

# Etsy Online market analysis

## *Abstract ~*

In this paper I survey the operation and history of Etsy.com. An online marketplace focused on handcrafts and vintage items and was started with an anti-mass production attitude. In this paper I discuss the history of Etsy, their current operation strategies, some of their biggest challenges, and an analysis of their economics.

## **Introduction**

Etsy.com is an online marketplace started in 2005 dedicated to handcrafts and vintage items. When the founders, Robert Kalin and Chris Maguire, started the company they were driven by the goal of creating an online space where people could learn, buy, and sell. They believed that the industrialization and corporate control of shopping has degraded the experience for many people who have a higher preference towards handmade merchandise. They wanted to use the web as a medium to serve that population of art enthusiasts. Not only did they care about the sale transactions, but also they wanted to bring a community together that they believed was scattered across the country. And from that vision, Etsy.com started.

The platform is very similar to many other online shopping platforms. One subtle difference though is that the seller creates a virtual “shop” before listing items in their shop. So when a buyer is browsing Etsy, they can search for an item and when they click on what matches their query it takes them to the shop that has that item listed. In that shop page the user browses the item they selected as well as see other products in that shop and a clear display of who is the owner of that shop. Etsy also allows shops to enable a *custom order* option where the buyer can request specific items to be made for them.

Etsy allows sellers to list items in one of three categories: handmade goods, vintage items (20 years or older), and craft supplies. It costs sellers \$0.20 to list an item in their shop on Etsy for 4 months. Additionally, if a sale occurs Etsy collects 3.5% of the sale value and sends the remaining to the seller’s bank account.

Today, Etsy has 600 employees around six cities and five countries. The platform enjoys a user base of 40 million members with one million active shops and over 26 million items listed. In 2013, they collected \$1.35 billion in merchandise sale (of which \$47 million is Etsy’s revenue).

## **Current Business approach**

Etsy describes itself today as a “a marketplace where people around the world connect to buy and sell unique goods. Our mission is to re-imagine commerce in ways that build a more fulfilling and lasting world.”

The company focuses on building a strong sense of community between the buyers and sellers. Etsy invested in growing a community of users who are committed to remain on Etsy party because they can get value from it also because they would be comfortable with the way Etsy is run and enjoy this online community. On that end Etsy actively promotes that they are a *certified B corporation*.

B Corporation is short for a Benefit Corporation. Where a for profit company wishes to consider the society and environment, in addition to profit, in their decision making process. For Etsy’s case, their goal is to include social change and impact in their metrics of success. To that end, every year Etsy gets evaluated for it’s impact and releases an annual public impact report. In addition to the report, Etsy receives a “B score” that evaluates the governance, workers, community, and environment.

Another dimension of the community sense is how Etsy market its platform. Many users criticize Etsy for not investing enough in marketing their platform similar to what ebay or Amazon does. Instead, Etsy chooses to rely on the shop owners to get the word out about their products, which gives Etsy the publicity they need. Also Etsy organized many community events in the New York area in an effort to get the handcrafters’ community excited about this platform. They would often hold sewing contests, painting workshops, or community gatherings. They also allow the sellers to pay for keyword ads that direct to their shops.

## **Etsy members**

With the previous approach to their business, Etsy has succeeded in gathering more than 40 million members over the past 10 years. In the section we will explore the demographics of Etsy members. The following statistics are obtained from Alexa.com. Etsy is ranked the 164<sup>th</sup> most visited website in the world and 39<sup>th</sup> in the US. On average, a user would spend 10 minutes per day on Etsy. 70% of the visitors are from the United States, and followed by the United Kingdom (Etsy has offices in London) with a 4.5% of visitors.

Alexa also provides some interesting insights on the demographics of the platform visitors. All the following statistics are computed relative to the “internet average”. If a quantity is over represented that means on an average website we would see a lower ratio than on Etsy.

Gender		Education	
Male	Greatly Under	No college	Over
Female	Greatly Over	Some college	Over
Income		Graduate School	Under
0-30k	Under	College	Over
30-60k	Under	Browsing Location	
60-100k	Over	Home	Average
100k+	Over	School	Over
Ethnicity		Work	Under
African American	Average		
Caucasian	Greatly Over		
Asian	Greatly Under		
Hispanic	Under		

From the above summary of demographics, we notice a number of interesting insights. Etsy is more attractive to the high-income female population. It makes sense that the platform will attract the higher income demographic because the products are not necessarily cheap. The Etsy community believes mass-production is not a great option for their products, thus they sell at higher prices compared to comparable products. Higher income population is less price-sensitive and thus is willing to pay. The other interesting point I would like to make is the browsing location. We can see Etsy attracts more than average visitors from schools. I interpret this as Etsy.com being a fun website to visit. People are enjoying the surfing experience on Etsy that they are willing to spend their extra hours from school looking at interesting products. Which emphasizes the point about Etsy trying to change the shopping experience.

### Challenges

Throughout the past 10 years Etsy faced many criticisms and challenges. In this section, we will explore some of the most significant difficulties for Etsy. According to Kevin Morris, a reporter in the Daily Dot, Etsy's biggest challenge is complying with its own identity. Morris reports that when Etsy started as a platform to handcrafts and Do-It-Yourself products they started with a larger economical drawback. In theory, what Etsy would end up doing is living its own version of the industrial revolution. When a shop starts on Etsy and it does well, then it basically needs to leave Etsy in order to expand operation to keep up with the demand. Etsy did not allow merchants to outsource their manufacturing or hire more people to work with them. Etsy realized this was a problem and changed their CEO to soften their rules on homemade products. But doing so, a big portion of their community was affected by this new policy. After softening the policy,

many shops appeared on Etsy to resell mass produced merchandise that looks like handmade crafts. Some merchants would buy necklaces for 50c from a Chinese factory and resell them on Etsy for \$15. The problem of resellers started to grow ever since the company softened its rules. Etsy wanted to contain the growing stores and keep them in the platform, but also attracted resellers who are able to undercut the entire community of handcrafters and sell at low prices.

In May 2012 3500 stores on Etsy (about 1% of Etsy's total marketplace) closed store entirely for one day to protest having resellers on the platform. Etsy realizes this growing problem and have been dedicating growing resources into store inspections. If Etsy suspects a shop owner as being a reseller, they will conduct an investigation asking them to submit evidence that their product is of their creation. But as the number of stores and products grow on Etsy, it might be intractable to inspect millions of sellers.

At the end of the day, Etsy is faced with this challenge of understanding the incentives and economics of sellers and buyers. Sellers really like Etsy when they are small because it gives them the exposure they need to start making money, but once they gain the traction they are interested in growing their independent businesses and Etsy is not the perfect place to do that. On the other hand, buyers on the platform are supposedly interested in handmade products and are willing to pay a markup on them for the authenticity. But once a similar product shows up with a lower price they will shift towards it forcing the original crafter to a Bertrand competition with the reseller (a one doomed for failure for the hand crafter). Etsy is trying hard to hold some standards of quality on its platform, but they need to come up with a creative and cost-effective way to do so.

### **Social Platform**

One interesting method Etsy is applying to ease combating the problem of reselling and quality control on Etsy is involving the users in the process. Since Etsy started, users are able to flag and report merchandise that does not satisfy the standards of the platform. This functionality is available usually on most e-commerce platforms as it is a means of collecting customer feedback on the products. But Etsy realizes that user reporting is not going to be enough to combat quality control on the website because they have much harder standards to detect. Instead, Etsy is trying to allow the buyers to self-select around high-quality markets. A user can follow a store or another user. The idea is that you will follow someone with similar taste to yours or simply someone who you think has a good artistic eye. Those users with large followers can drive the demand from the lower quality stores to the higher quality stores. In order for users to gain more followers they will individually spend more time conducting their own quality control on different stores and product. And when those important users shop from a store then they drive more customers to it, thus stores will try to impress those users. Etsy is hoping to utilize this cycle to drive the quality of its products higher and drive away the resellers on the platform.

## Key Events:

Below is an overview of the key events Etsy went through up until October 2013

June 2005	• Website launch
2005	• Robert Kalin as CEO
2008	• Maria Thomas as CEO
2009	• Robert Kalin as CEO
April 2009	• Users organized an “etsyday” promotion on twitter
March 2010	• Etsy is profitable
July 2011	• Kalin fired and Chad Dickerson as CEO
April 2012	• Big online scandle on Etsy overlooking resellers
October 2013	• New policies allowing selling to partner with third party manufacturers

## Market Analysis

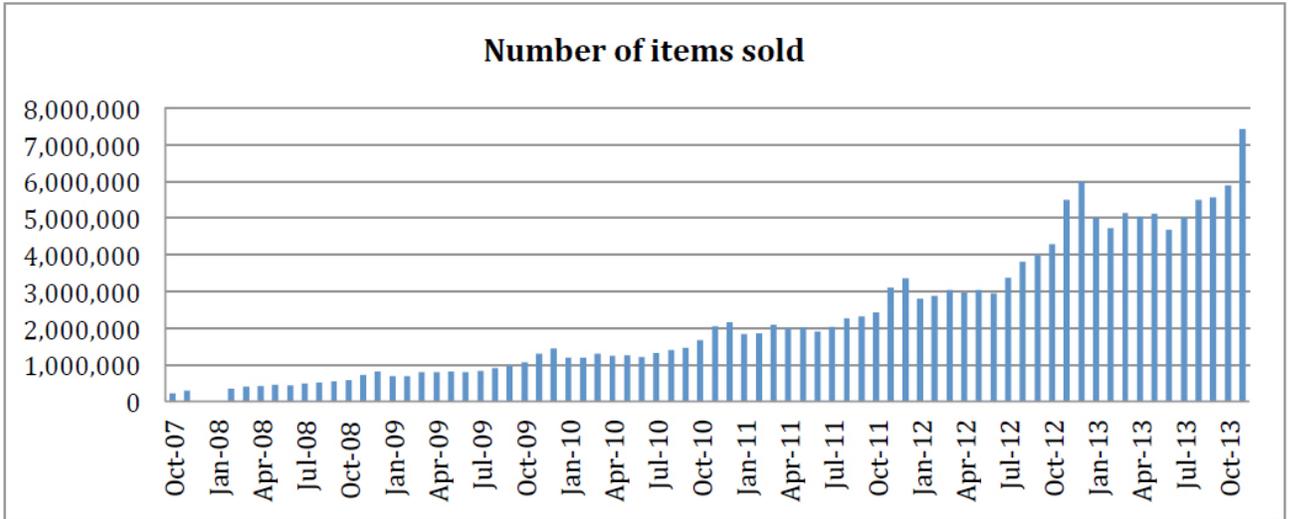
In this last section, we would like to explore the economics of the Etsy platform. From October 2007 until November 2013 Etsy staff has been publishing an “Etsy Weather Forecast” on their blog. Each blog entry summarizes the company’s performance across five different dimensions:

- 1- Number of items sold that month
- 2- Value of items sold that month
- 3- Number of new items listed that month
- 4- Number of new members joined that month
- 5- Page view count for that month

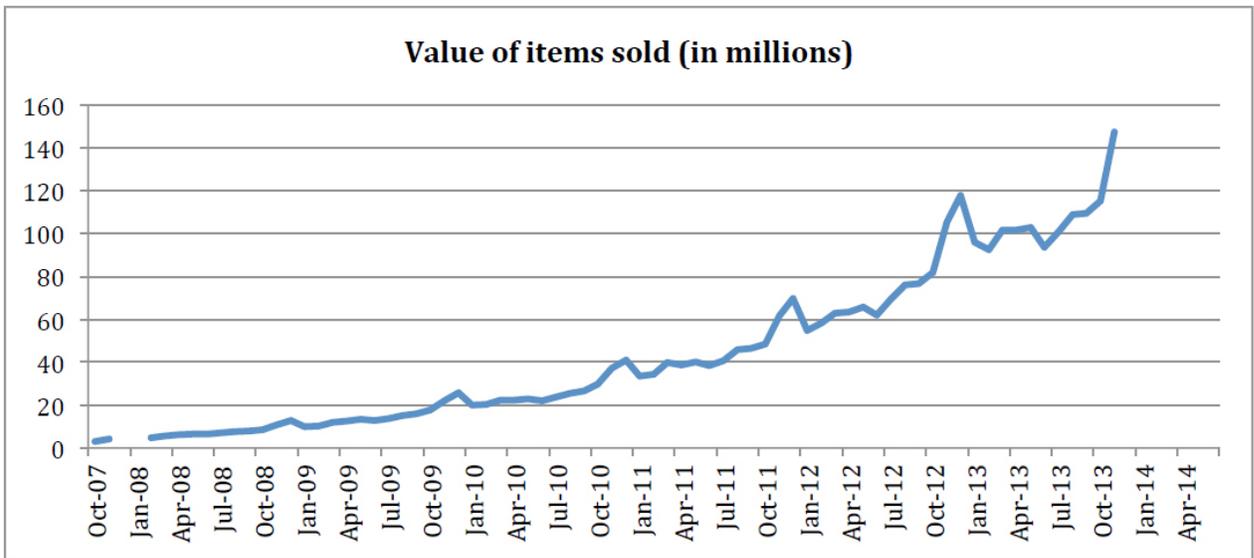
I went through all the blog entries from 2007 until 2013 and collected all that data<sup>1</sup>. Below are those five different dimensions plotted against the months.

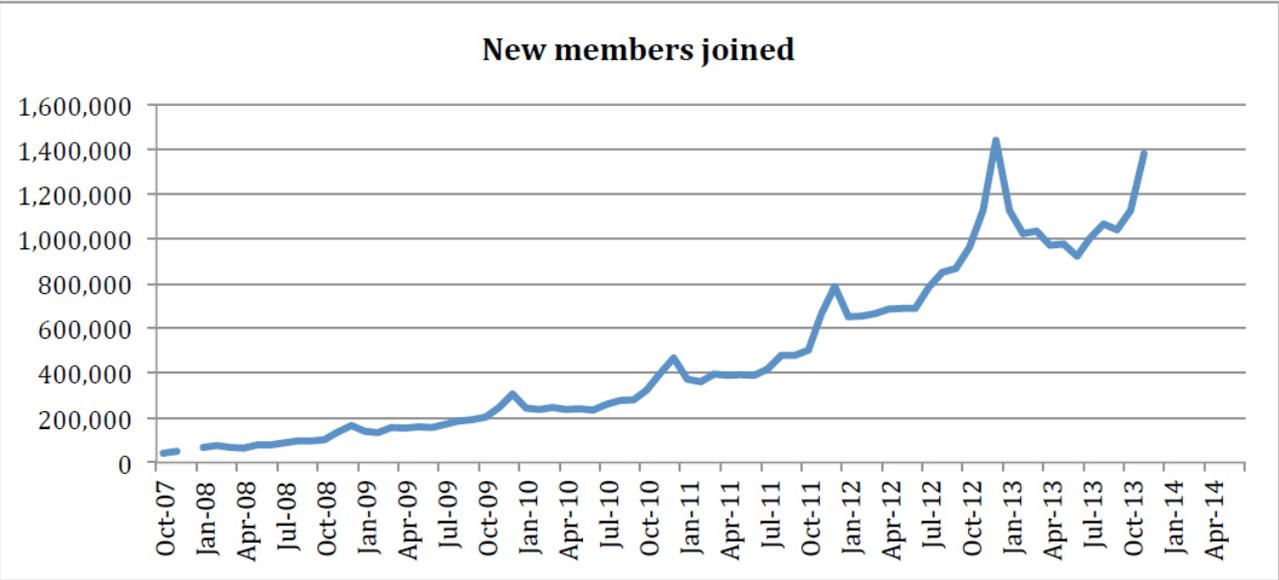
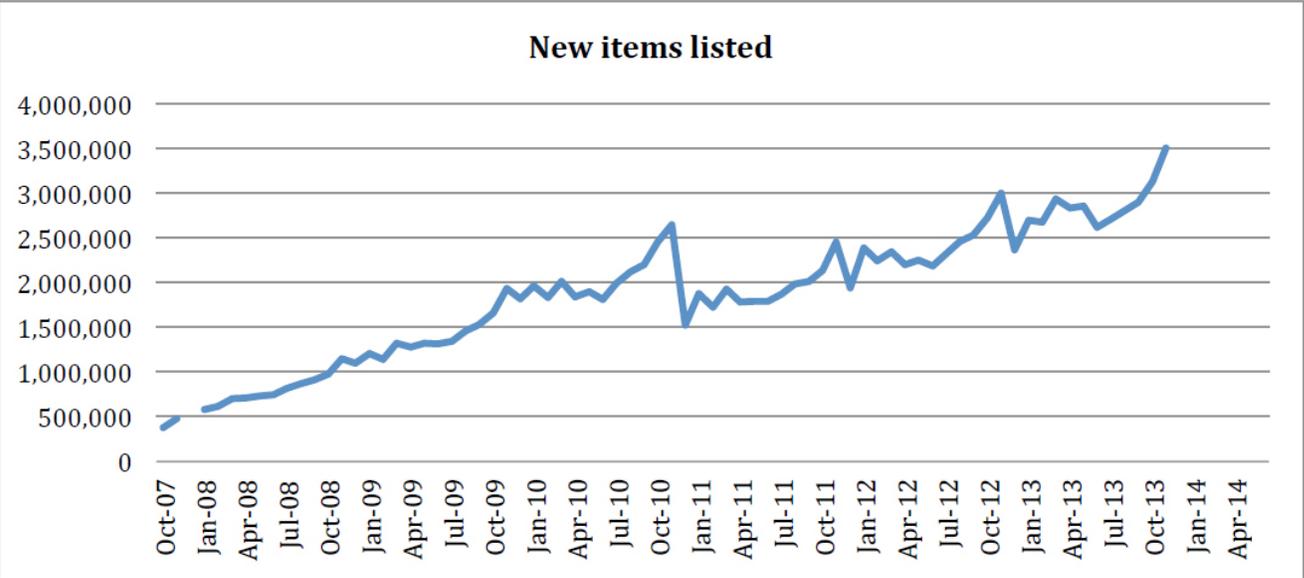
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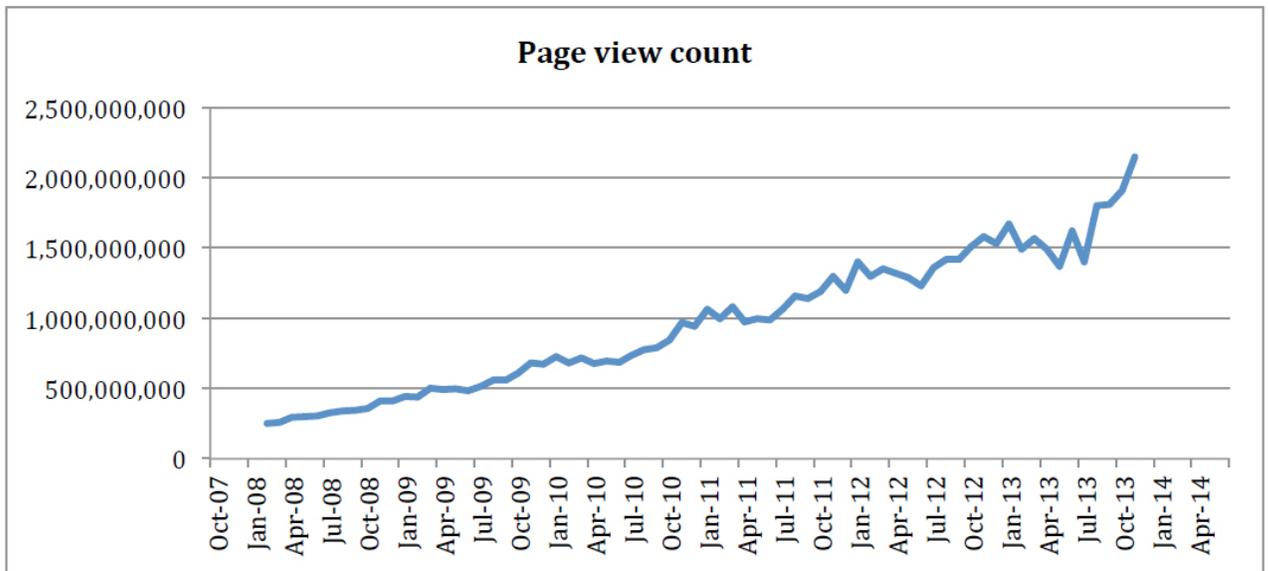
<sup>1</sup> The raw data is available for research.



In this plot we see the number of items sold each month on Etsy. We can see that up until 2013 Etsy has been experiencing an almost exponential growth in sales. In fact, for all the other four dimensions a similar growth can be observed. Which makes sense since all the dimensions are highly dependent.

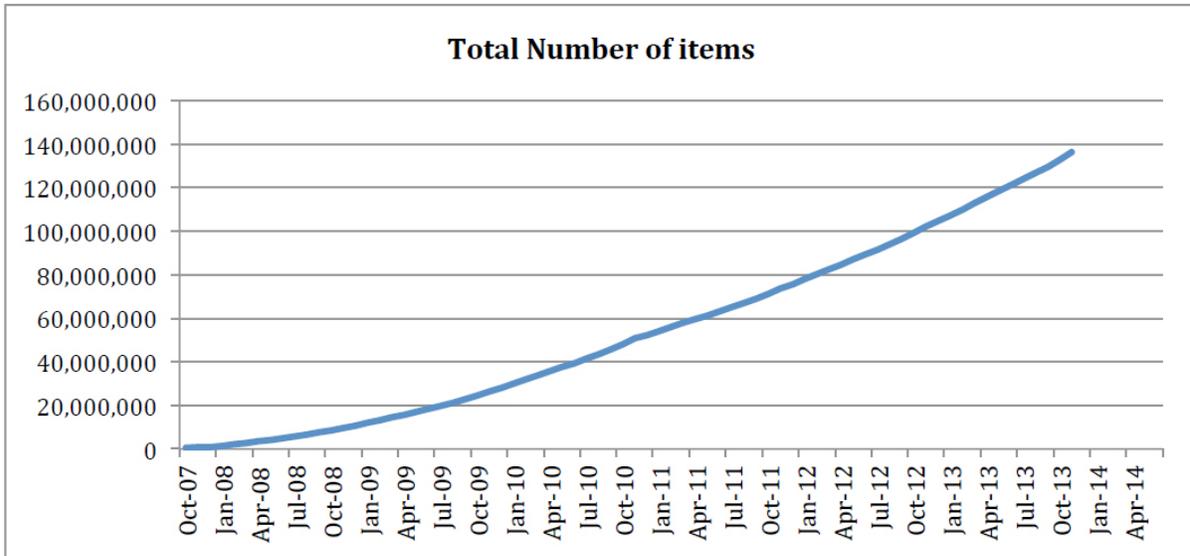






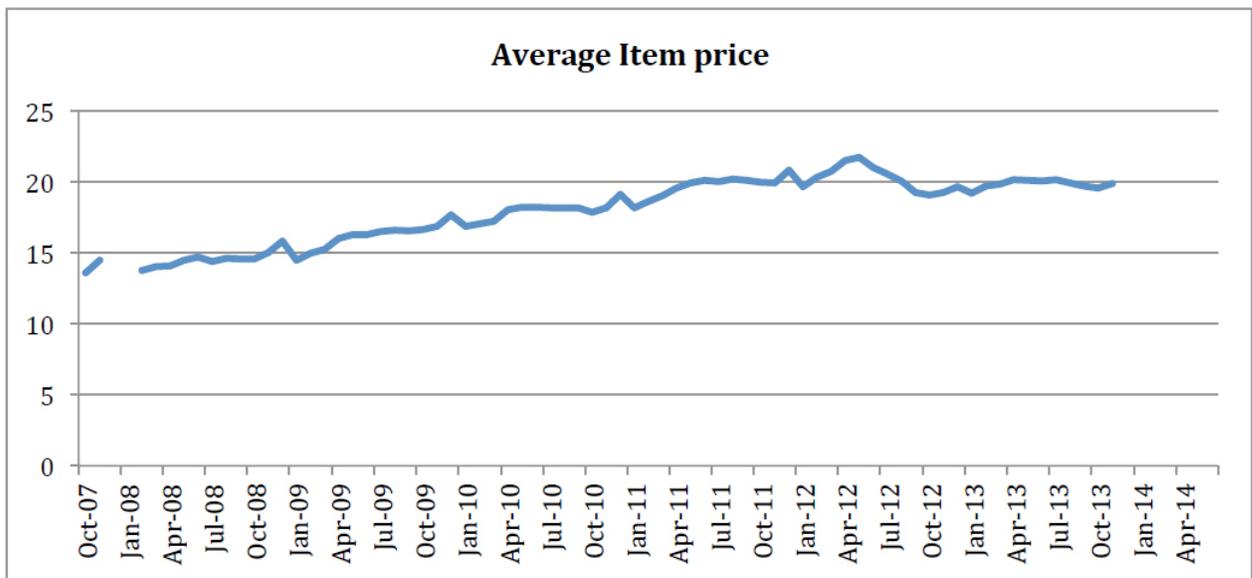
The first thing that grabs our attention in these plots are the peaks in holiday seasons. Across all the five dimensions there is a significant increase of demand in November, December and January compared to the rest of the year. All of categories are maximized of December every year except for the “Number of New Items Listed” which is maximized in November. That is a reasonable observation since sellers will be anticipating the surge in demand and thus populating their shops with more products to be bought in December.

The previous summaries are of the data provided by Etsy on their blog. From that data, there are a number of interesting derived quantities. The first thing we want to look at the number of items listed on Etsy over time. To obtain this quantity we simply added the number of new listings every month ignoring items that run out of inventory or items that are expired in listings.



We can observe the rapid growth in item listings at a growing rate.

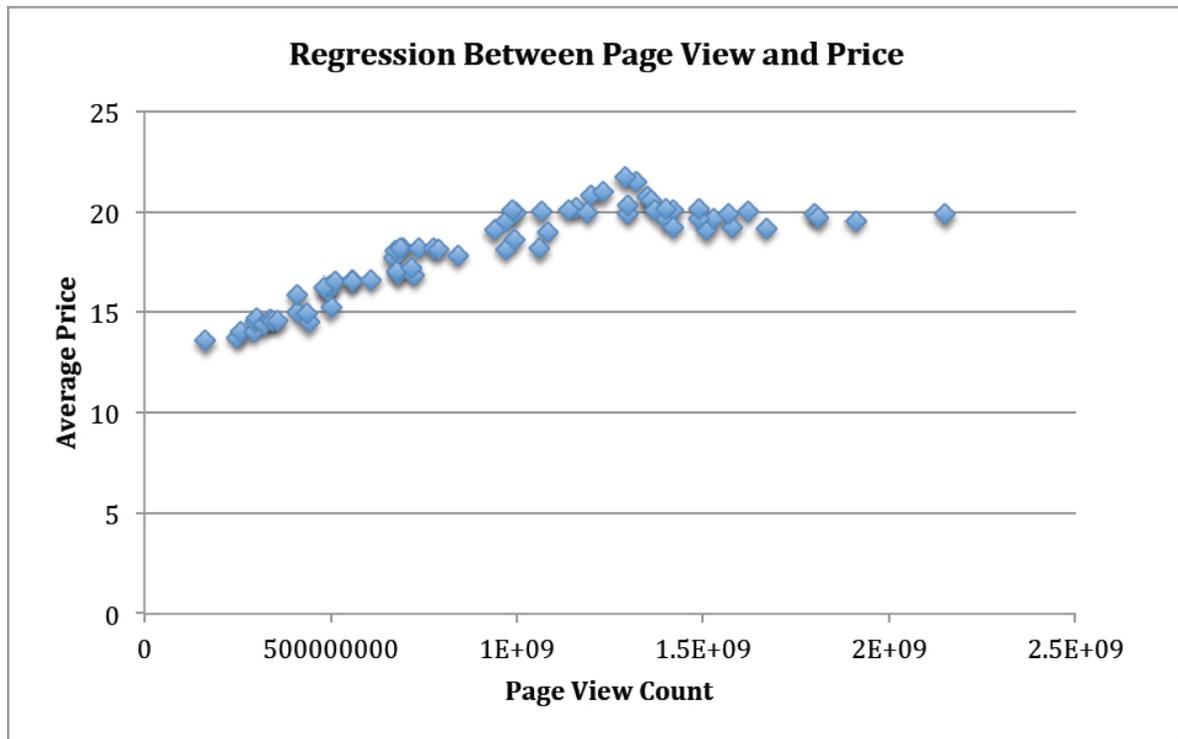
Another quantity of interest is the average price of an item on Etsy over time. We have data on the number of items sold for each month and the value those items were sold for. So we can compute the average for each month get the following results.



Although the change is not significant, we can see an increase in the price of items over time. As one would expect, holiday seasons would notice a higher average price than the rest of the year. One point of interest in this plot is April 2012, which is the maximum the average price has reached. We notice that after April 2012 the price lowers a little bit and stays constant. Looking back at the company's history, we find that in April 2012 there was big online scandal on Etsy overlooking resellers on the platform. Many online

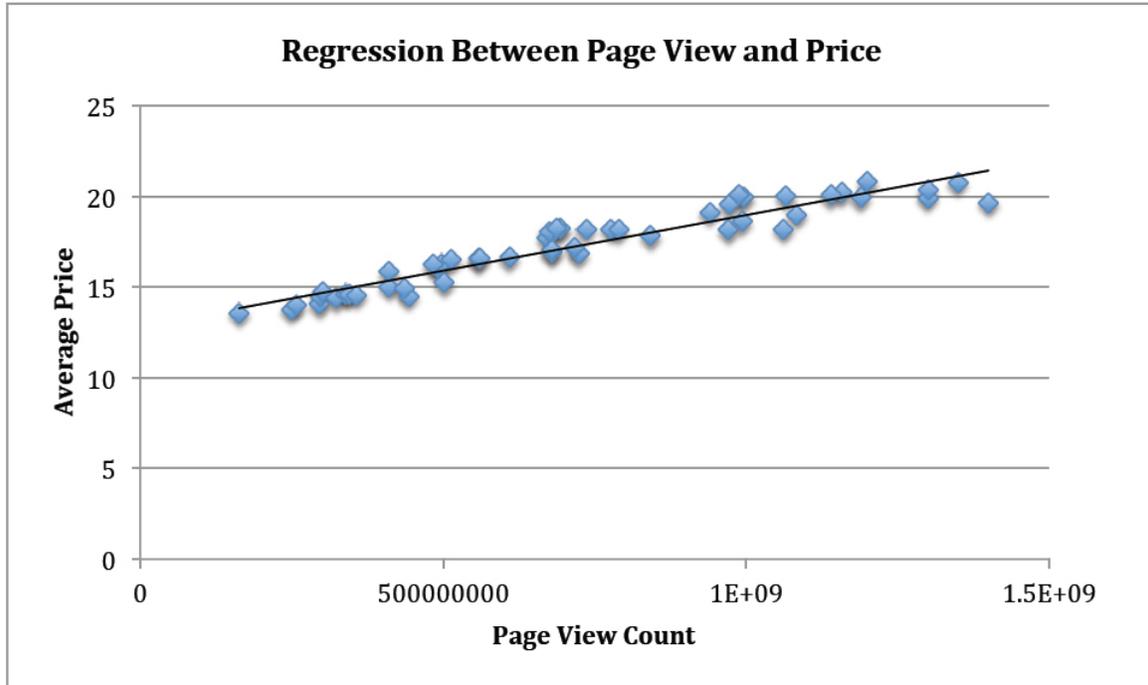
bloggers scraped Etsy's pages and wrote about products they believed to be mass-produced and resold on Etsy. One potential explanation is that the scandal caused a decrease of demand on Etsy products thus driving the price down. But the other statistics shows us that there was not a significant decrease in number of items sold, page view, value of items sold, or new members joining the platform. Which suggest that perhaps all the scandal did was attract the attention of resellers online to the ability to make high margins of profits on Etsy leading to a more severe competition between the sellers and the resellers, which drove the price down.

As a proxy for demand, we will look at the page view count and see how it relates to the average price of an item. The first thing we did is compute the correlation coefficient between the average price and the page view count and found it to be **0.85** suggesting a string correlation. Then we wanted to quantify that correlation with a linear regression between the two



We can see that there is a clear linear regression up to a specific point in the page view count. After which the price does not change as the page view increases.

We performed linear regression on the linear part of the relation and discarded the constant part.

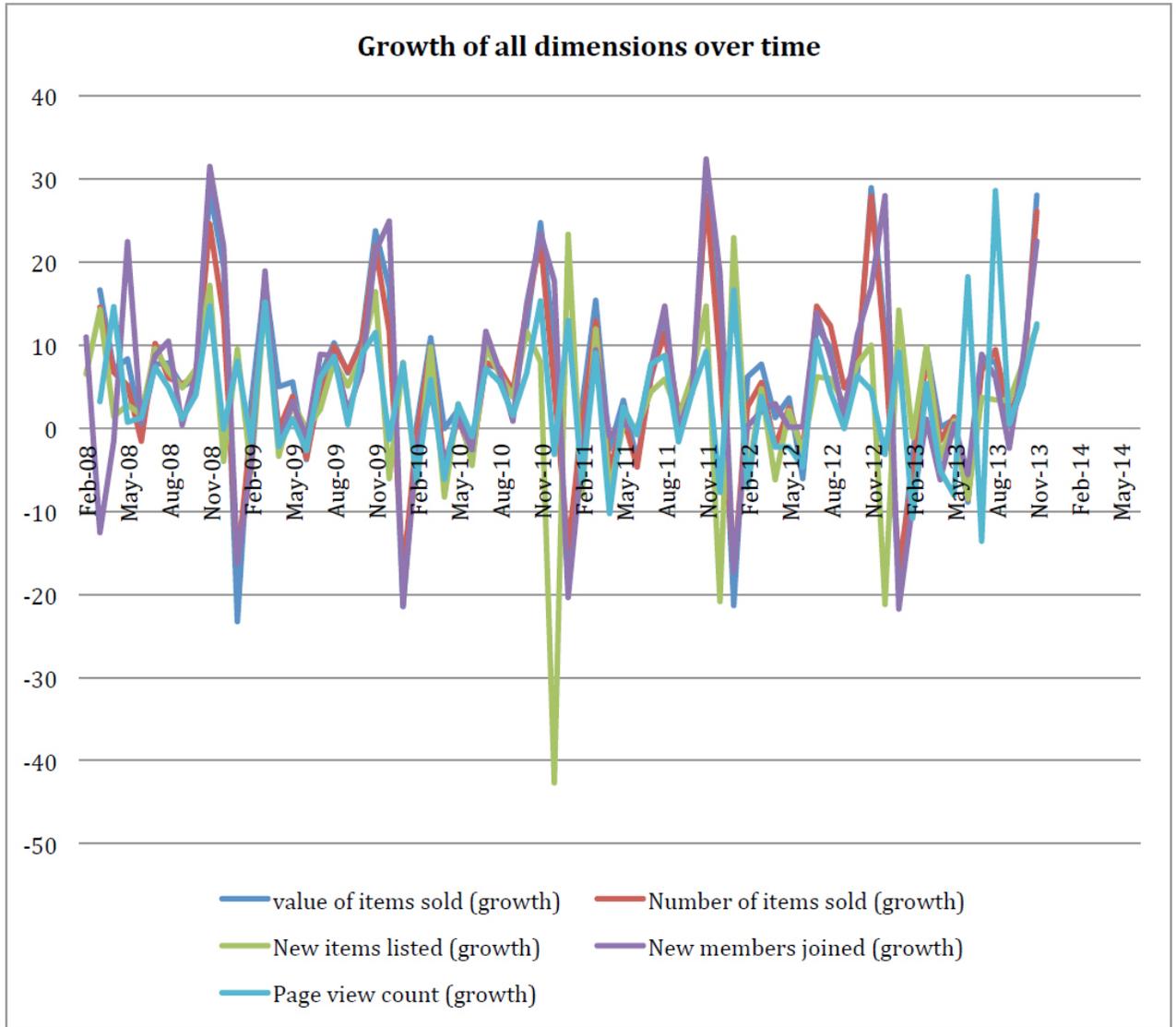


That regression results in the following relation:

$$\text{Price} = 6 \times 10^{-9} \text{Page} + 12.836$$

This behavior is a complex behavior and for sure the above regression is a simplification that ignores all the other dependencies. That constant part of the plot suggests those other dependencies are at play. It can be explained by a counter effect of one of the hidden variables or by simple saturation effects.

This last graph plots the growth in each one of the dimensions over time. The main takeaway from the plot would be the high level of dependencies between all the variables. Some have higher dependencies than others though. For instance we expect the value of items sold to go up as the number of items sold go up, but that's not as clear between the number of items sold and the number of new items listed. The plot below shows that some of the variables are highly correlated while other can be more loosely correlated and grow at very different rates.



Unfortunately the data provided by Etsy stops in October 2013 and that is the month Etsy introduced its new outsourcing policy. I would have been interested to study the effects of that policy change on the performance of Etsy.

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