How the CIQ Platform Works

This slide deck begins to “peel back the layers of the onion” to detail, in somewhat more technical terms, the architecture of the CIQ Platform and how it is used.

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Manufacturer-influenced Decisions at Point of Purchase

CIQ Service-Oriented Architecture

The CIQ Platform implements a Service Oriented Architecture enabling it to easily interact with Desktop, Web and Phone-based applications running on all of the popular platforms; Windows and Mac OS desktops - Windows Mango, IOS and Android smartphones.

CIQ Platform Services

CIQ Platform Database

COMMERCE IQ Platform

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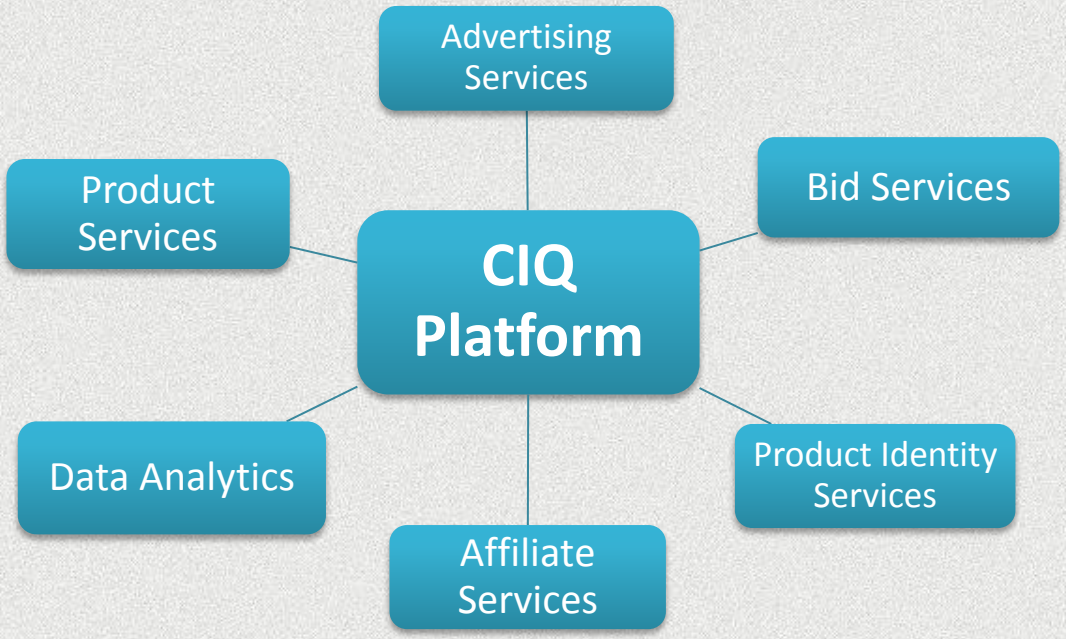
CIQ Service-Oriented Architecture

Every interaction with the CIQ Platform is accomplished through a web-based interface. These interfaces are grouped logically into sets of "services" which provide discrete functions to the various consumers of the platform. For example a manufacturer would use Advertising and Bid Services to set up discount ads and create bids. They would use Data Analytics services to understand the performance of their ads and how they compare to competitors. Smartphone Apps on the other hand would use Affiliate Services to obtain precisely-targeted ads when a tag is snapped.

Services are used by the CIQ team as well to manage and maintain the platform. For example Product Identity Services enable new tags to be entered into the system so that the CIQ Platform can recognize new products when they are snapped.

Product Services are used in numerous scenarios, but internally we use them to manage the product taxonomies which will be explained further in this deck.



And now a look at the services that make up the CIQ Platform

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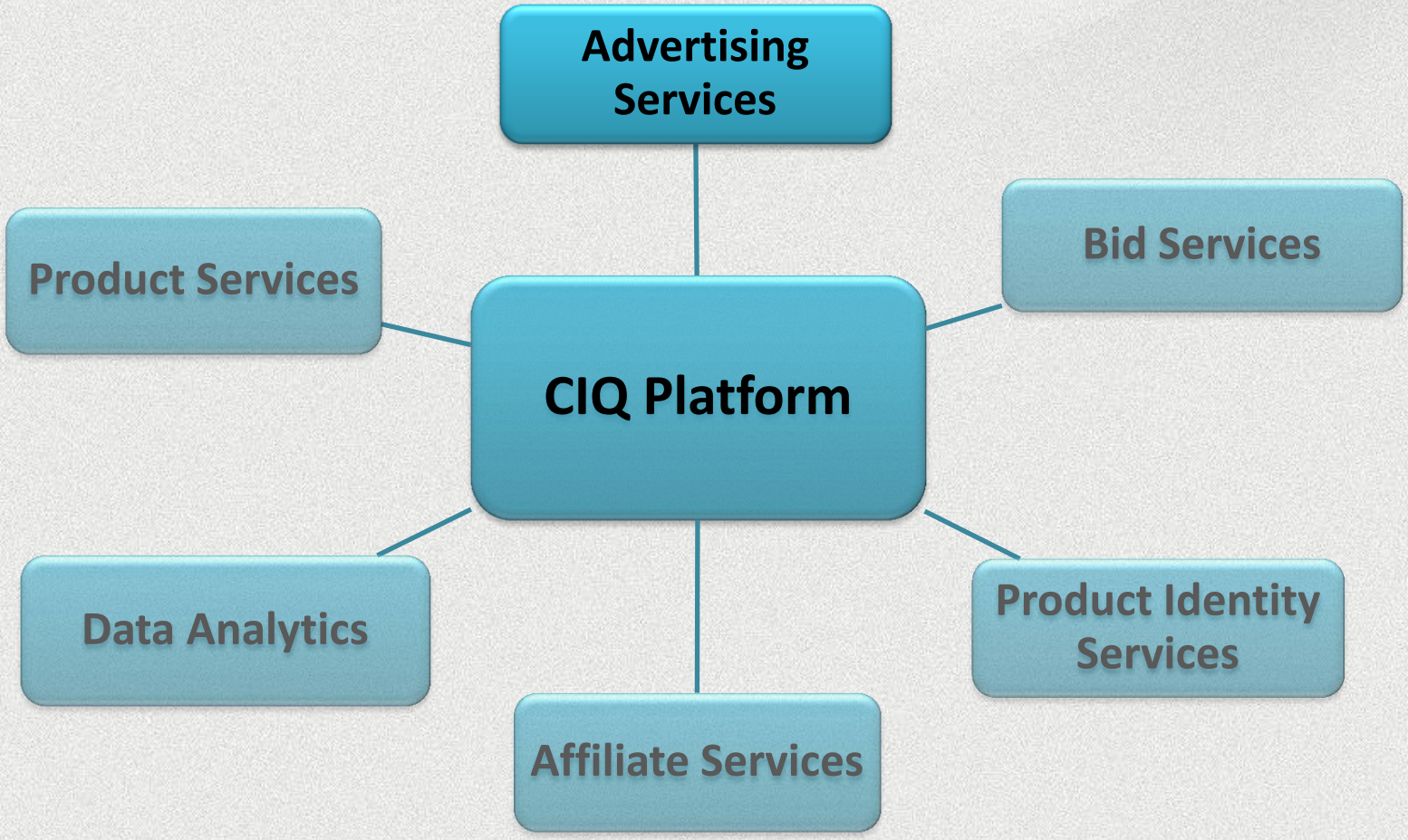
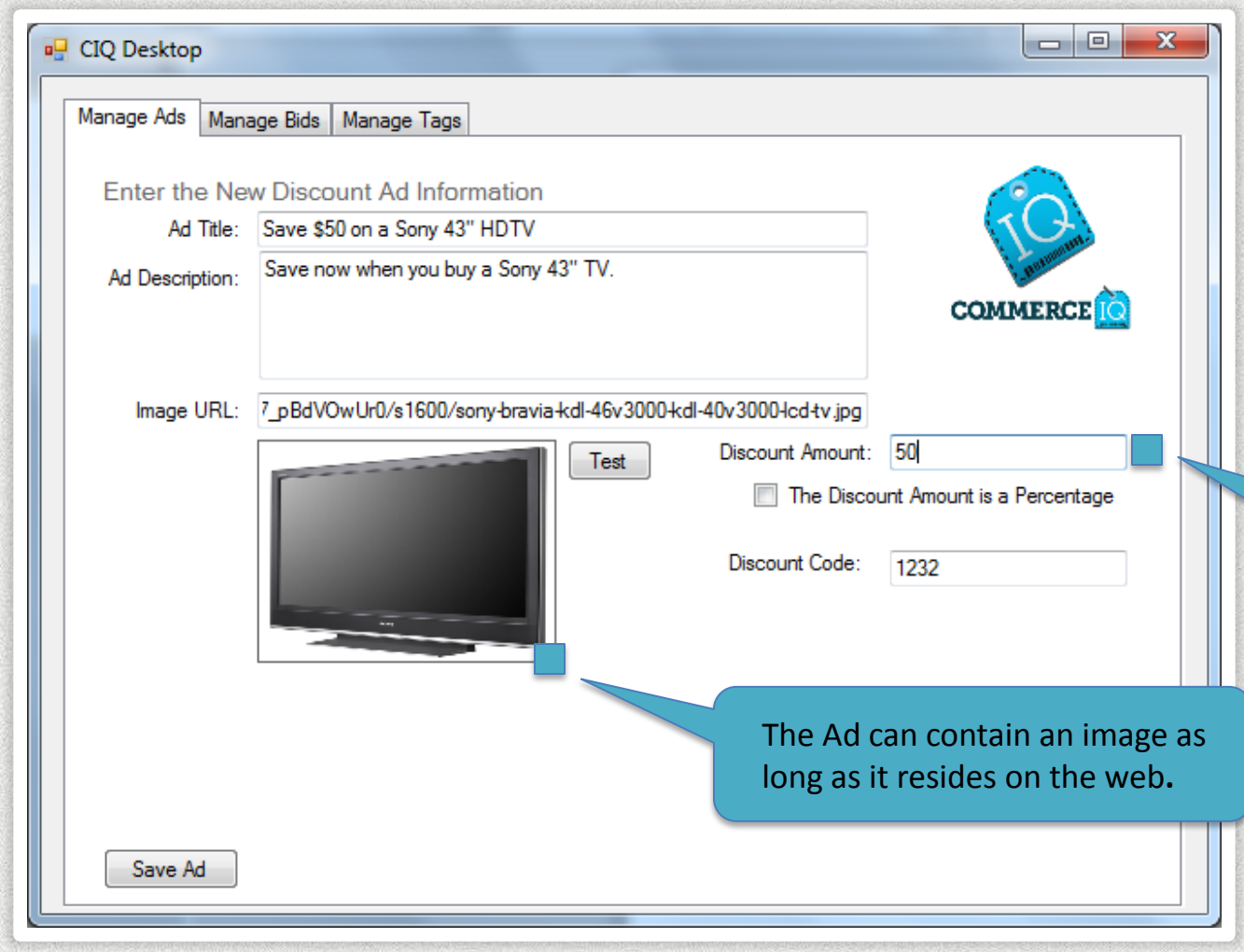
CIQ Platform Services



CIQ Advertising Services



Using CIQ Desktop, a manufacturer or retail marketer creates discount advertisements that will be sent to a consumer's smartphone app when a targeted tag has been snapped.

Discounts can be dollar amounts or percentages.

The Ad can contain an image as long as it resides on the web.

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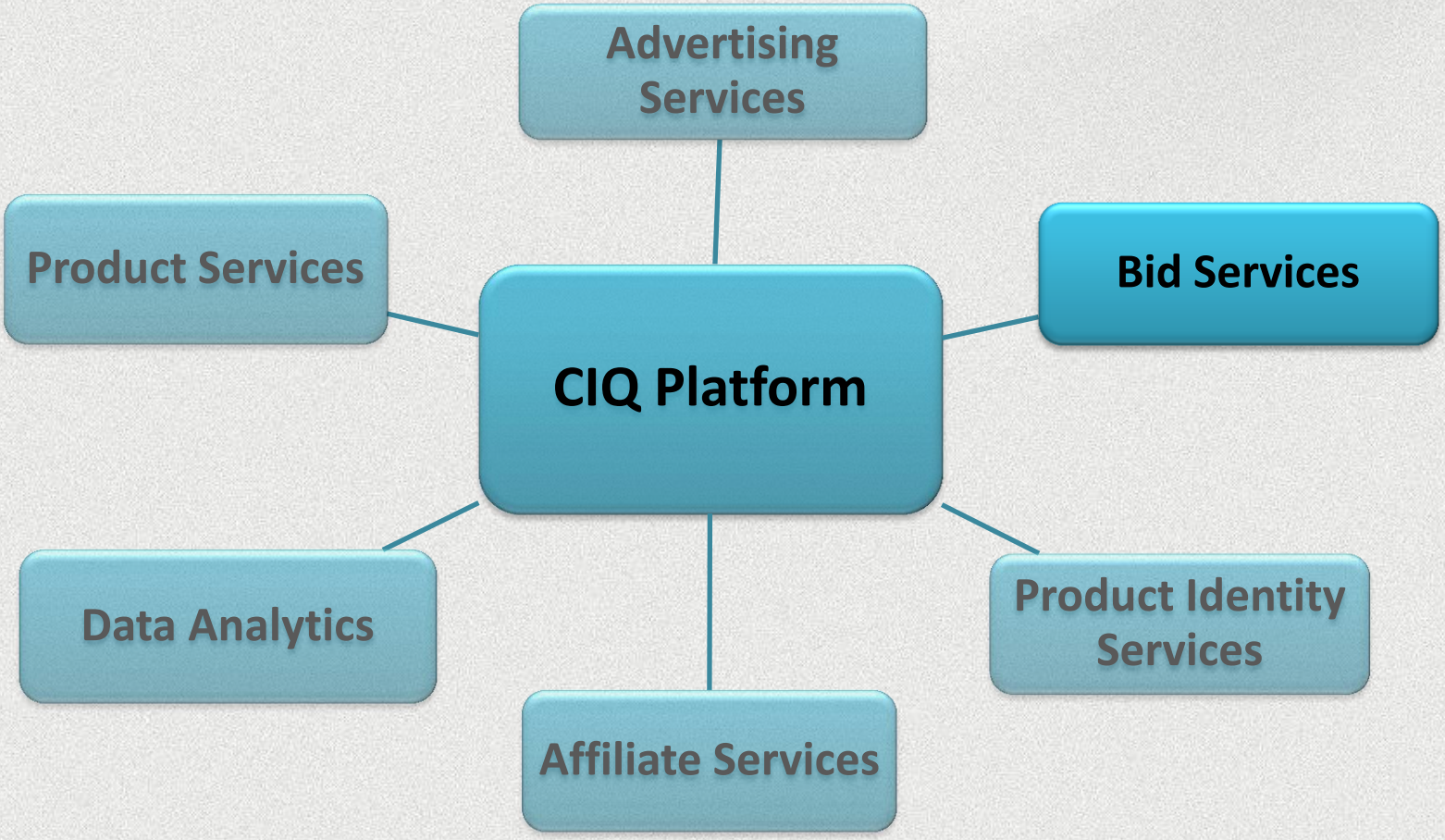
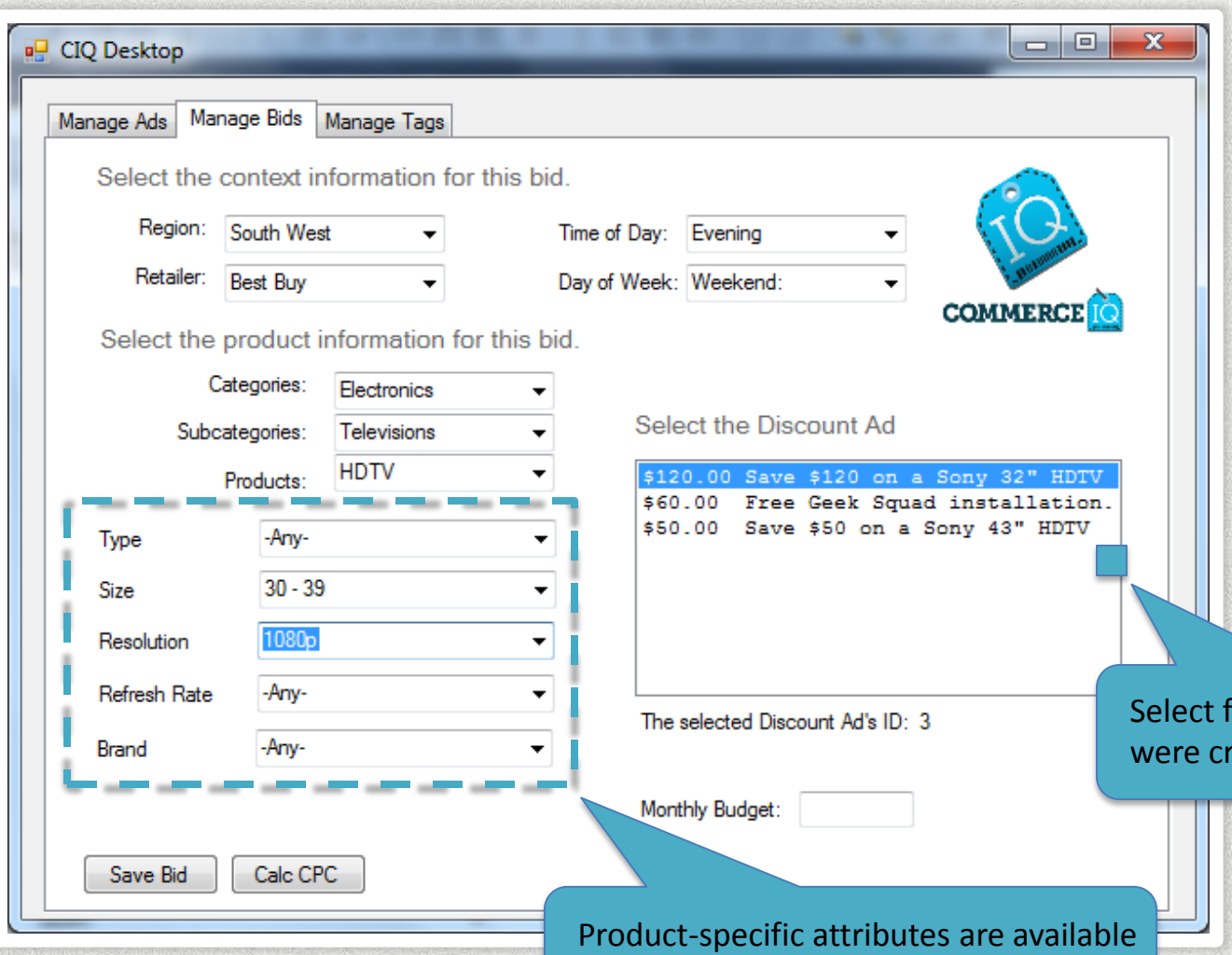
CIQ Platform Services



CIQ Bid Services



Using CIQ Desktop, a manufacturer or retail marketer creates a Bid which is associated to a previously-created discount ad. A Bid is used in targeting an Ad to a consumer that has snapped a product tag that the manufacturer wishes to act upon.

Bids enable marketers to target consumers according to the product, snap location, time of day, day of week and retailer.

Select from discount Ads that were created in a prior step

Product-specific attributes are available to enable very-targeted advertising

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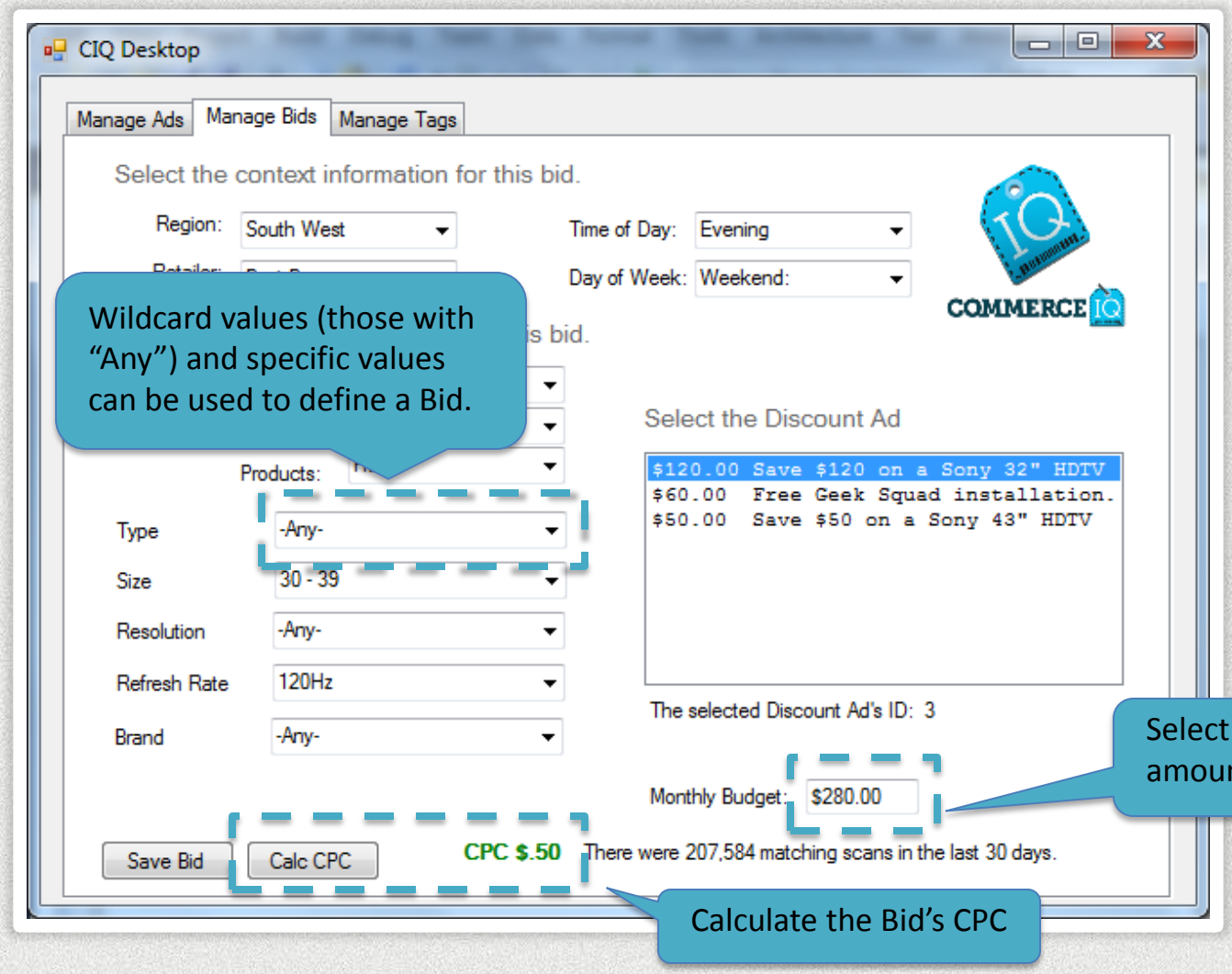
CIQ Bid Services



Any of the Bid properties (for example Region, Category, Product, or any of the product's properties) can have a specific or a wildcard value. Wildcard values are represented by "Any".

Clicking the "Calc CPC" button will calculate the cost-per-click of the Bid which is based upon the selected values. Wildcard values will result in higher CPC because they equate to a larger set of target scans.

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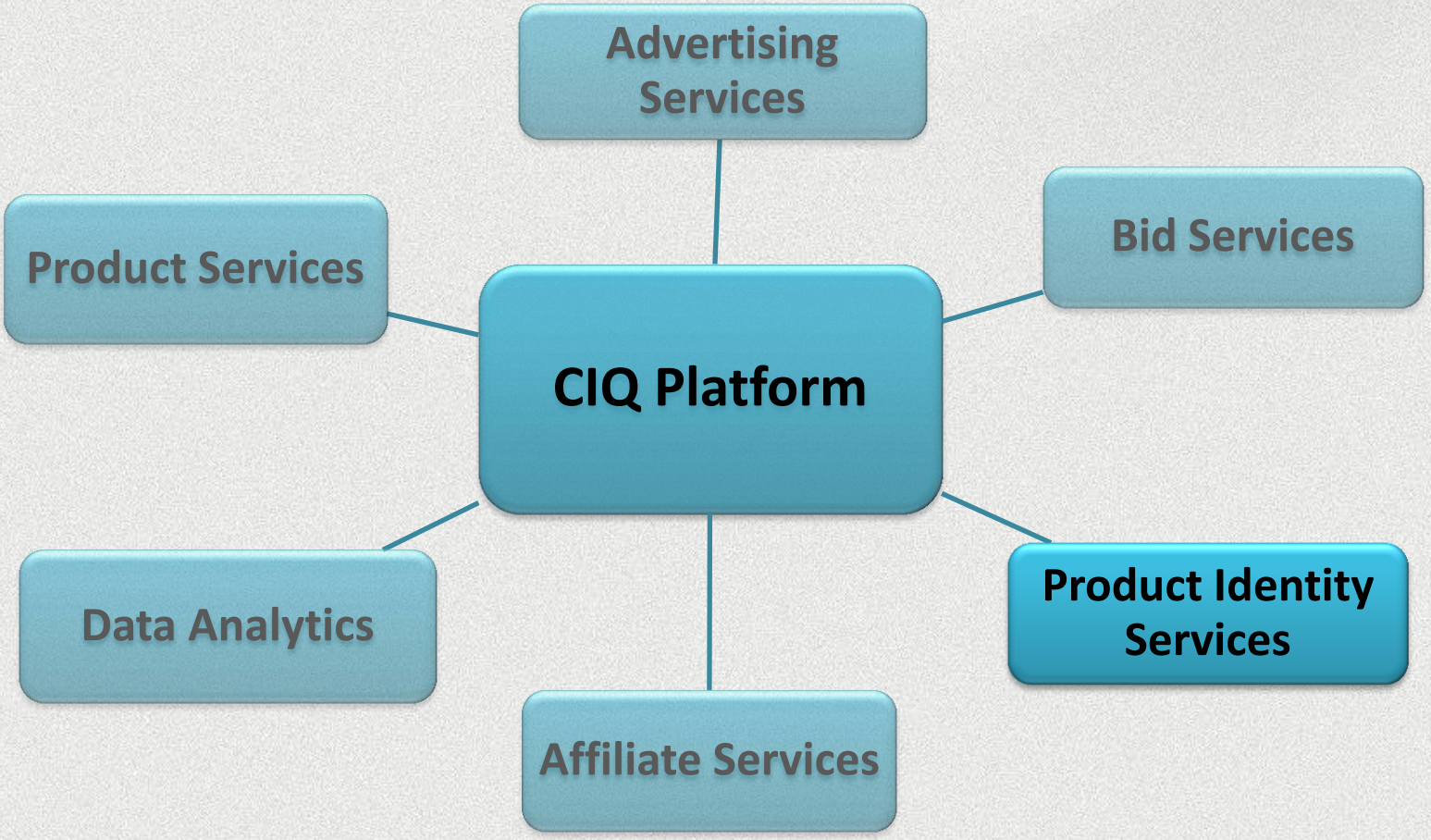
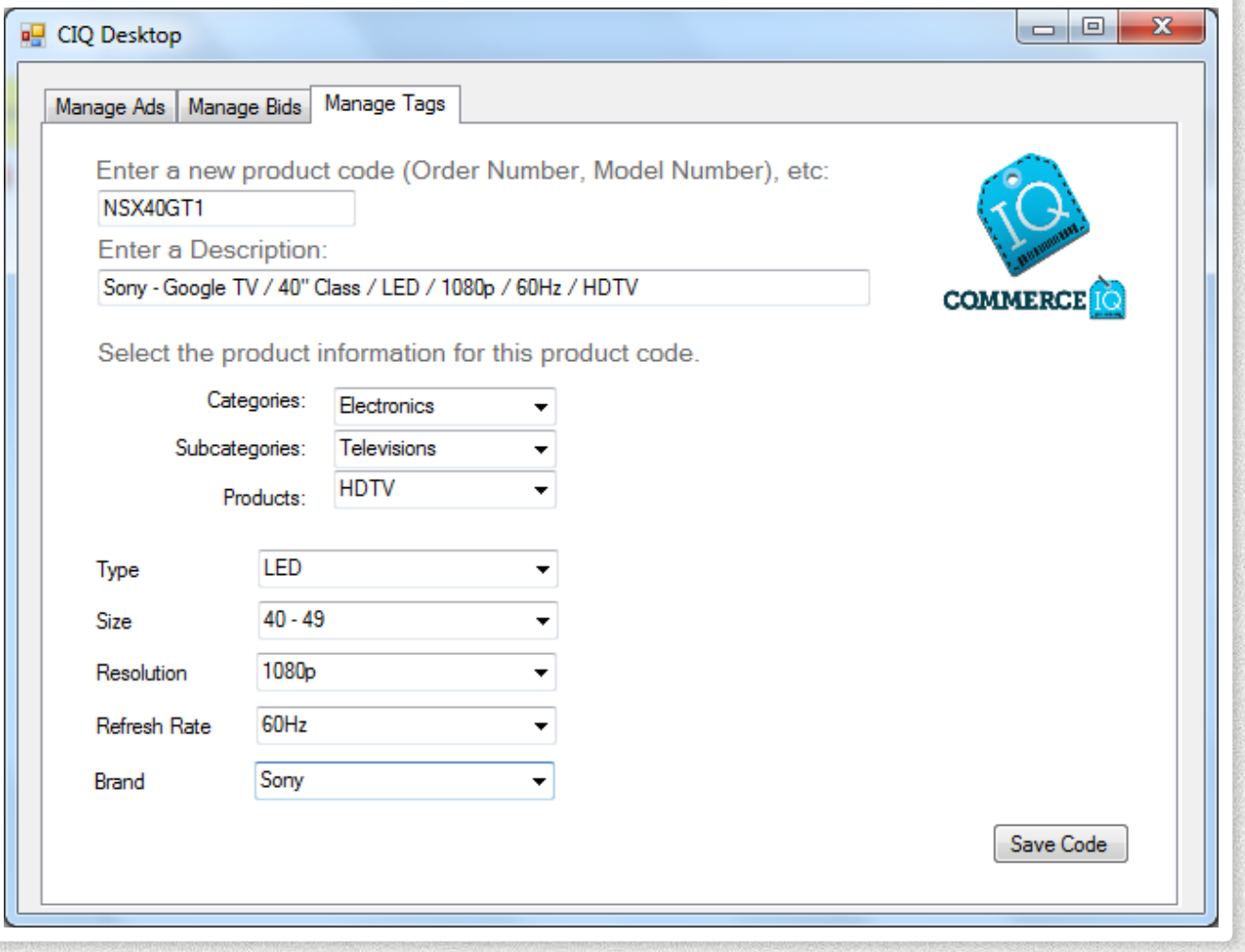
CIQ Platform Services



CIQ Product Identity Services



Product Identity Services associates a product model number with a configuration. In the above example, the model number NSX40GT1 is associated with a 40” Sony HDTV. These associations are stored in the CIQ Platform.

When a consumer snaps a tag with that number, the associated product configuration is referenced and compared against the applicable Bids in order to deliver the most pertinent discount ads back to the consumer.

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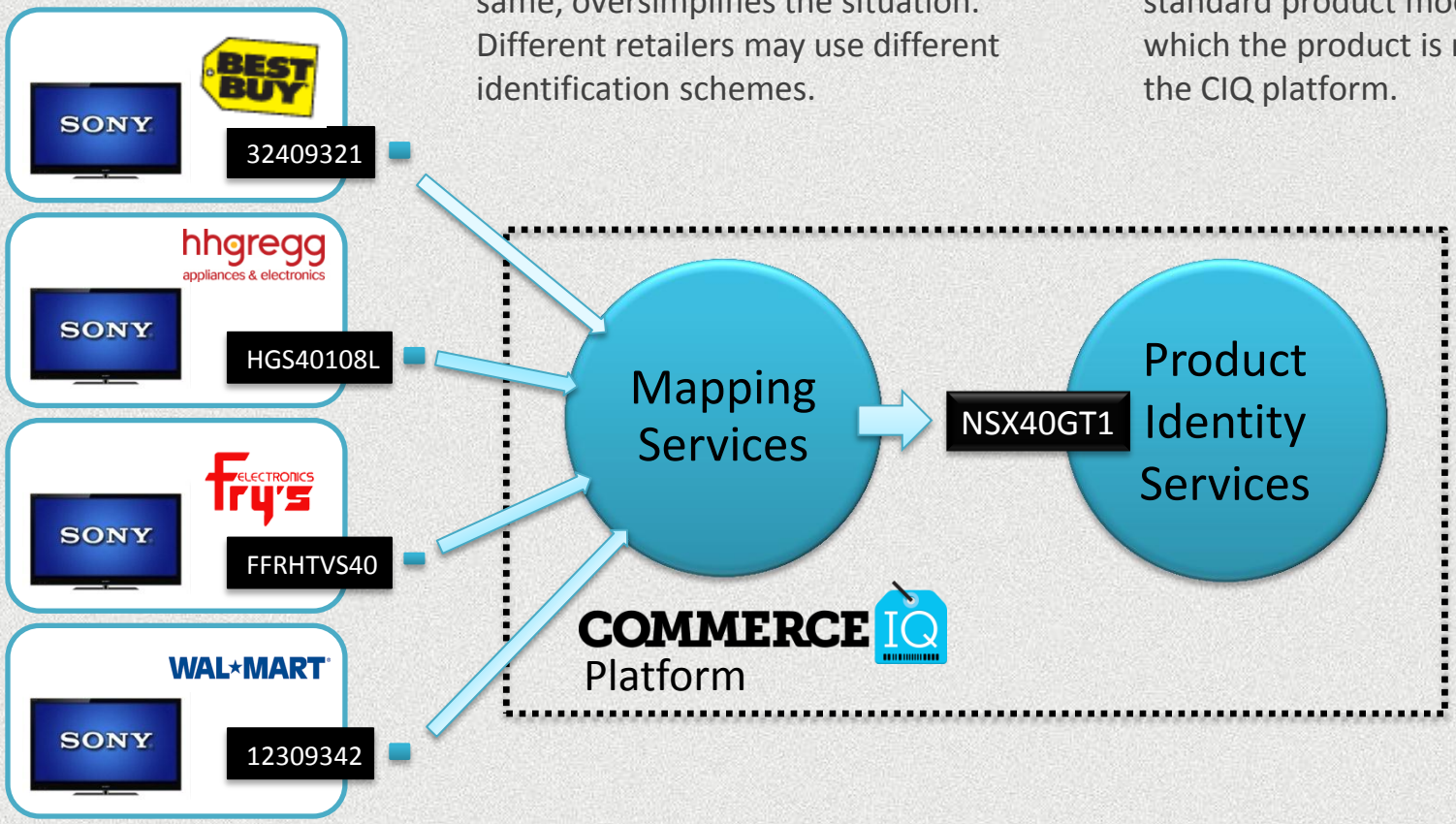
CIQ Product Identity Services

To assume that each retailer's product tag will use the same identifying number, even when the products are exactly the same, oversimplifies the situation. Different retailers may use different identification schemes.

The CIQ Platform uses a Mapping Service, the purpose of which is to transform a snapped tag to the standard product model number by which the product is represented in the CIQ platform.



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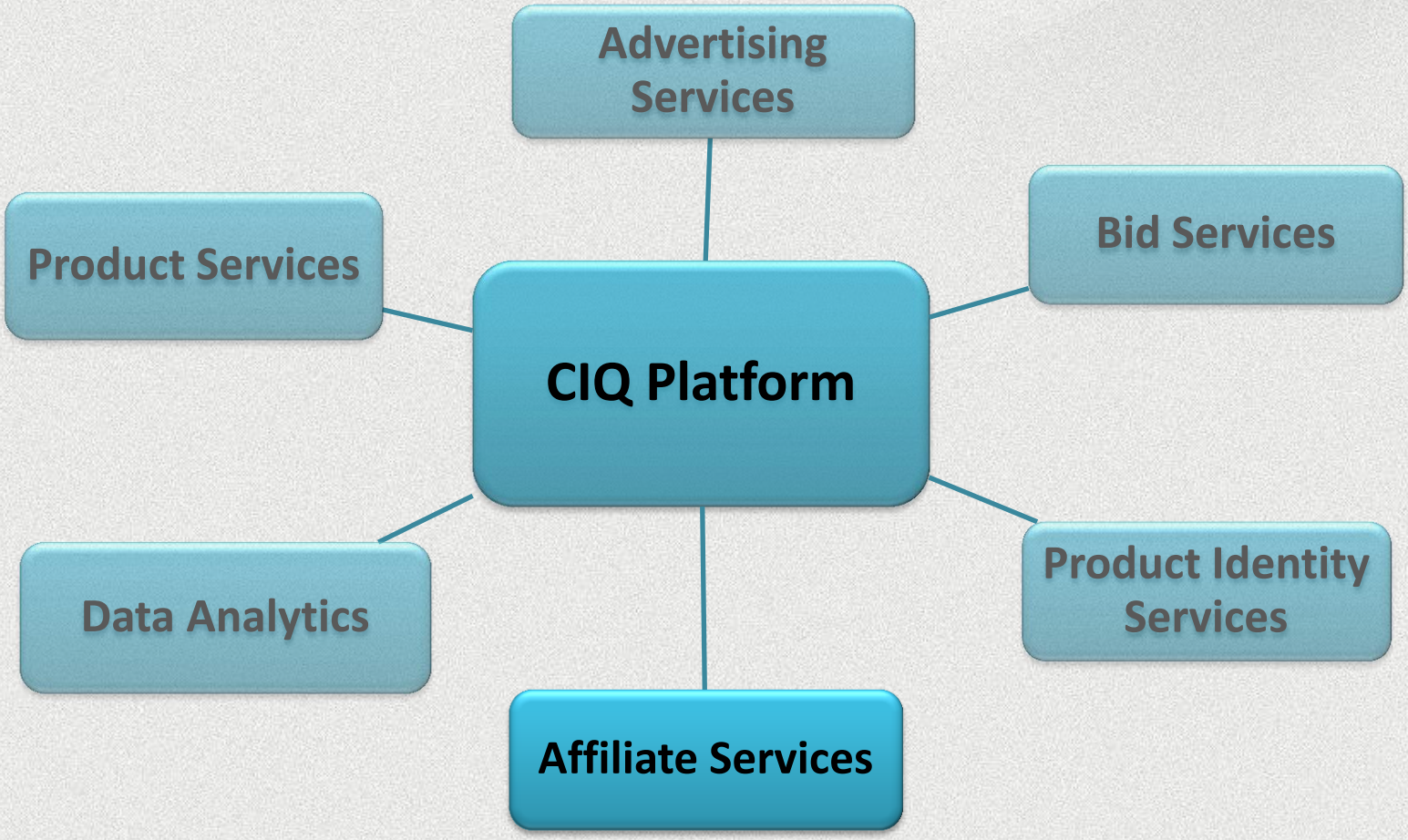
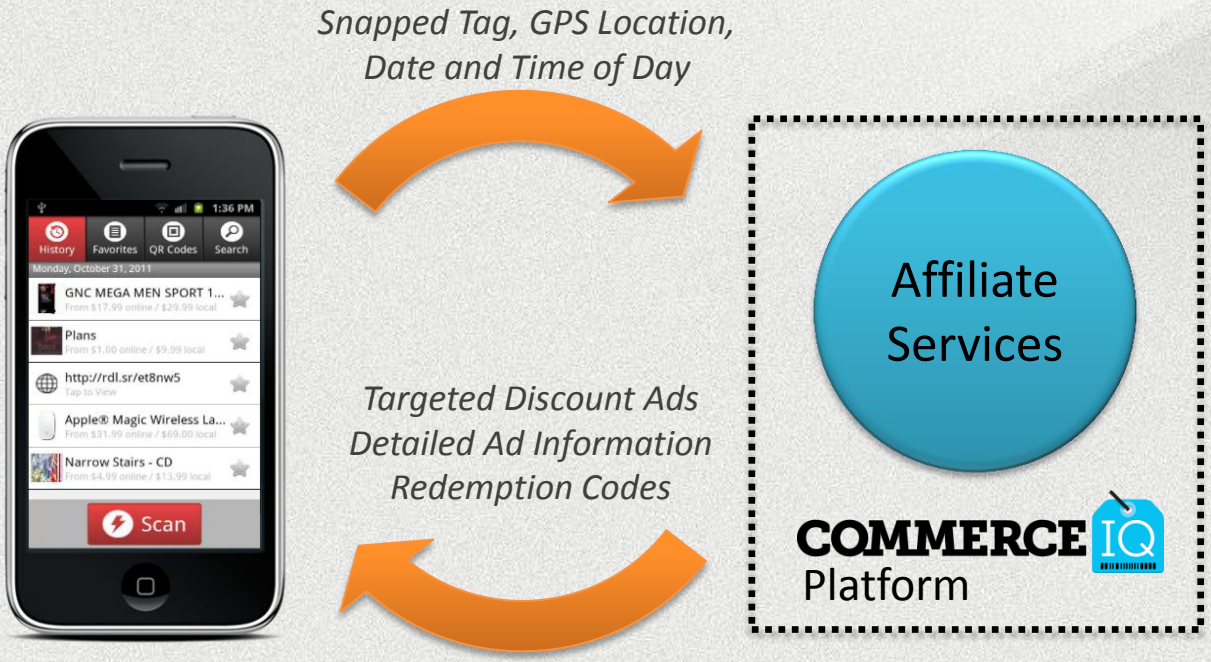
CIQ Platform Services



CIQ Affiliate Services



In the context of the CIQ Platform, Affiliates are vendors of smartphone apps that enable consumers to snap product tags and perform some valuable service with that information. Examples include providing detailed product information, comparisons with like competitors and web based retailer searches.

CIQ Affiliate Services enable smartphone apps to talk to the CIQ Platform, obtaining targeted discount ads from manufacturers in return for their sending location and tag information to CIQ.

$$ Affiliates use CIQ as a way to monetize their products and services since they share in the fees generated for impressions and discount redemptions.

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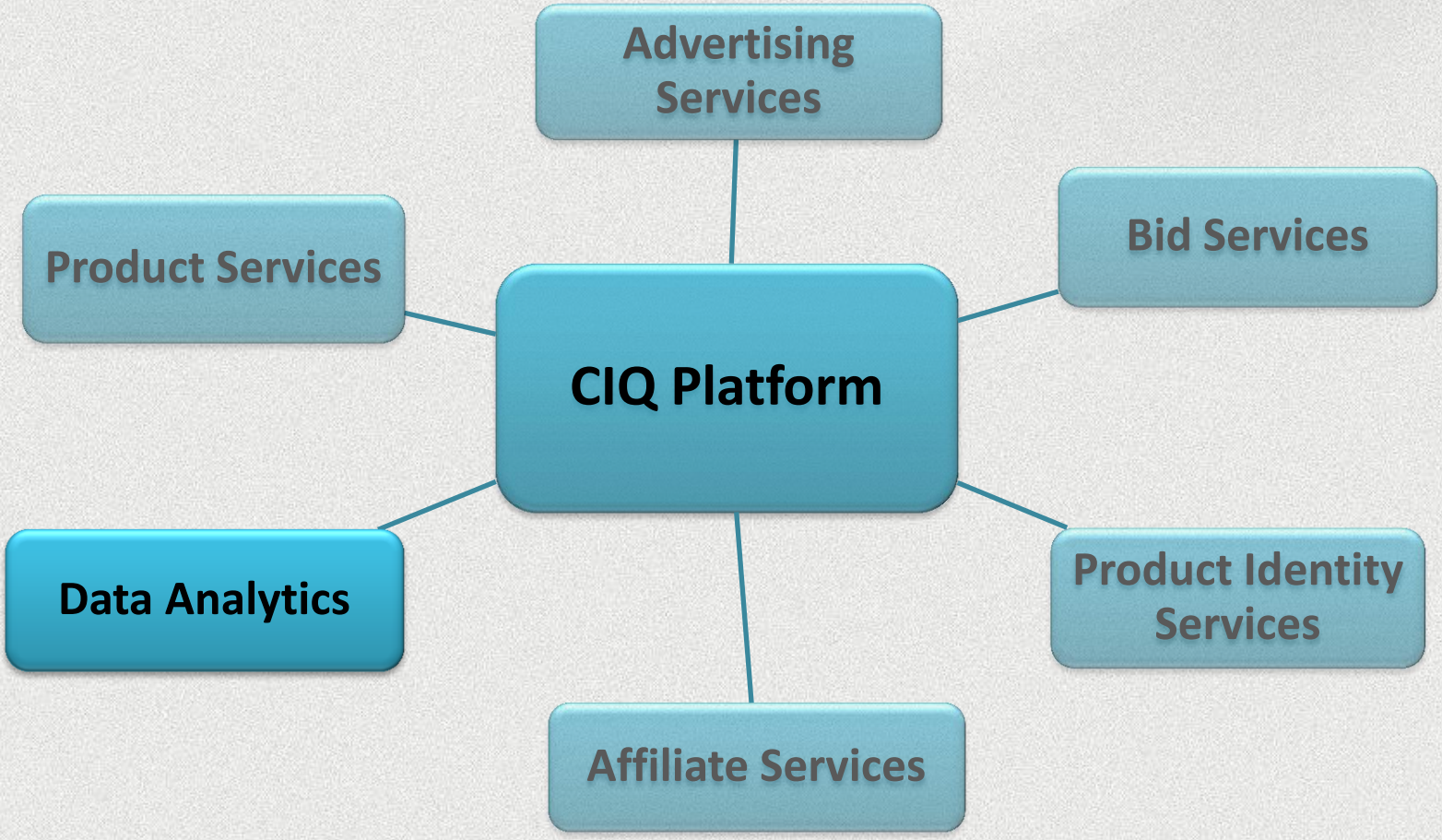
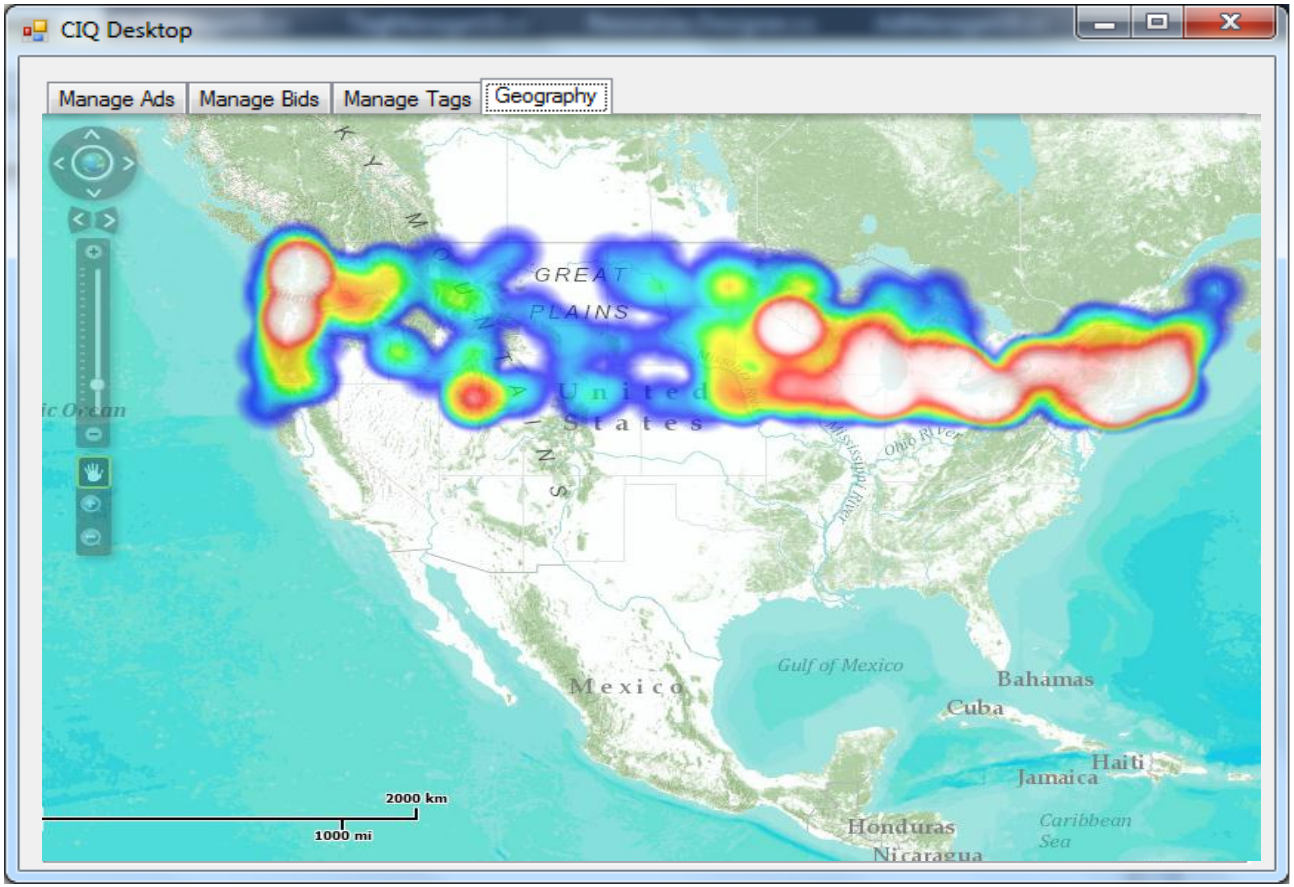
CIQ Platform Services



CIQ Data Analytics



The CIQ Platform captures the product code, location, and time of all tag snaps that occurred through affiliate smartphone apps.

So, for example an analyst can use a geographic map overlaid with markers (in this case a heat map) that represent the numbers and types of products scanned in various locations. The display can be filtered by retailer, product category, manufacturer and other interesting characteristics.

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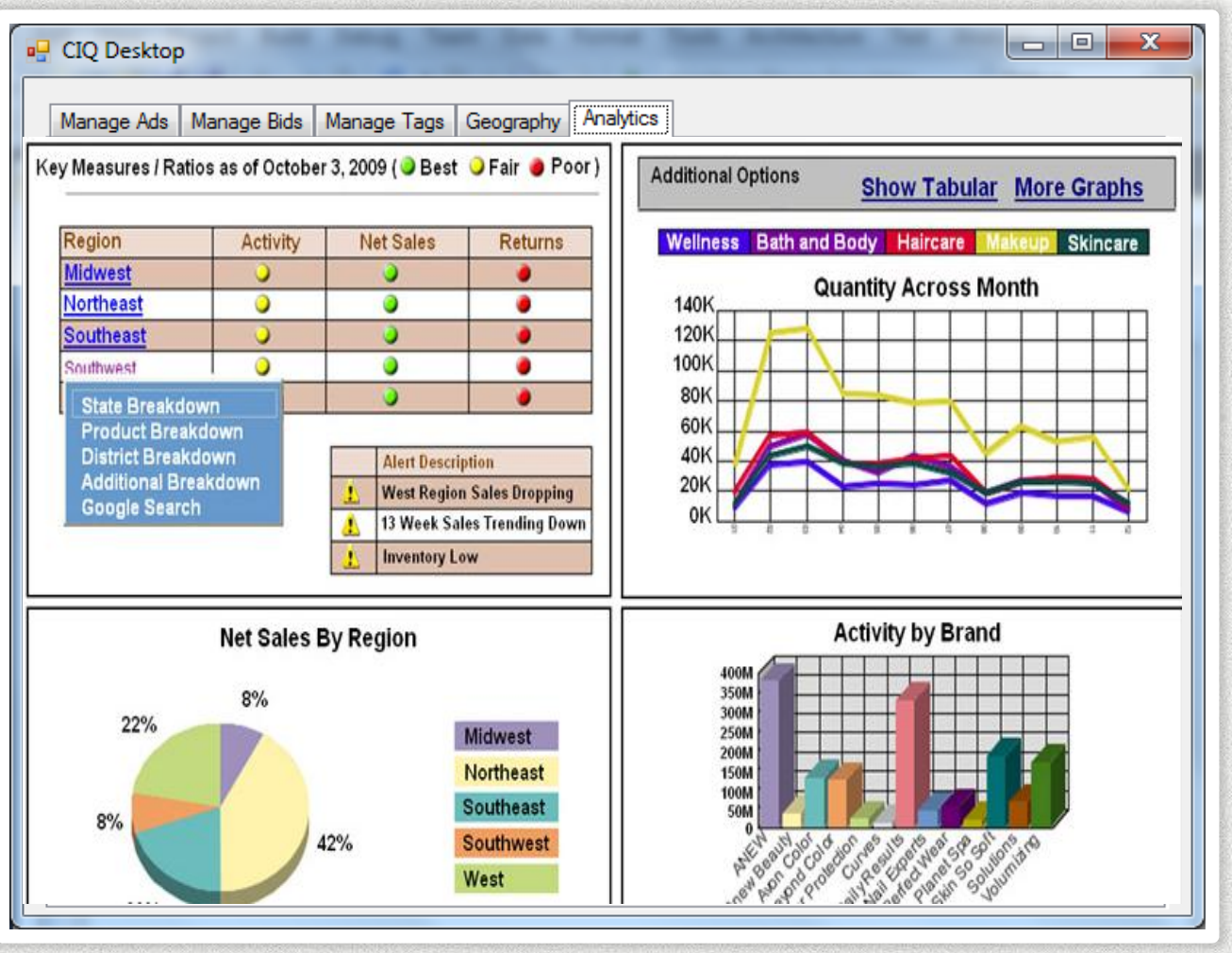
CIQ Data Analytics



A wide range of analytics can be performed using the scan and activity information that is available through the CIQ Platform.

Consider a scenario where a manufacturer tracks the number of scans that were made of her product, but where the purchase was lost to a competitor. Or conversely; she tracks the scans that were made of a competing product but where she won the purchase. In either case, she can see the discounts that win the deals.

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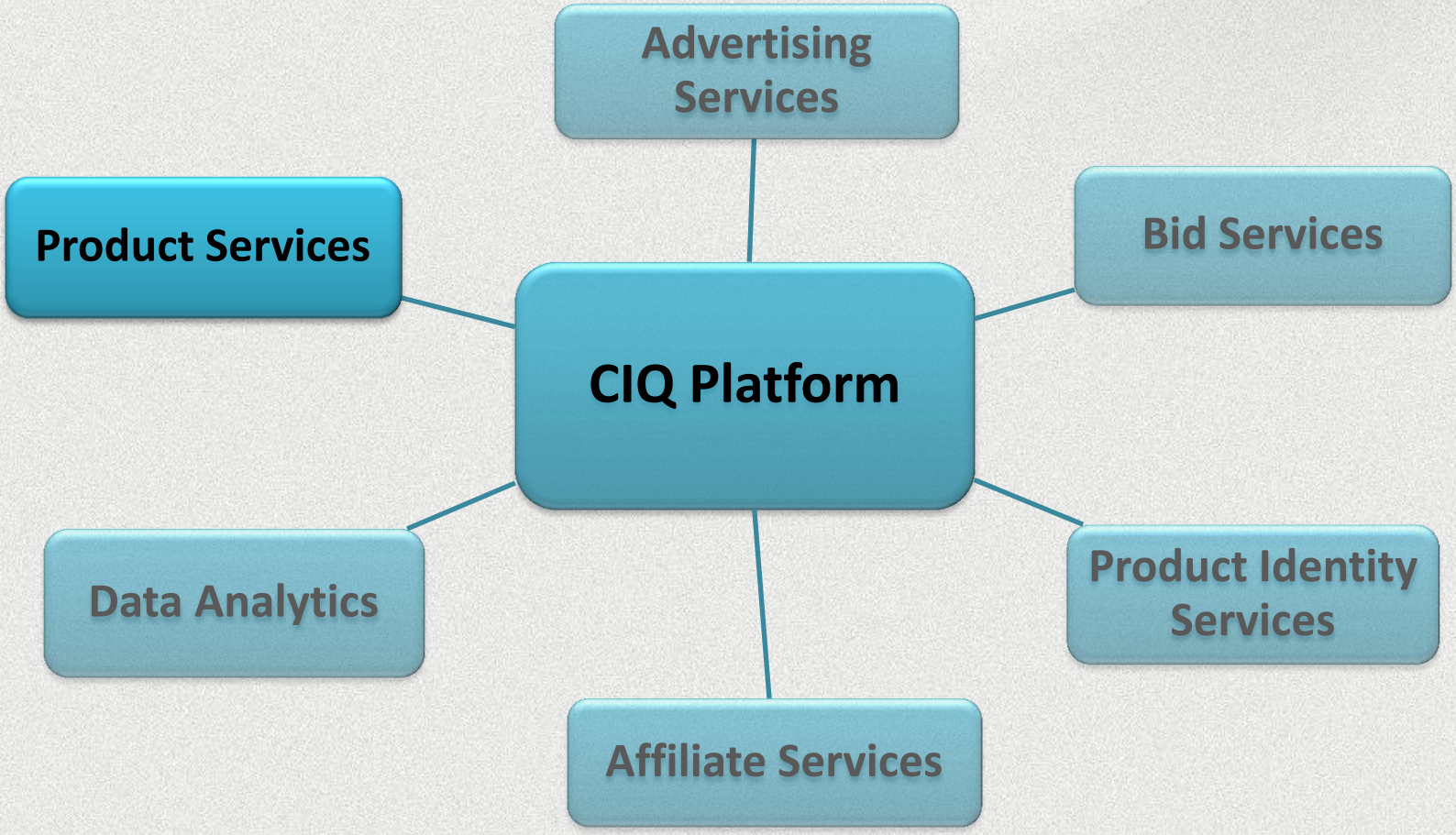
CIQ Platform Services



CIQ Product Services

Electronics				
	Arcade Equipment			
	Audio			
	Circuit Components			
	ommunications			
	omponents			
	Computers			
	Electronics Accesso			
	GPS			
	Print, Copy, Scan & Fax Accessories			
	Toll Collection Devices			
	Televisions	CRT Televisions		
		Flat Panel Televisions		
		Portable Televisions		
		Projection Televisions		
		Video Accessories		
		Video Editing Hardware & Production Equipment		
		Video Multiplexers		
		Video Players & Recorders		
		Video Servers		
		Video Transmitters		
	Video Game Console Accessories			

Category **"Electronics"**

Subcategory **"Televisions"**

Product Classification **"Flat Panel Televisions"**

Product Services are used in conjunction with other CIQ Platform services enabling a huge number of product types (aka product classifications) to be supported by the platform. Each product classification has its own descriptive properties and value ranges. For example, the properties that describe an HDTV (size, type, resolution, refresh rate) are much different than those properties that describe a refrigerator (capacity, width, height). Product Services therefore manage the vast product taxonomy along with valid values available for each property, and product storage and retrieval mechanisms.

There are numerous publicly-available taxonomies for commercial products that can be used by CIQ. One example is that from Google Merchant Services. Its important to understand that these product taxonomies are hierarchical so that the huge number of product classifications can be navigated easily. The CIQ Platform supports this hierarchy through its implementation of "Categories", "Subcategories" and "Product Classifications". On the left is a subset of the Google Merchant Services taxonomy for Electronics, labeled accordingly by Category, Subcategory and Product Classification.

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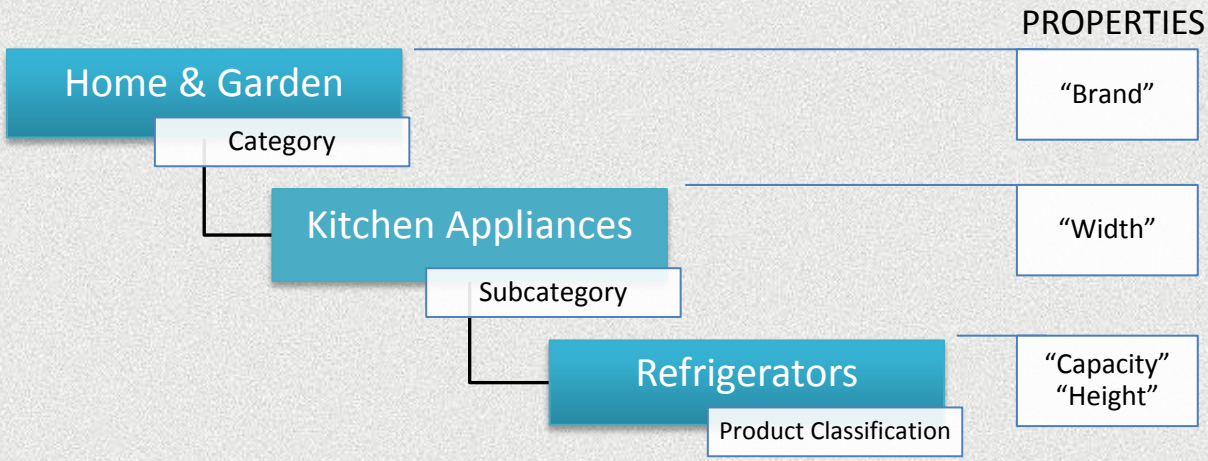
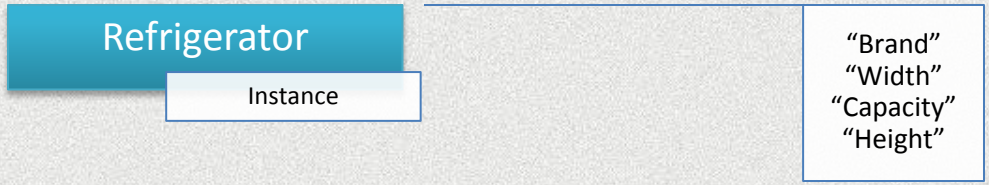
CIQ Product Services



Each product classification, for example "HDTV", "Refrigerator" and "Camera" have their own sets of properties which describe them. But some properties may be common across all products (for example "Brand"), or there may be common properties that are used to describe a subcategory of products (for example "Width"). These properties and their valid available values are part of the taxonomy and are managed by Product Services. Below is an illustration.

Given the above example, an instance of a "Refrigerator" used by the CIQ Platform will have the properties below.



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CIQ Product Services

During the process of defining bids and product identities, it's important that the products are defined in a consistent manner. This is another important aspect of Product Services. Just as each product classification is made up of properties, Product Services maintains a list of "valid values" for each of these properties. Consider the following:

HDTV

"Type"
"Size"
"Resolution"
"Refresh Rate"

Type	Resolution
Plasma	1080p
LED	1080i
LCD	720p

Size	Refresh Rate
1 – 20	60Hz
21 – 29	120Hz
30 – 39	240Hz
40 – 49	600Hz
50 – 59	
60 and Up	

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How the CIQ Platform Works

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