

PIPX Intellectual Property Sector Index Q1 2017 update

Kevin Klein
6 April 2017

Composition and description of the PIPX index

The PIPX index is designed to provide a measure of the market value and hence the health of the intellectual property licensing business. The index consists of 12 companies with a primary focus of licensing and enforcement of patent intellectual property. The companies included in the index are listed in Table 1. In addition to a focus on intellectual property, there are two additional criteria for inclusion in the index. The first is that they must be publically traded companies, so that a market value can be established for the company on a daily basis. For this reason a number of prominent intellectual property licensing companies are not included, such as Intellectual Ventures, Conversant, and IPNav. The second is that they must also have a market capitalization greater than \$100M in order to provide a level of stability and minimize the number of companies popping into and out of the index. This excludes some smaller companies that may be added to the index later if they grow to and maintain a market capitalization of greater than \$100 million. Many of the companies' market capitalizations have shrunk below \$100M since being added to the index.

Table 1 – Intellectual Property Licensing Companies Included

Acacia Research	Interdigital	FORM Holdings	VirnetX
Wi-LAN	Xperi	Rambus	RPX
Parkervision	Pendrell	Neonode	Marathon

The index is a capitalization-weighted price-return measure of the change in value of this segment of publically traded companies. The effect of dividends and daily changes in the number of shares outstanding are not included. The index is initiated with a value of 100 on July 1, 2011. This date was chosen to avoid what would be several significant disruptions to the index, namely the RPX initial public offering in May 2011, the initial listing of Wi-LAN on the NASDAQ in April 2011, and the taking private of MOSAID in Oct 2011. Unwired Planet was part of the index until the end of Q2 2016 at which point it was removed due to its exit from the IP business. Tessera has been part of the index since inception but recently changed names to Xperi.

Figure 1 shows the performance of the PIPX index starting from July 2011 through March 2017. Somewhat surprisingly, given the amount of interest and attention provided to IP licensing in recent years, the index trends down from July 2011 to about the middle of 2012 and from there has been relatively flat until summer of 2015 when it started trending down again. This performance stands in contrast to that of the broader economy and of publicly traded companies in general. It appears that the PIPX index may have bottomed out in early 2016 and is starting to recover. The PIPX showed strong gains in both Q3 and Q4, significantly outgrowing the S&P 500 Index. However, Q1 2017 shows a return to the PIPX lagging the S&P 500 index.

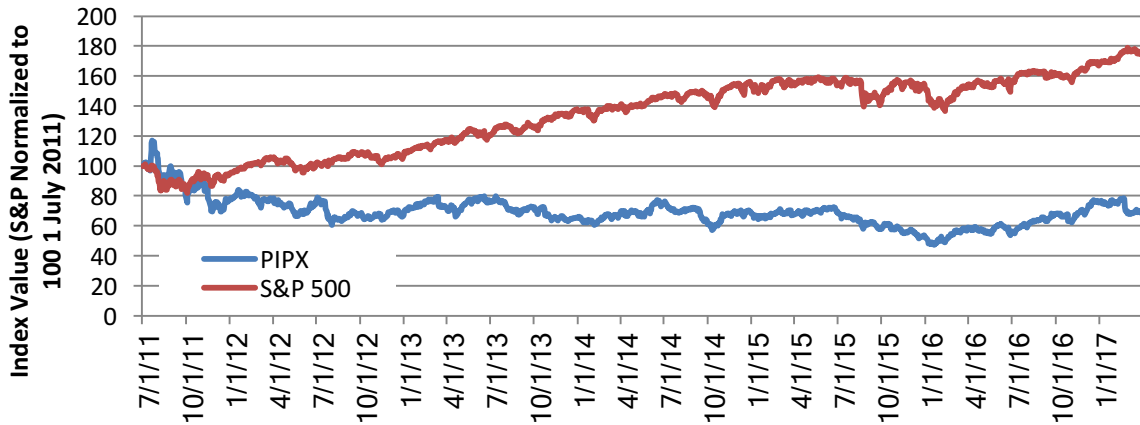


Figure 1 – Comparison of PIPX to S&P 500 (S&P 500 normalized to 100)

Q1 2017 Update

For Q1 the PIPX index was down 8.7% after being up in Q3 and Q4 2016. This compares to an up 5.5% quarter for the S&P 500 as shown in Figure 1. The change in value of the component companies over Q4 is shown in Figure 2, ranging from 61.4% for Wi-Lan to -40.7 for Marathon.

Figure 3 compares the quarter on quarter change in value of the PIPX and the S&P 500 since the PIPX inception. After substantially outgrowing the S&P 500 in Q3 and Q4 2016, Q1 saw the PIPX decrease while the S&P 500 increased. The value of \$1 invested in the S&P 500 in Q3 2011 would now be \$1.76 while the value of the same \$1 invested in the PIPX would be \$0.69.

Figure 4 shows the contribution of each company, positive or negative, to the overall -8.7% change in the weighted index for Q1. For Q1, gains in RPX and Wi-Lan substantially all the positive movement in the index, and was heavily outweighed by large decreases in valuation at Acacia, Rambus, Interdigital, and Xperi. carrying the index to a substantial loss.

Interdigital, Xperi, and Rambus continue to make up the lions= share of the index. These three companies accounted for 37% of the total value of the index at the inception in 2011, today they make up over 80% of the total value of the index. Interdigital alone now accounts for over 40%, up from 15% at inception.

Percentage Change Q1 2017

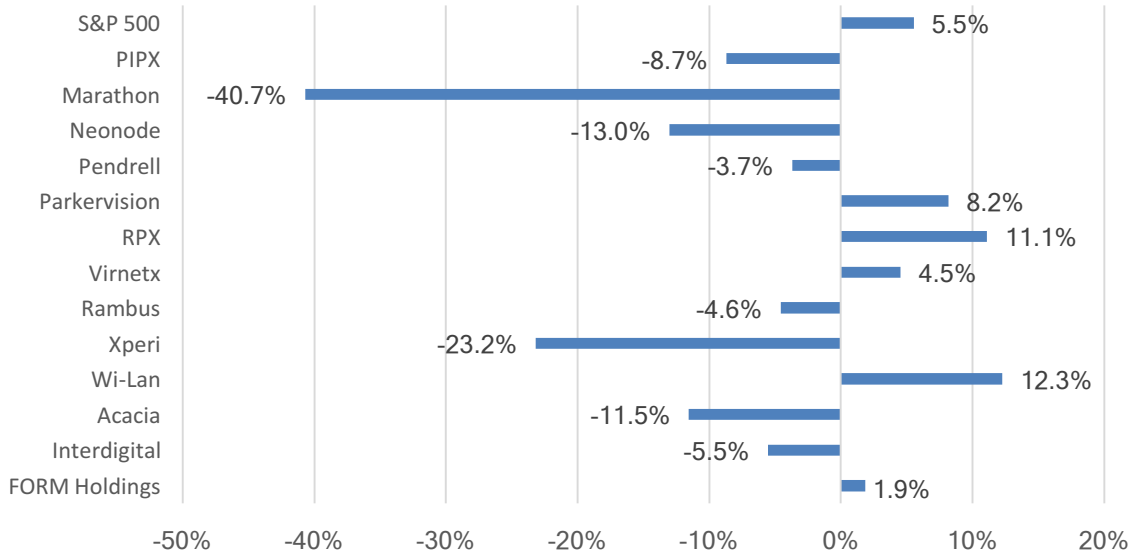


Figure 2 - Change in value of component companies and PIPX Index – Q1 2017

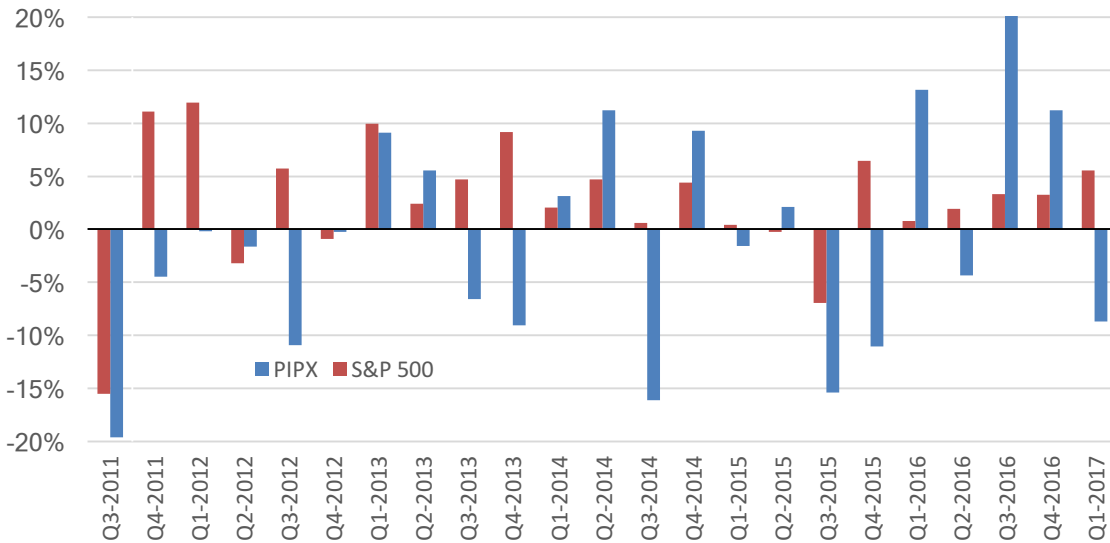


Figure 3 – Comparison of quarterly change in value of PIPX Index and S&P 500

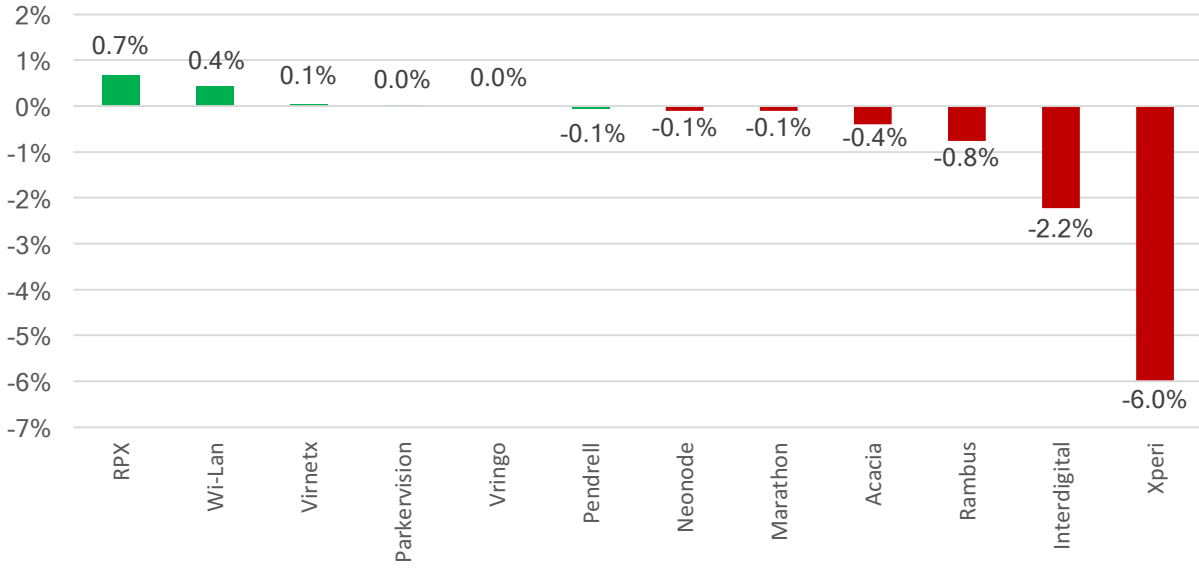


Figure 4 - How much each component company changed the PIPX Index – Q1