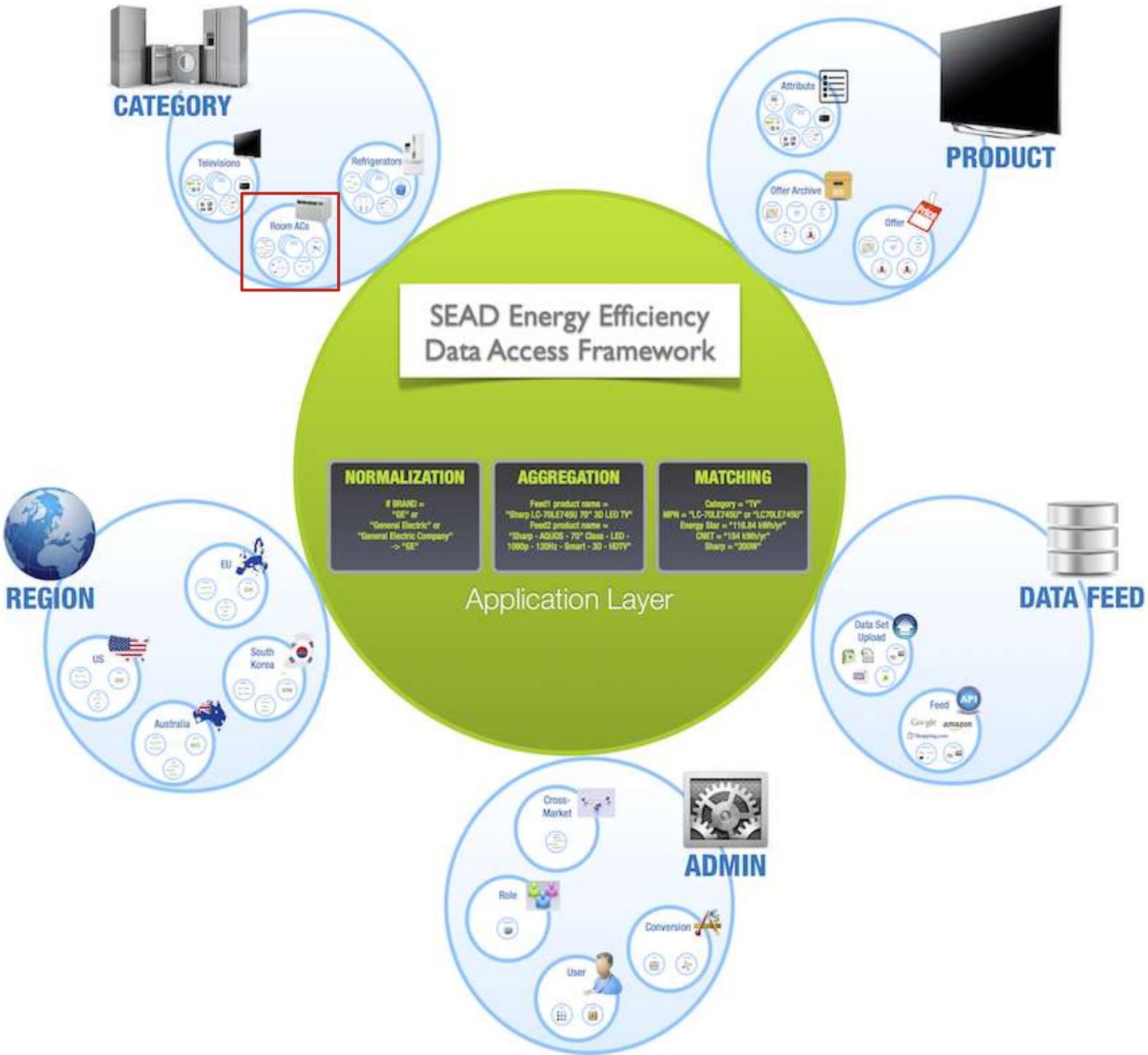


IDEAL WORLD – COUNTRY COMPARISON TOOL

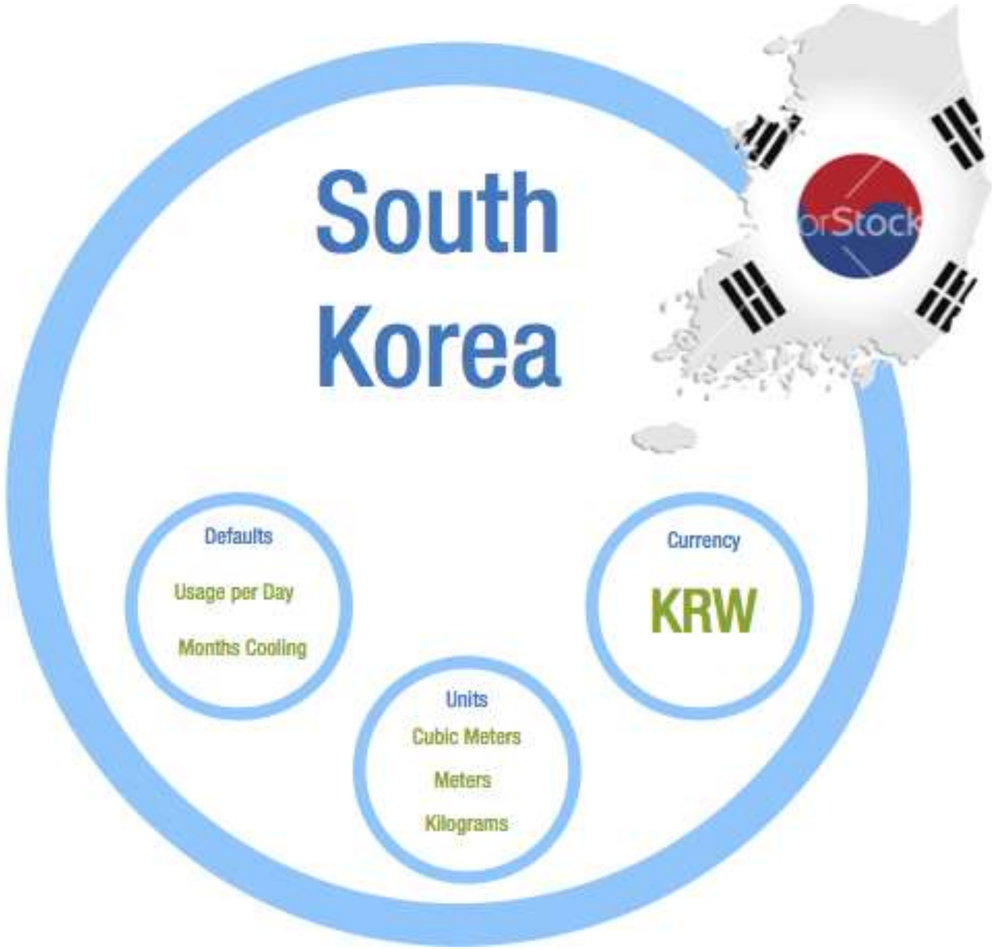
PRORITIZED USE CASES

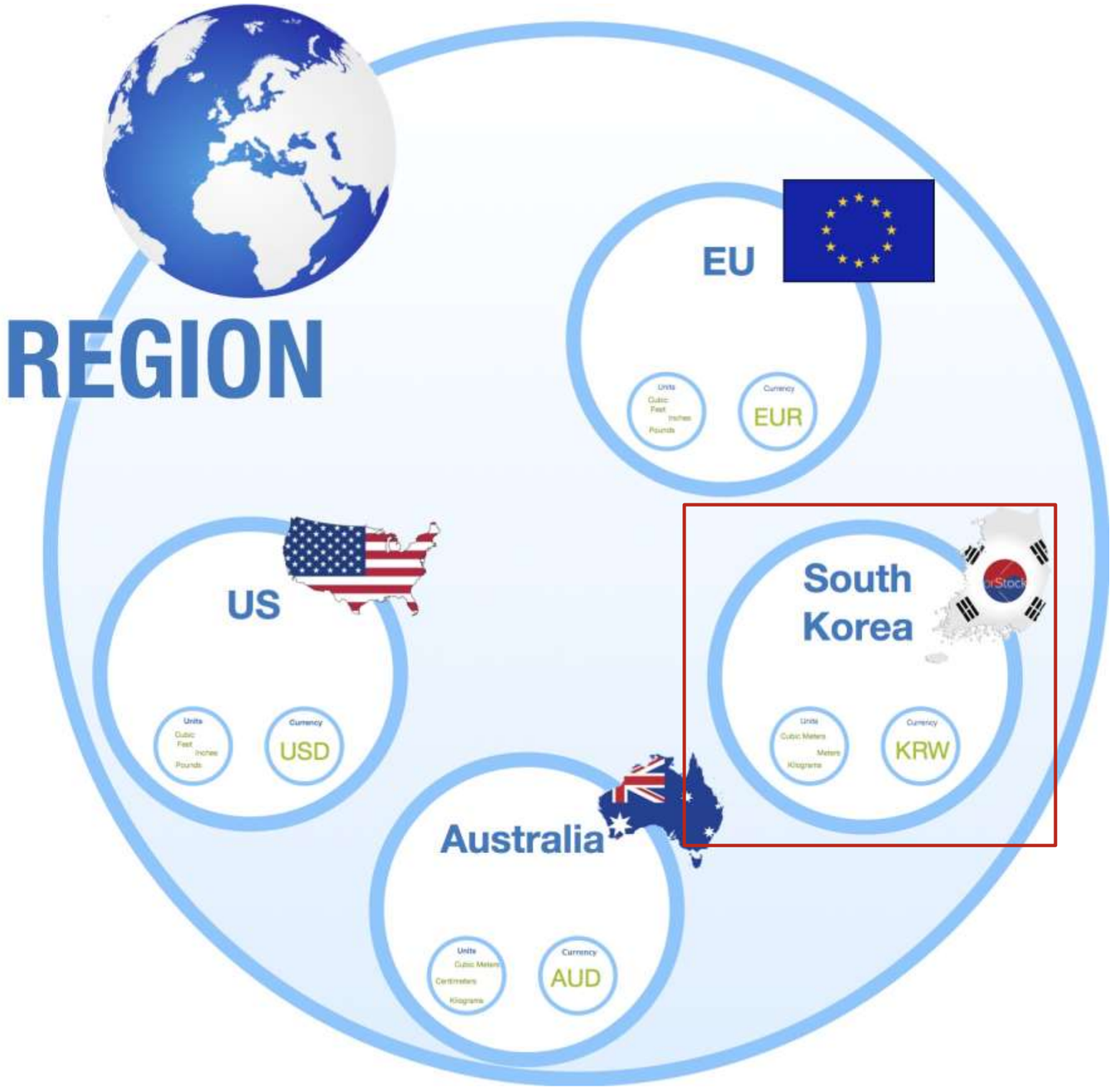
#	Use Case	Need Type	Priority
1	Access to other countries' certifications and ratings for monitoring, verification, and policy design	Policy	High
2	Connect sales and efficiency trends	Policy	High
3	Ability to assess impact of marketing campaigns on consumer adoption	Policy	Low
4	Enables comparison of product rating methods across countries	Policy	High
5	Facilitates procurement activities	Consumer	Low
6	Enables development of consumer mobile apps/online comparison tools	Consumer	High
7	Facilitates product energy efficiency awards (Energy Star & SEAD medals)	Consumer	Low
8	Facilitates utility incentive programs	Consumer	Low
9	Enables comparison of testing procedures	Policy	Low

SEAD Energy Efficiency Data Access Conceptual Model



SEAD Energy Efficiency Data Access Conceptual Model





SEAD Energy Efficiency Data Access Conceptual Model

CATEGORY

Televisions

Energy Rating

Additional Attributes

Screen Size

Technology

Brand

SHARP

Panasonic

LG

SONY

TOSHIBA

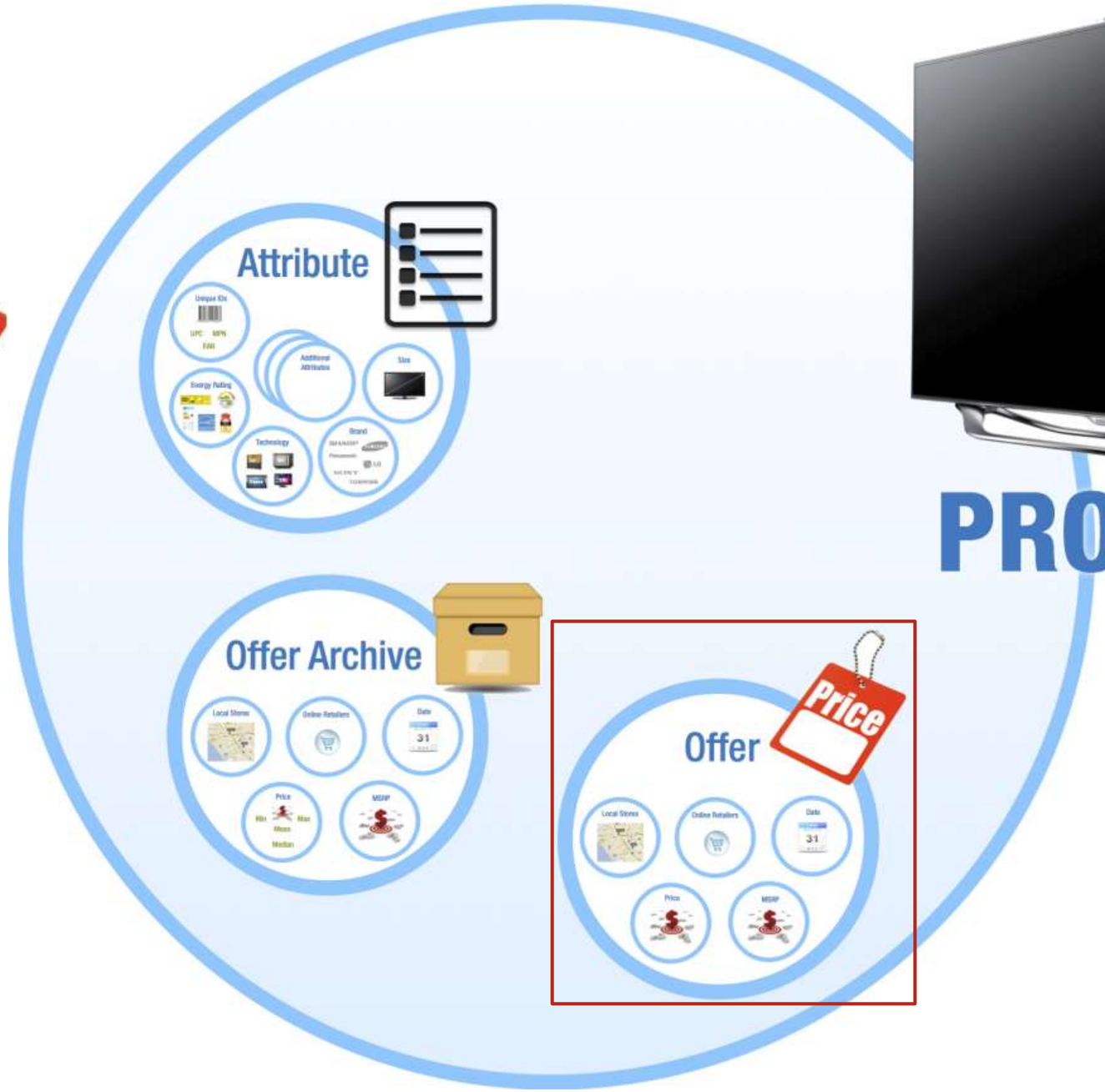
Televisions

Refrigerators

Room ACs

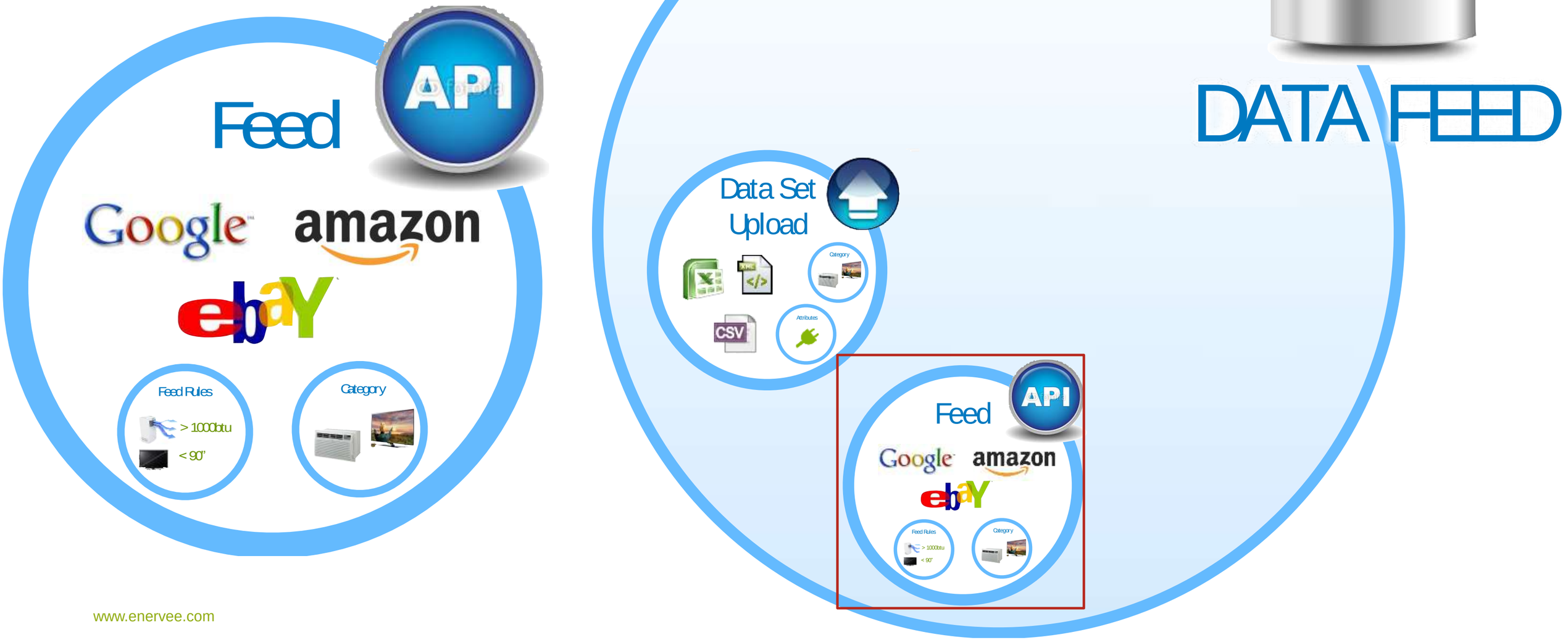
www.enervee.com

SEAD Energy Efficiency Data Access Conceptual Model



PRODUCT

SEAD Energy Efficiency Data Access Conceptual Model



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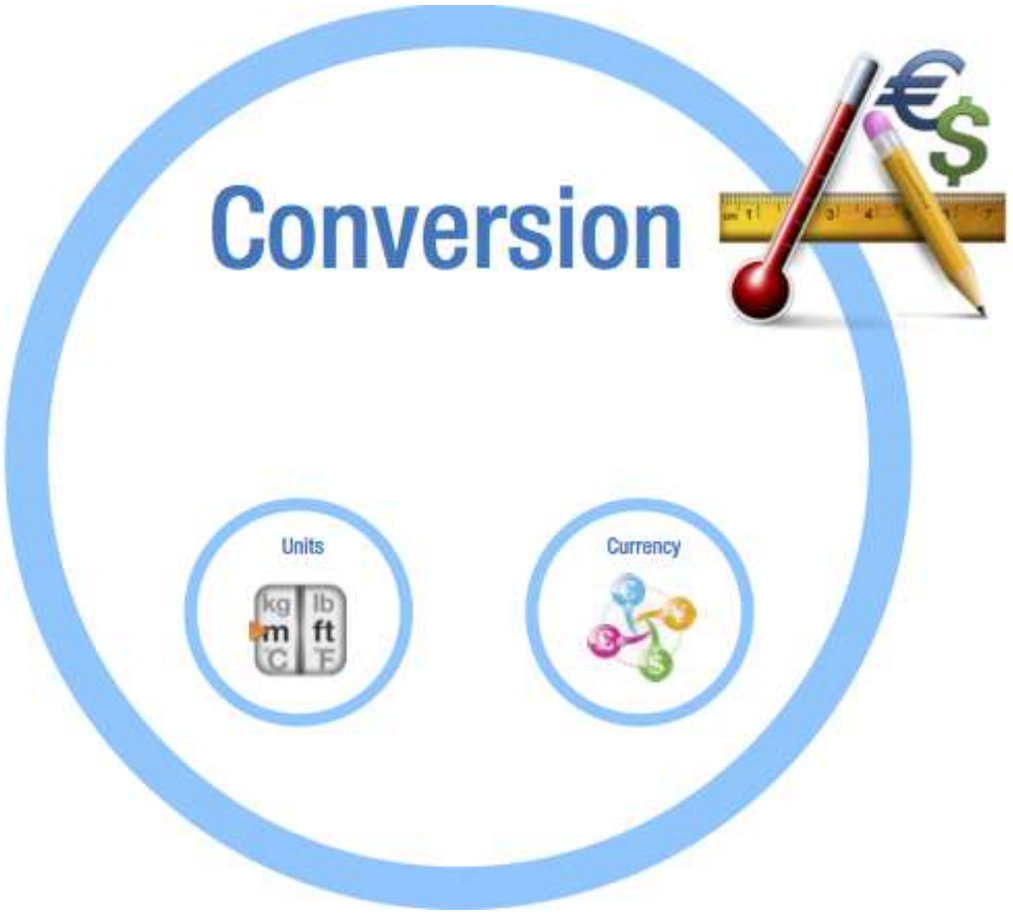
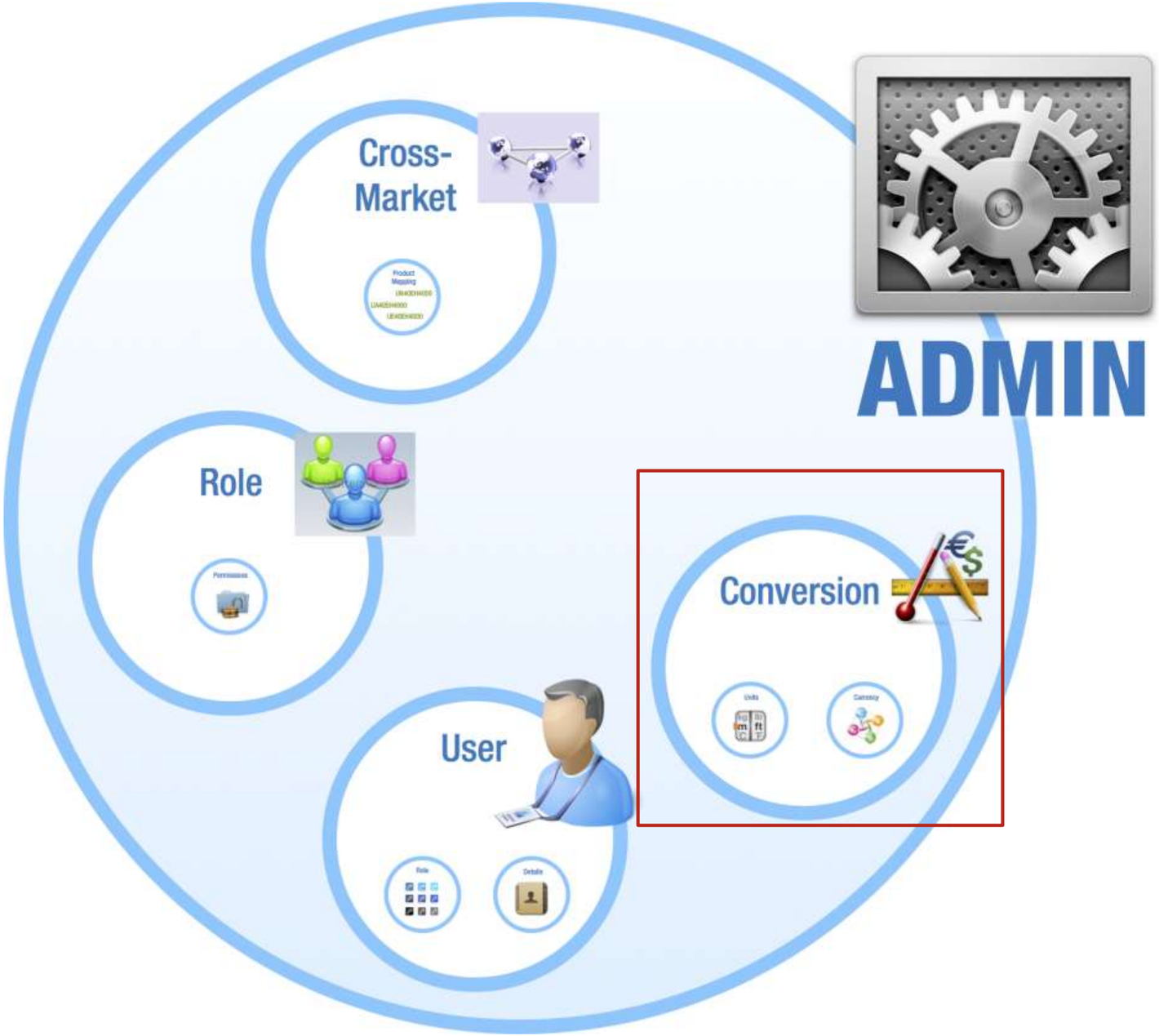


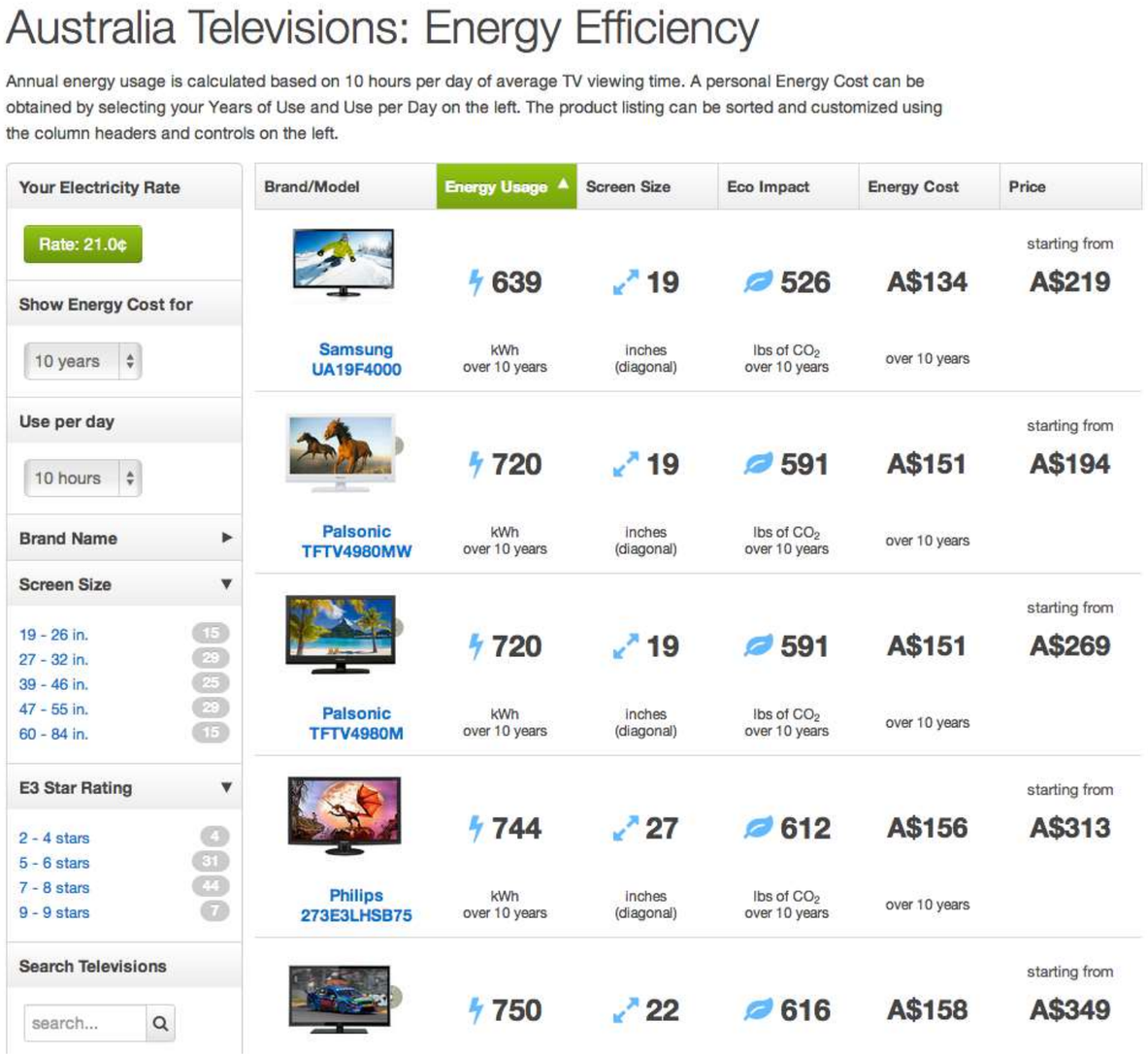


RECOMMENDATIONS FOR CERTIFICATION DATA SETS

- Capture individual product MPNs (model numbers) and UPC/EAN for each certification record to enable easy linking with retail data
- Normalize Manufacturers/Brands at an international level to simplify cross-market matching and trend analysis across countries
- Explicitly declare usage assumptions and test procedures used within each of the certification data files
- Use common syntax for units of measurement at an international level and include a unit of measurement with each numeric attribute

PROTOTYPE FOR AUSTRALIA, SOUTH KOREA & US MARKETS

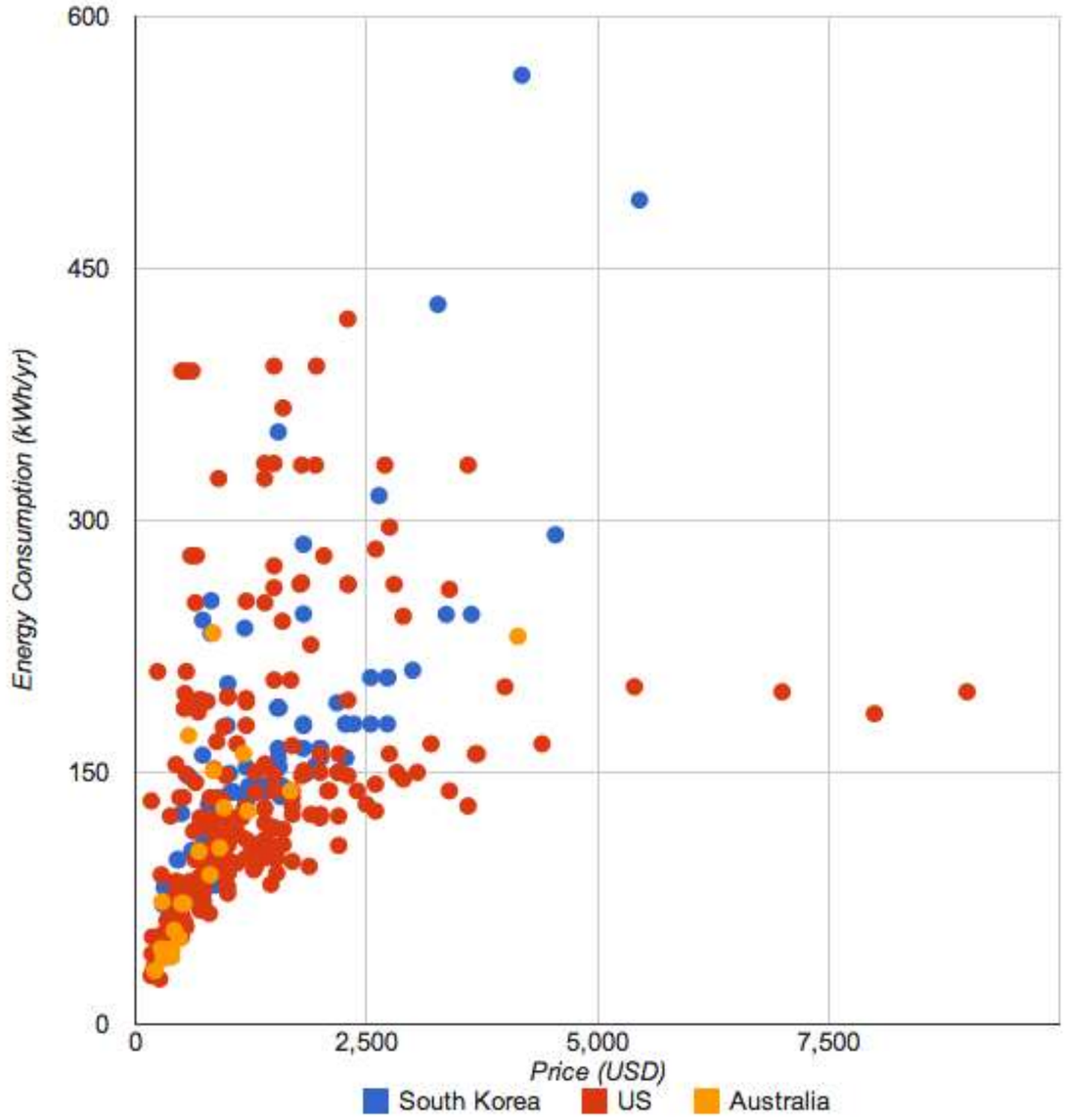
- Comparison of products for each country with real time prices pulled from online shopping APIs
- Energy consumption data matched from certification data sets
- Energy cost personalized based on years of ownership and use per day
- Sorting and filtering on all attributes: price, brand, screen size, certification data, etc.



CROSS-COUNTRY TV ANALYSIS

- Normalized energy consumption to 5 hours/day across three markets
- Prices converted to USD
- Ability to compare data based on technology type, screen size, price range, brand, etc

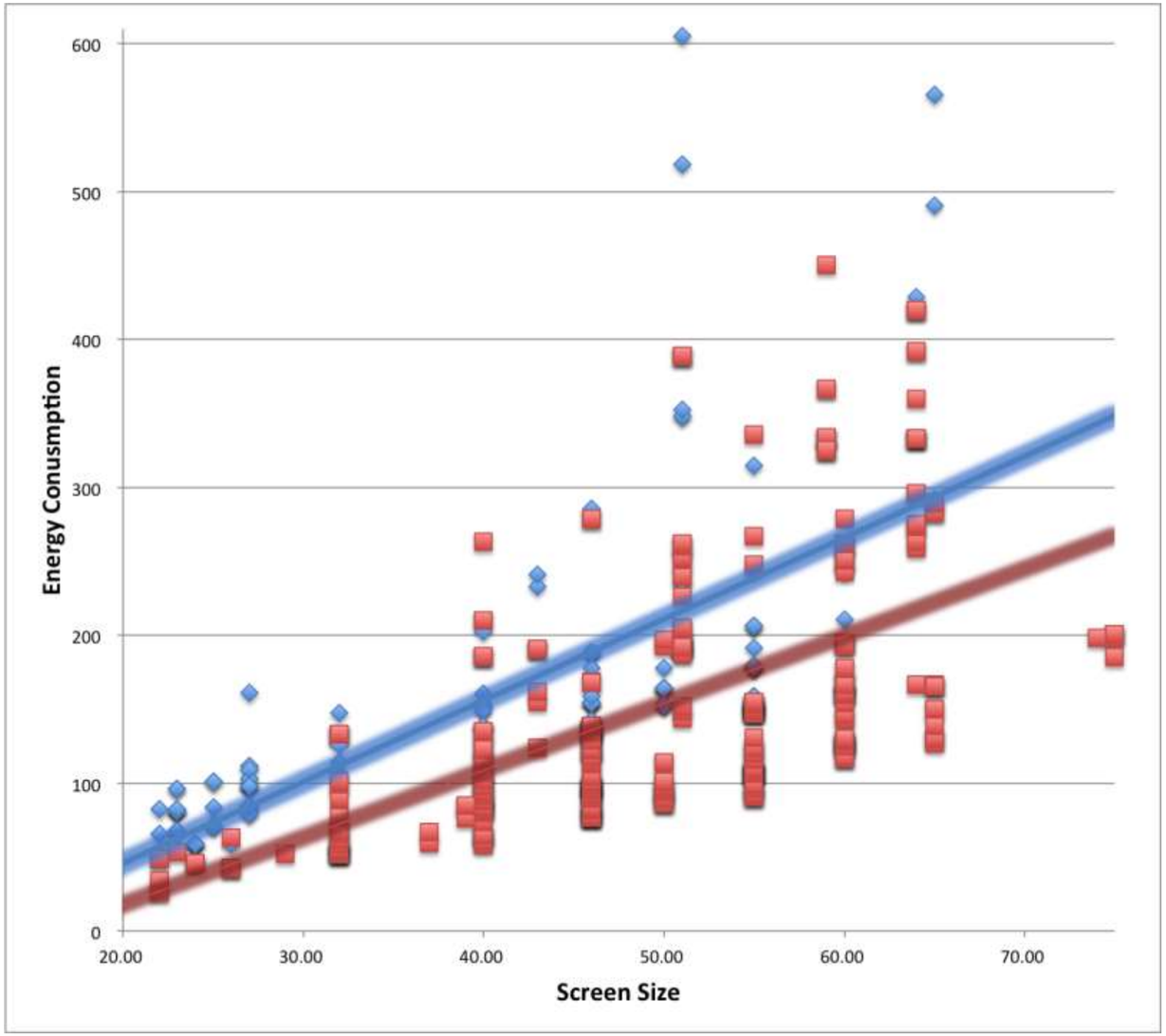
TV Energy Consumption vs Price



CROSS-COUNTRY TV BRAND ANALYSIS

- Normalized energy consumption to 5 hours/day
- Screen size normalized to inches
- Brand X TVs in Market A (Blue) have higher energy consumption than in Market B (Red)

TVs Energy Consumption Country A vs Country B

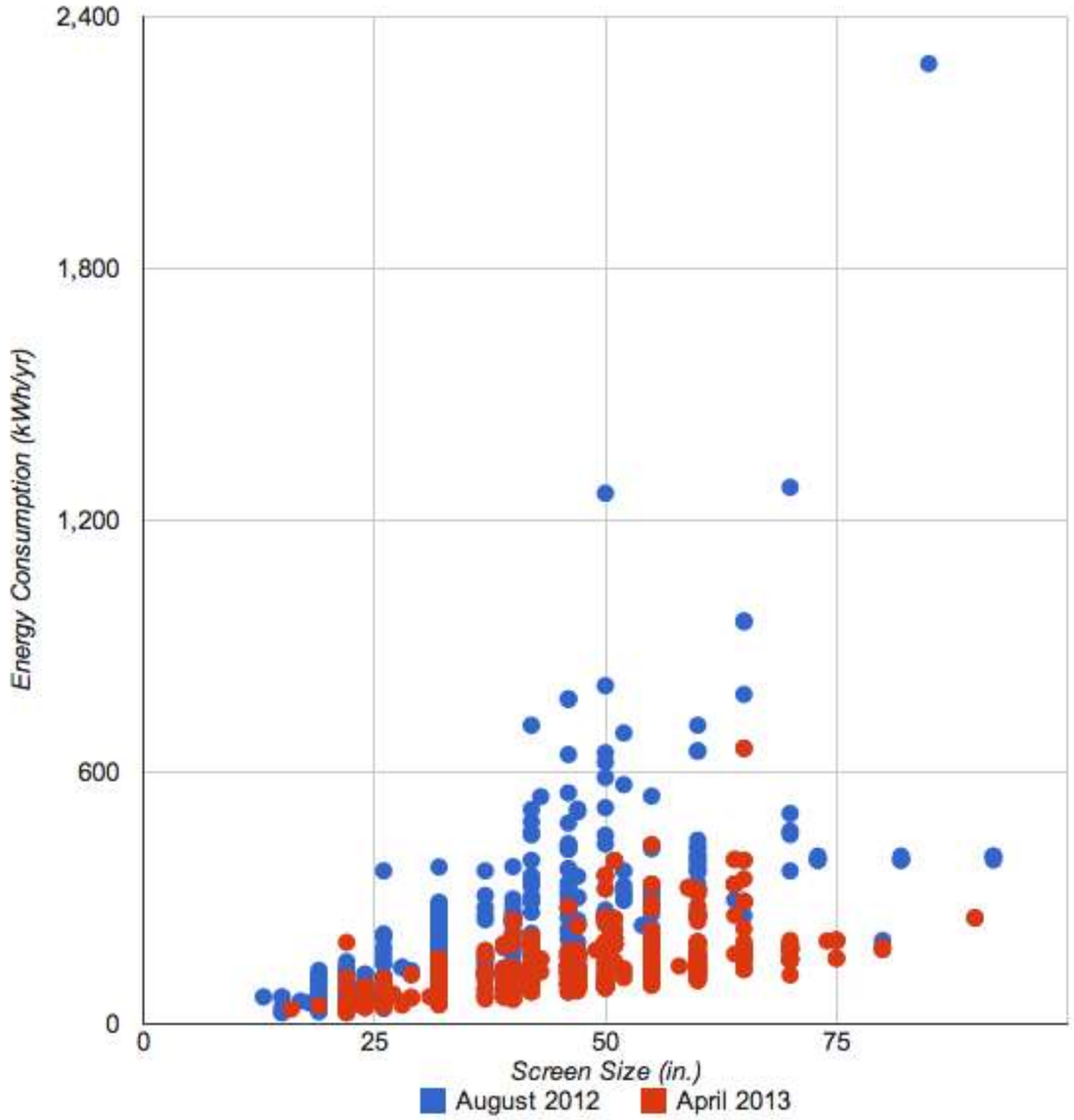


MARKET TRACKING OVER TIME

- California Tier 2 television efficiency standards required televisions in 2013 to use 20% less energy than the 2012 requirement

- Chart indicates large national impact from the California legislation increasing efficiency of all TVs

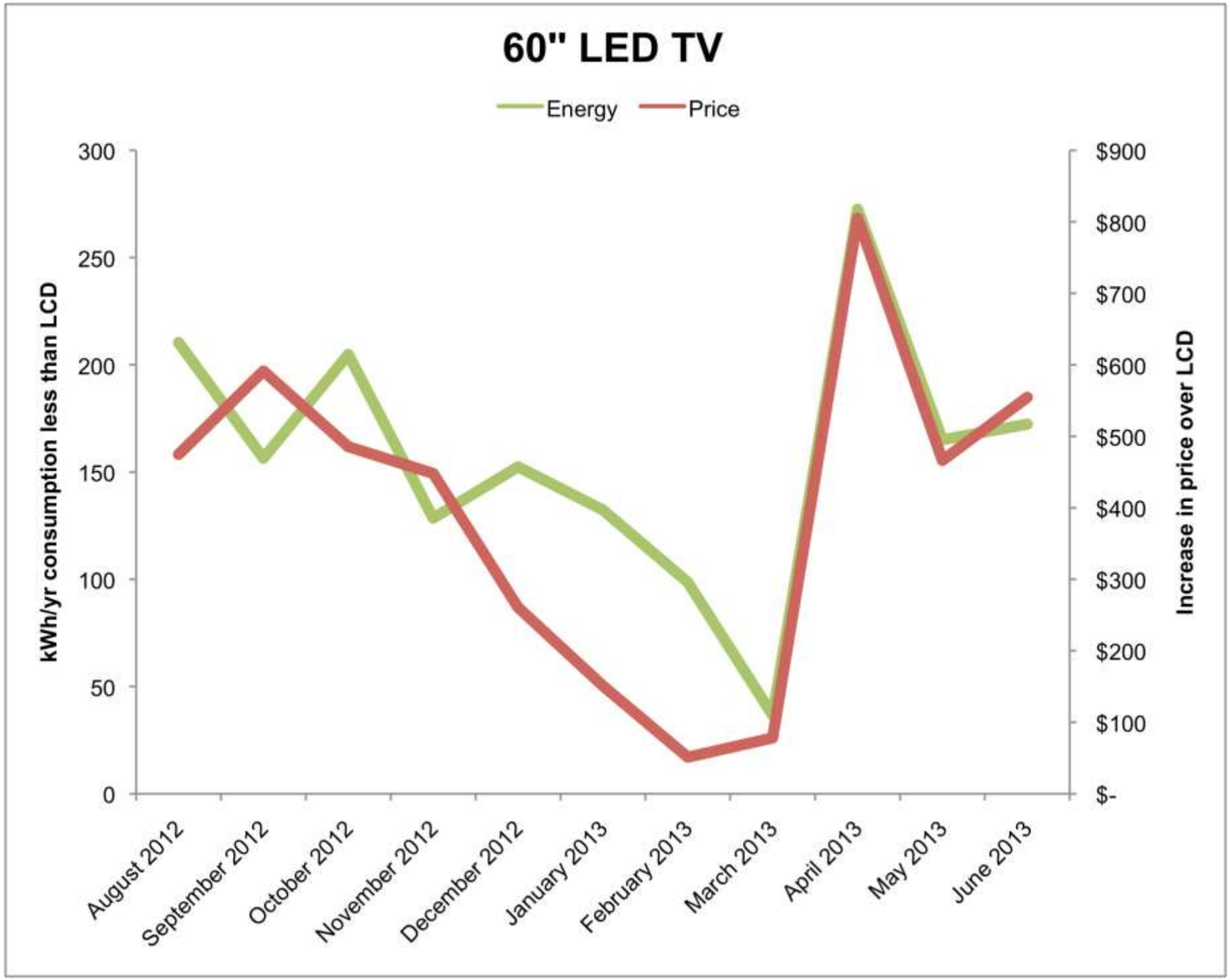
US TV Energy Consumption 2012 vs 2013



ENERGY/PRICE TREND ANALYSIS

- Compared 60” LED TV vs 60” LCD TVs in the US market on price and energy consumption over a one year timeframe

- More efficient LED TVs tend to have higher prices than LCD models



WHAT'S NEXT: HOW TO PARTICIPATE

- Align your country's certification data collection with the global data standard
- Identify and share which online shopping APIs are available for your market
- Talk to us about implementing the Data Access framework
  - Improved correlation between models and sales
  - International model cross comparison and test procedure conversion
  - Certification pilot projects in countries without a program in place

THANKS FOR YOUR INTEREST

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