

Q1 2016 Public PAE Report

Table of Contents

Introduction	3
Key Findings	4
Methodology	5
Market Data	7
Financial Data	12
Patent Transactions	22
Litigation Data	28
Profiles	35
About RPX	46

Introduction

Publicly traded patent assertion entities (“PAEs”) are a relatively recent phenomenon. Over the past few years, the proliferation of public PAEs has cast some light on the ways in which PAEs seek to earn revenue based on their primary factors of production—capital and patents.

Over the past four quarters alone, the public PAEs detailed in this report have raised over \$54 million in the debt and equity markets while spending more than \$102 million on 14 patent portfolios. The acquired patents, which relate to a variety of sectors, will likely be enforced by the PAEs.

Even with all of this activity, the public PAE industry is still considered too niche to have widespread, comprehensive coverage by sell-side equity analysts who independently research and analyze companies to generate investment recommendations. The dearth of insight into these companies has enabled a contingent of speculators and day traders who opine—often incorrectly—on what legal developments will mean for the prospects of future settlements or revenue for these companies.

In addition to the lack of sell-side coverage of PAEs, the art of analyzing public equity markets and SEC filings is generally not a core strength of many IP professionals, putting them at a disadvantage when encountering public PAEs as counterparties in patent transactions and/or as potential courtroom adversaries.

Since its inception in 2008, RPX has striven to increase transparency in the patent markets. To that end, this RPX Public PAE Report offers analysis of public PAEs and provides summary statistics for a variety of metrics relevant to the public market, including financial performance and enforcement activity. The goal of this report is to deliver comprehensive information that gives IP professionals unique perspective on public PAEs.

Key Findings

Note: Aggregate figures and counts are relative to the 24 public PAEs detailed in this report.

- Taken as an index, public PAEs have outperformed the NASDAQ over the past quarter, at 15.1% versus (0.7%), and underperformed the NASDAQ over the last twelve months at (9.3%) versus (0.6%). The majority of public PAEs had a positive stock price performance in the first quarter of 2016. Please see charts 1, 2, and 3.
- Public PAEs tend to be small—only four public PAEs have market capitalizations greater than \$1 billion as of March 31, 2016. Please see chart 4.
- Aggregate royalty revenue for public PAEs was \$369 million in the first quarter of 2016, yet only seven PAEs had royalty revenue above \$10 million. Please see charts 5 and 6.
- Despite underperforming the NASDAQ, PAEs have raised more than \$54 million across 14 transactions over the past 12 months. Please see charts 10 and 11.
- Only eight public PAEs have more than \$50 million in cash, and eight have less than \$5 million as of March 31, 2016. Please see chart 14.
- Public PAEs are decreasingly active acquirers of patent portfolios, with 14 disclosed purchases over the past 12 months. Please see charts 15 and 16.
- While cash is the most prevalent form of consideration in public PAE patent acquisitions, the majority of transactions include some mix of contingencies (i.e. back-end arrangements). Please see chart 19.
- Public PAEs are active plaintiffs, accounting for 15 new litigation campaigns over the past 12 months, representing more than 260 active defendants as of March 31, 2016. Please see charts 20-26.

Methodology

RPX continuously strives to improve the accuracy and scope of its data and may make minor changes to methodology and underlying data presented in future analyses and reports. In addition, certain aspects of RPX's methodology may result in slight changes as time passes.

Timing

- This report reflects available financial information as of June 22, 2016, which encompasses Q1 2016 reports and filings for all the companies highlighted in the report. Data are collected when the selected public PAEs report financial data, which can take two to three months after the close of a fiscal quarter or year, thus contributing to the time-gap between the availability of this report and the end of the quarter.
- For companies with off-cycle financials that do not coincide with standard quarter- and year-ends of March 31, June 30, September 30, and December 31, financial data were taken from the quarter with the closest associated end-date.

Public PAE Definition

- For purposes of this report, a public PAE is a publicly traded entity with revenue, activities, or market valuation largely related to patent assertion.

Public PAE Identification

- RPX identifies public PAEs through a manual review process performed by experienced employees with knowledge of the patent industry.

- The process includes, among other things, reviewing public filings; searching for evidence of operating or patent monetization activities on the Internet, including company websites; reviewing complaints, with a focus on accused products and allegations regarding products and/or services sold by the patent owner; considering the outside counsel employed by the entity (e.g. whether outside counsel has a history of representing public PAEs); reviewing corporate disclosure statements filed in litigation; and soliciting market intelligence from patent professionals.
- The public PAEs for this particular report represent the largest, most established public PAEs as well as several recently formed public PAEs that have become public via reverse mergers.
- While there are elements of subjectivity in this approach, RPX believes that the process is robust based on feedback from other patent professionals.

Data Set

- This report uses data from publicly available sources (public filings, press releases, company websites, etc.) and from RPX's proprietary litigation database.

Primary Market Sector

- RPX patent professionals classify portfolios into proprietary market sectors. Each portfolio offered may be classified into multiple market sectors. For purposes of this report, only the most relevant or "primary market sector" is used.

Cases Filed

- “Cases filed” refers to filed actions. A single case filed may include multiple defendants. The date for a case filed is the date on which it was originally filed.

Campaign, New Campaigns Filed, Total Campaign Defendants, and Unique Campaign Defendants

- “Campaign” refers to all cases filed by the same plaintiff (inclusive of all members in the corporate family) where each case has at least one patent or family member of a patent in common with another case in the campaign.
- “Campaigns filed” refers to unique campaigns. The date for a campaign filed is the filing date of the first case filed in the campaign. For example, if a campaign includes ten cases, there will be only one new campaign filed; the filing date for the campaign is established by the filing date of the first case filed in the campaign.

Litigation Identification

- RPX excludes false marking cases, misfiles, and ownership disputes. Unless otherwise noted, litigation data are based on campaigns, as opposed to cases.

PAE Related Entities

- RPX’s proprietary litigation database rolls up certain related PAEs into a single public PAE entity. RPX has manually identified these relationships by, among other things, reviewing corporate disclosures, patent assignment records, and RPX market intelligence. For example, Acacia has numerous subsidiaries that RPX has identified. These entities are all represented as Acacia in this report’s analyses.

Small Cap and Large Cap PAEs

- A small cap PAE is a public PAE with a market cap of less than \$300 million, and a large cap PAE is a public PAE with a market cap greater than or equal to \$300 million, as of the end of the reporting quarter.

Patent Transaction Identification

- This report notes patent acquisitions and patent sales that any PAE on the selected list has disclosed in public filings, press releases, or any other publicly available and credible source.

PAE Financings Classification

- Financings classified as Equity deals are deals publicly identified as Bought Deals, Follow-ons, PIPEs, Private Placements, Registered Directs, Rights Offerings, or Warrant Sale.
- Financings classified as Debt deals are deals publicly identified as Debt, Loan Facilities, or Secured Notes.
- Financings classified as Hybrid deals are deals publicly identified as Convertible Debentures, Convertible Notes, Convertible Senior Notes, or Senior Convertible Notes.

Historical Data

- For the purpose of consistency, historical PAE data are not adjusted quarter over quarter if the PAE list is modified due to various reasons (bankruptcy, acquisition, discontinuation of PAE activity, etc.). Historical data may change to reflect differences in public disclosure over time.

Market Data

The following pages feature charts and highlights relating to PAE market performance.

Public PAE Overview

Large Cap Companies	Ticker	Stock Price (As of 12/31/15)	Market Cap (\$USD M)	High	Q1 2016		Last 12 Months			
					Low	Stock Performance (% change)	High	Low	Stock Performance (% change)	
InterDigital	IDCC	\$55.65	\$1,947.5	55.65	41.56	13.5%	\$60.69	\$41.01	9.7%	
Rovi	ROVI	20.51	1,708.4	23.44	16.39	23.1%	23.70	8.01	12.6%	
Tessera	TSRA	31.00	1,550.5	31.18	26.57	3.3%	41.61	26.21	(23.0%)	
Rambus	RMBS	13.75	1,511.1	13.87	10.89	18.6%	15.49	9.86	9.3%	
Small Cap Companies										
WiLAN	WILN	2.28	275.8	2.28	0.97	60.0%	2.51	1.00	(5.1%)	
VirnetX	VHC	4.59	250.1	7.31	2.00	78.6%	9.64	1.95	(24.6%)	
Acacia	ACTG	3.79	191.2	4.18	2.98	(11.7%)	12.51	2.82	(64.6%)	
Pendrell	PCO	0.53	141.9	0.65	0.46	5.8%	1.71	0.45	(59.2%)	
Unwired Planet	UPIP	9.73	91.3	11.31	8.44	(6.1%)	13.2	6.48	41.7%	
Network-1 Technologies	NTIP	1.91	44.5	2.10	1.86	(8.6%)	2.99	1.49	(15.1%)	
SITO Mobile	SITO	2.55	43.8	2.95	1.66	22.6%	6.15	1.55	(15.0%)	
Parkervision	PRKR	3.13	35.9	3.79	1.75	34.6%	8.50	1.46	(62.3%)	
Marathon Patent	MARA	1.99	29.8	2.41	1.49	24.4%	6.24	1.29	(65.7%)	
ITUS	ITUS	3.01	26.3	3.28	1.88	0.0%	8.95	1.75	(8.9%)	
Vringo	VRNG	1.64	24.5	72.63	1.39	(33.6%)	7.69	1.18	(74.8%)	
Finjan Holdings	FNJN	0.91	20.7	1.19	0.83	(20.9%)	2.80	0.81	(55.8%)	
DSS	DSS	0.19	9.6	0.25	0.13	8.4%	0.45	0.11	(47.1%)	
Inventergy	INVT	1.99	8.4	2.22	1.24	23.6%	4.90	0.71	(69.4%)	
Walker Innovation	WLKR	0.33	6.8	0.36	0.18	49.5%	2.20	0.13	(77.3%)	
Spherix	SPEX	1.81	5.3	2.67	1.71	(34.9%)	16.32	1.52	(88.6%)	
Crossroads Systems	CRDS	4.20	5.1	21.20	3.20	(80.4%)	53.00	3.00	(91.7%)	
Quest Patent Research	QPRC	0.01	2.9	0.02	0.00	181.8	0.02	0.00	220.7%	
Patriot Scientific	PTSC	0.01	2.4	0.01	0.01	(20.0%)	0.05	0.00	(86.7%)	
Endeavor IP	ENIP	0.00	0.2	0.00	0.00	(50.0%)	0.00	0.00	(88.9%)	

Note: Last 12 months data through end of Q1 2016.

Public PAEs Outperformed the Market in Q1 2016

Chart 1: Q1 2016 Index Chart

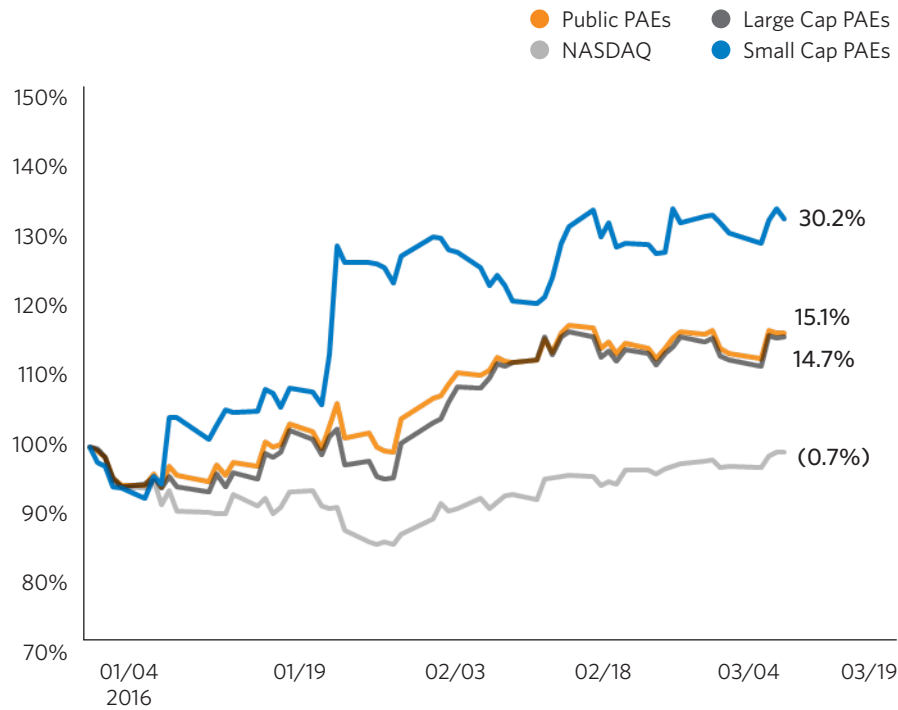
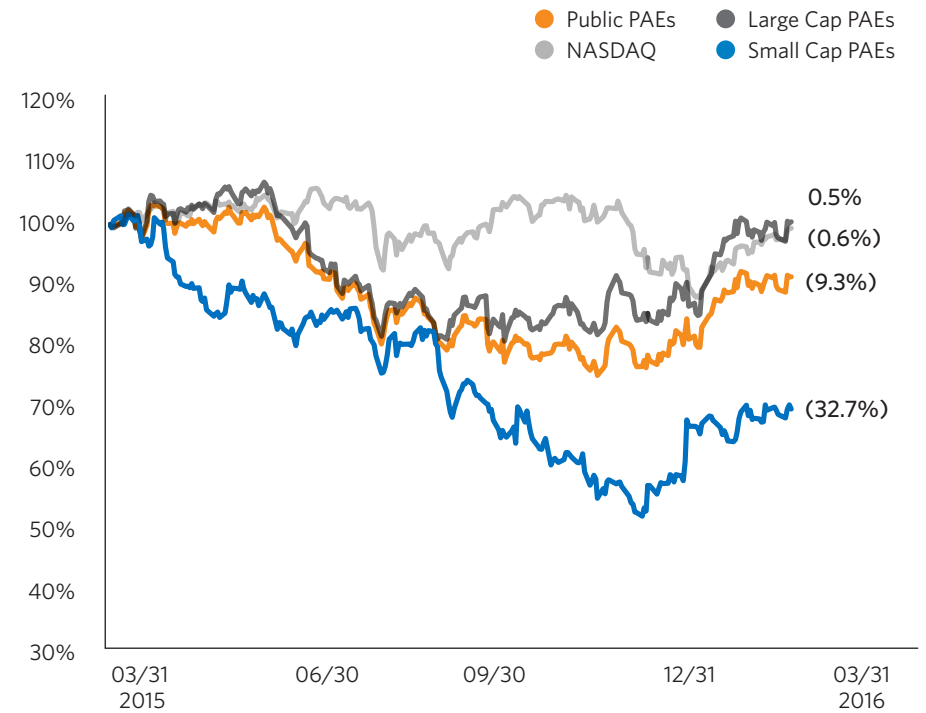


Chart 2: Last 12 Months Index Chart as of 03/31/2016



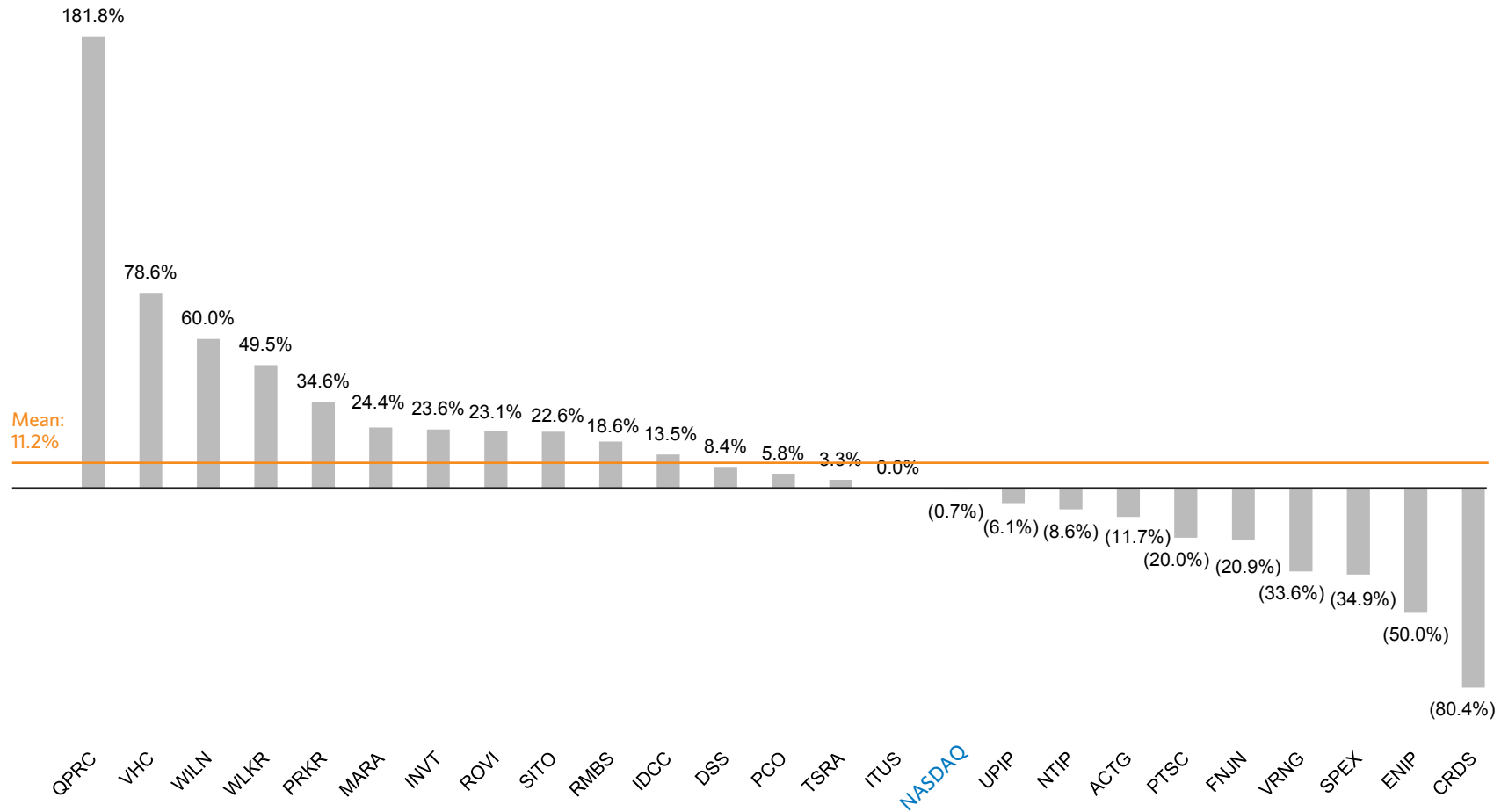
Methodology Note:

The "Public PAEs", "Large Cap PAEs", and "Small Cap PAEs" indices are market cap weighted—each stock is weighted based on its market capitalization, with larger companies carrying a larger percentage weighting of the index.

Q1 2016 Stock Performance Picked Up

Chart 3: Q1 2016 Stock Performance Percentage

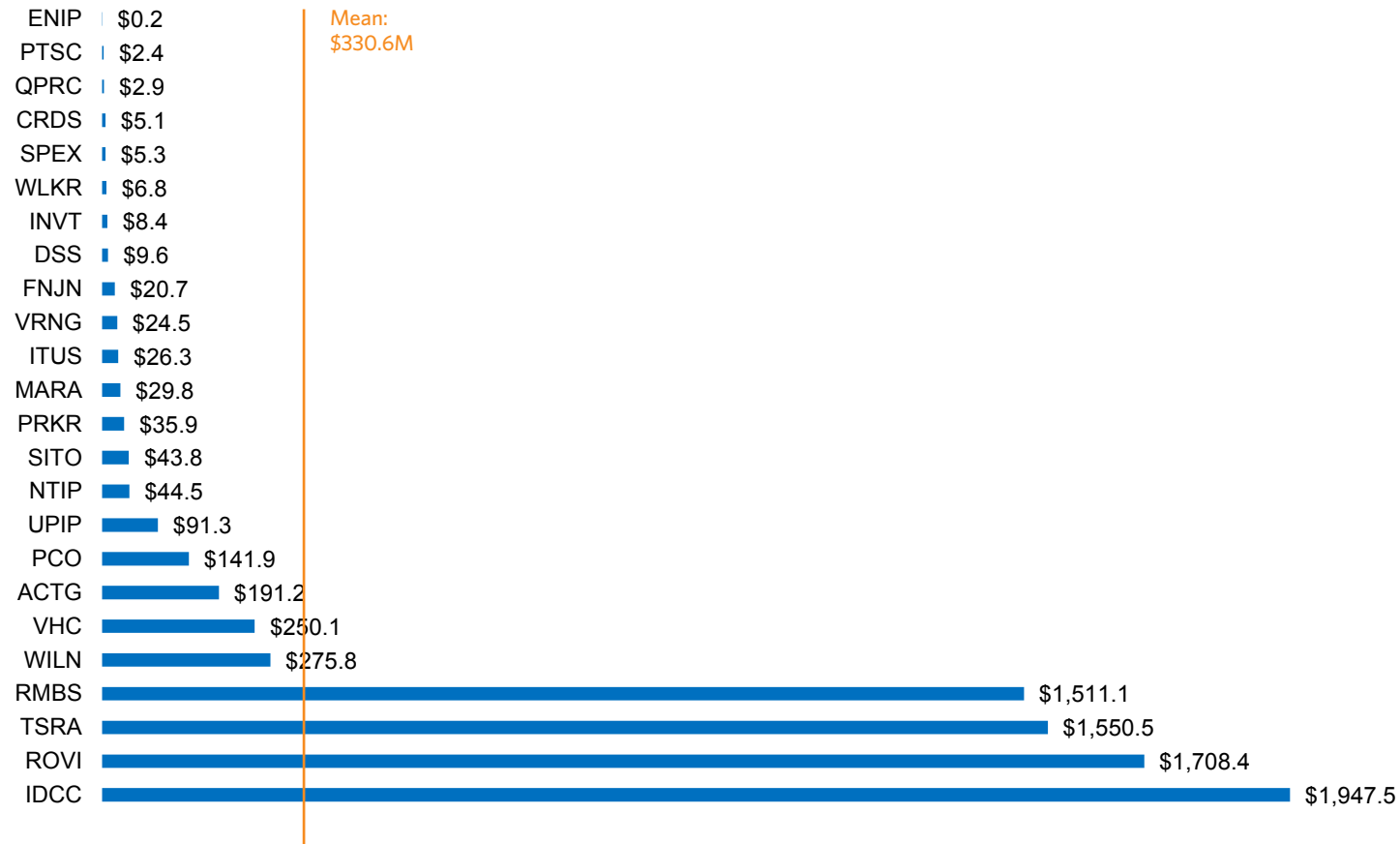
The majority of PAEs outperformed the market in Q1 2016.



Public PAE Market Cap Summary as of Q1 2016

Chart 4: Public PAE Market Cap (\$USD M)

There are only four public PAEs with a market cap over \$1 billion, with the majority of public PAEs under a market cap of \$100 million.



Financial Data

The following pages feature charts and highlights relating to key financial data for public PAEs.

Royalty Revenue Is Below the Two-year Average

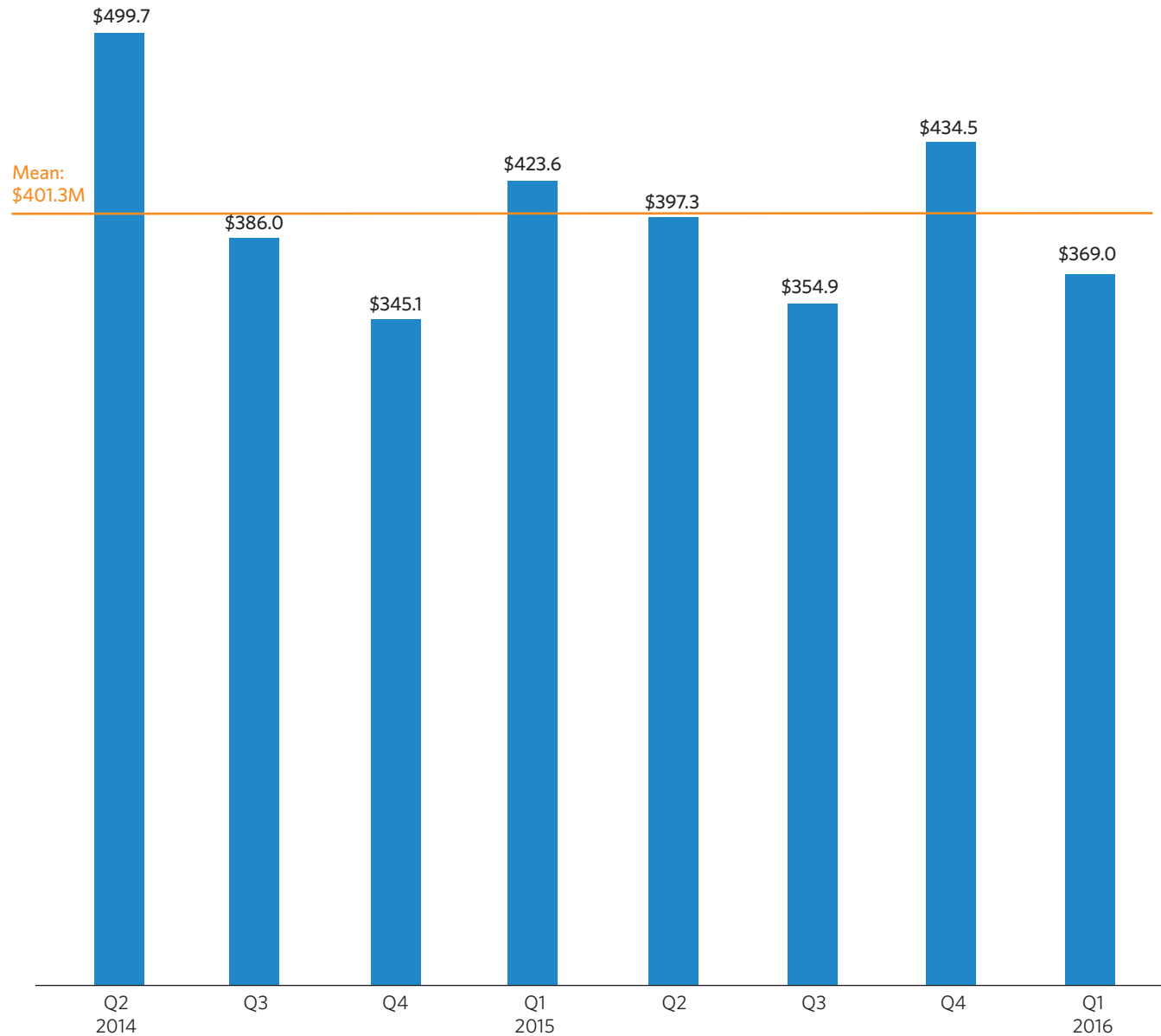
Chart 5: Total Royalty Revenue (\$USD M)

Royalty revenue has been inconsistent since Q2 2014.

Methodology Note:

Revenue is considered "royalty revenue":

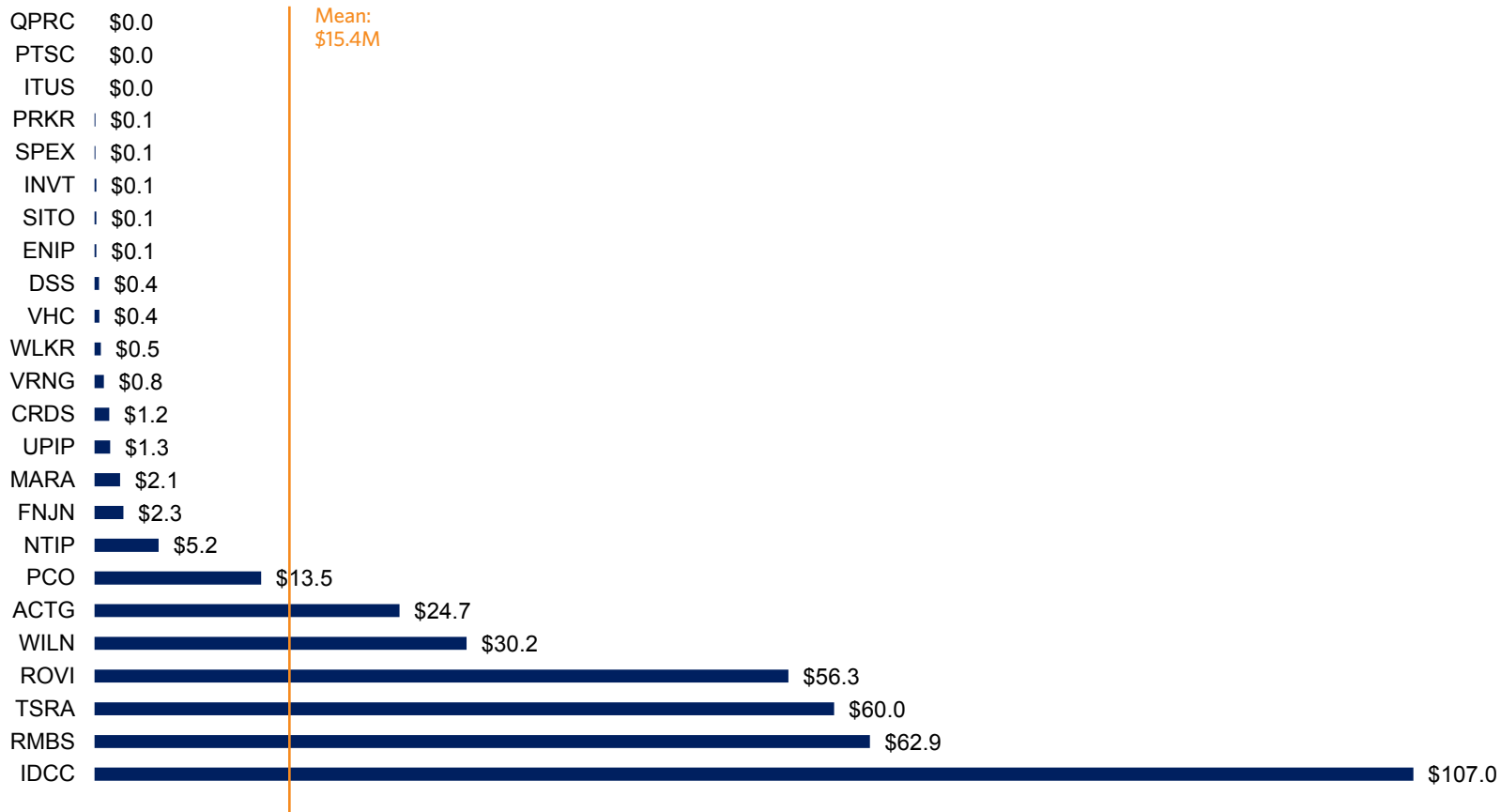
- If it is specifically classified or broken out as royalty or licensing revenue
- If the public PAE's only source of revenue is from licensing its patents



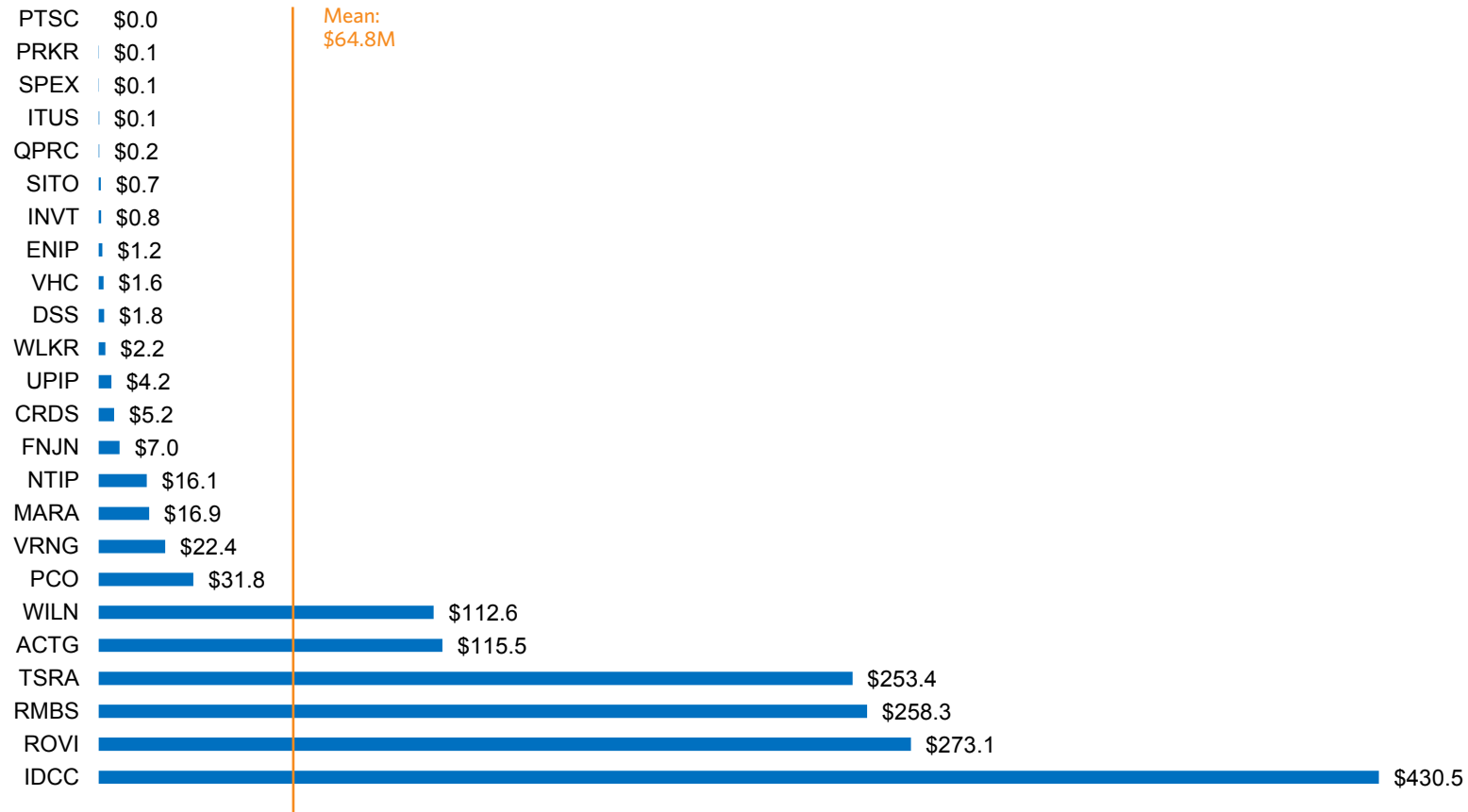
Royalty Revenue Was Largely Driven by Four PAEs in Q1 2016

Chart 6: Total Q1 2016 Royalty Revenue (\$USD M)

Seven public PAEs accounted for 96% of total royalty revenue of all selected public PAEs for Q1 2016.



...and over the Last 12 Months



Pattern of Net Losses for Public PAEs

Chart 8: Total Net Income/ Loss per Quarter (\$USD M)

Public PAEs have experienced net losses over the past two years, with the exception of Q2 2014 and Q3 2015.

Methodology Note:

Net income/loss reflects the operations of the whole company and not specifically the operations related to patent assertion, as most public PAEs do not publicly disclose segmented profit/loss information for their patent assertion businesses.

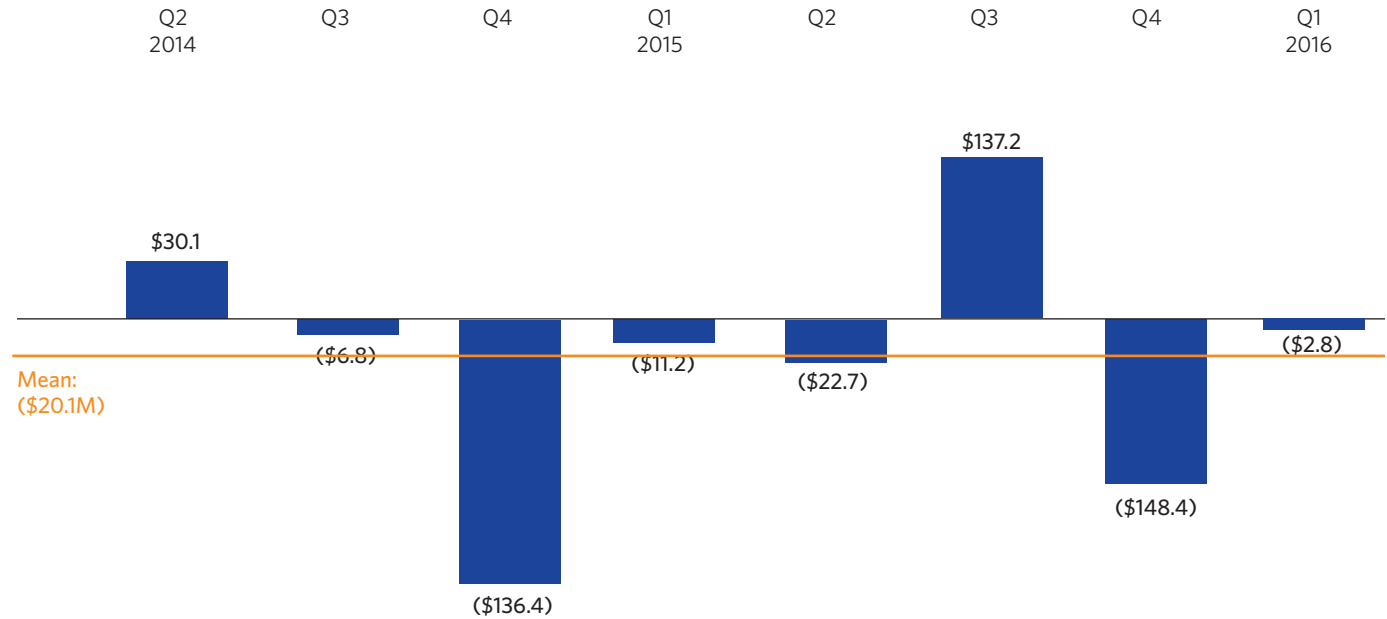
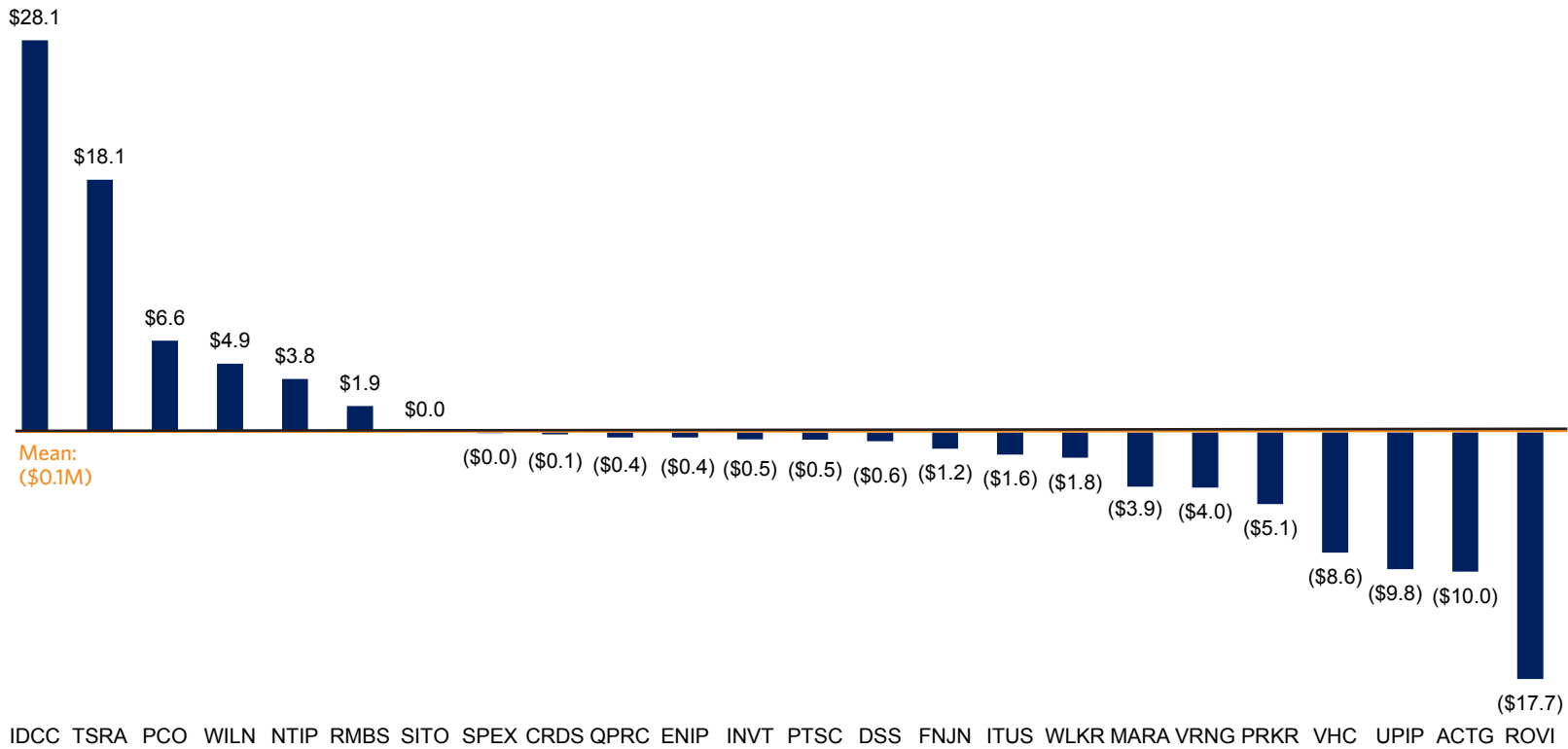


Chart 9: Total Q1 2016 Net Income/Loss (\$USD M)

The majority of public PAEs had a net loss in Q1 2016.



Detailed List of Public PAE Financings— Last 12 Months as of Q1 2016

During the last twelve months as of Q1 2016, there were nine equity deals totaling \$20 million, two debt deals of \$20 million, and three hybrid deals totaling \$14 million, with a total amount raised of \$54 million.

Close Date	Issuer	Type	Amount Raised (\$USD M)
02/26/16	ParkerVision	Debt	\$10.0
01/25/16	ParkerVision	Equity	\$1.0
01/22/16	Inventergy	Equity	\$2.5
12/23/15	ParkerVision	Equity	\$2.1
12/23/15	Document Security Systems	Equity	\$1.5
12/07/15	Spherix	Equity	\$3.4
11/02/15	Crossroads Systems	Debt	\$10.0
10/22/15	Quest Patent Research	Hybrid	\$1.5
09/01/15	Document Security Systems	Equity	\$1.0
07/28/15	Crossroads Systems	Equity	\$4.9
07/21/15	Spherix	Equity	\$1.3
05/04/15	Vringo	Hybrid	\$12.5
04/06/15	Endeavor IP	Hybrid	\$0.0
04/01/15	Inventergy	Equity	\$2.2

Financings Down in the Past Two Years

Chart 10: Total Amount Raised by Type (\$USD M)

Financings are typically hybrid transactions, with an average of \$204 million raised per quarter.

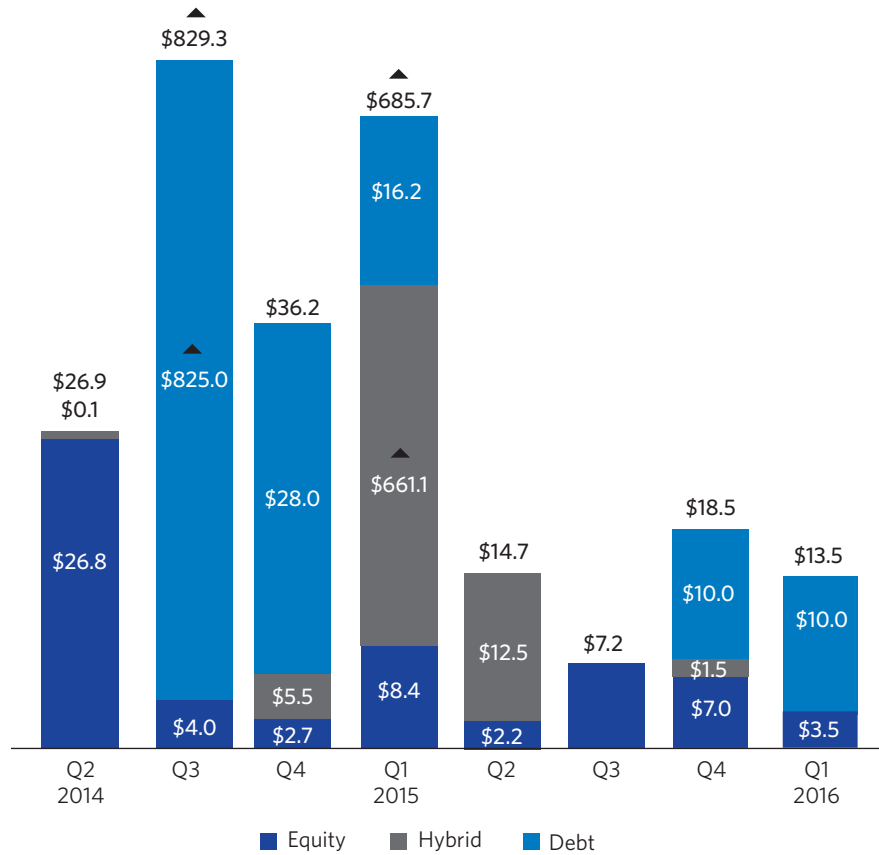
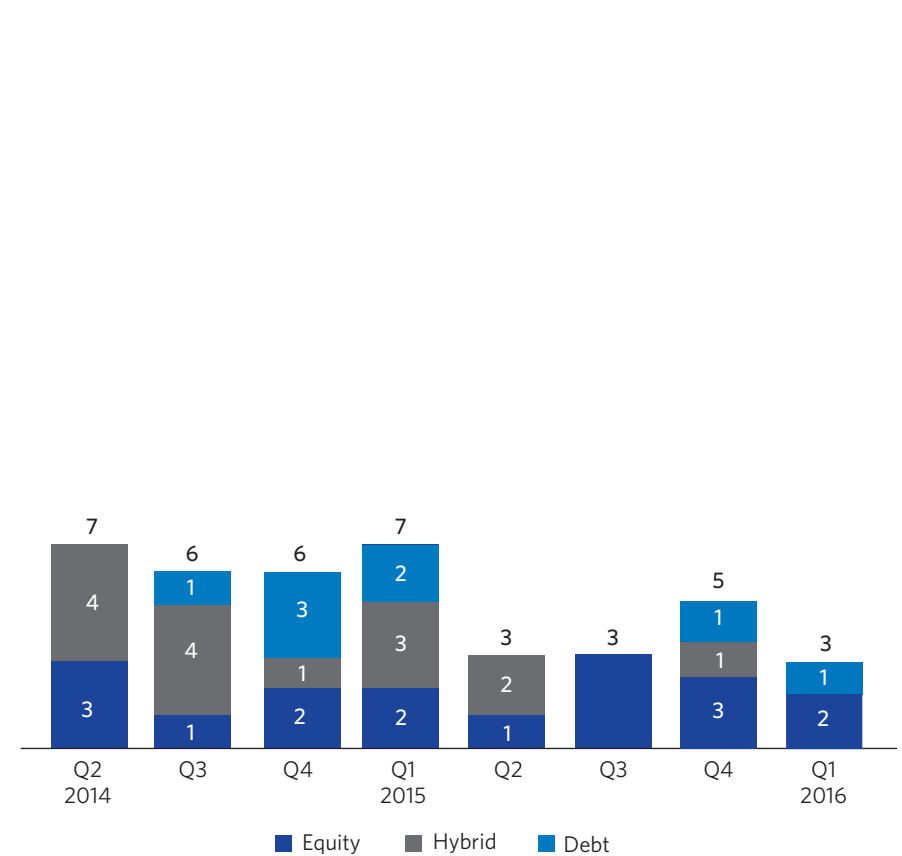


Chart 11: Number of Financings by Type

On average, public PAEs have executed five financings (typically hybrid transactions) per quarter.



Public PAE Cash Declining

Chart 12: Total Public PAE Cash Balance per Quarter (\$USD M)

Since Q2 2014, cash levels for public PAEs have fluctuated, down from a high of \$2.5 billion to a low of \$2.0 billion.

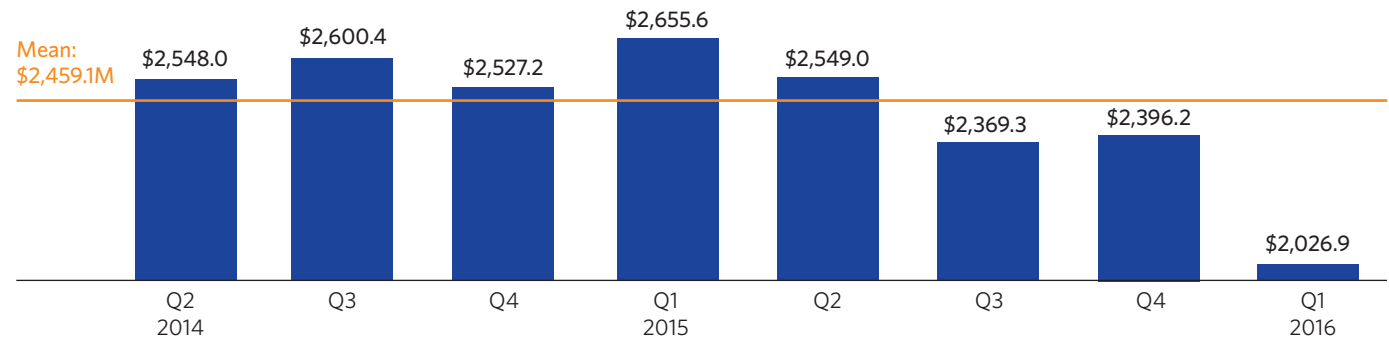
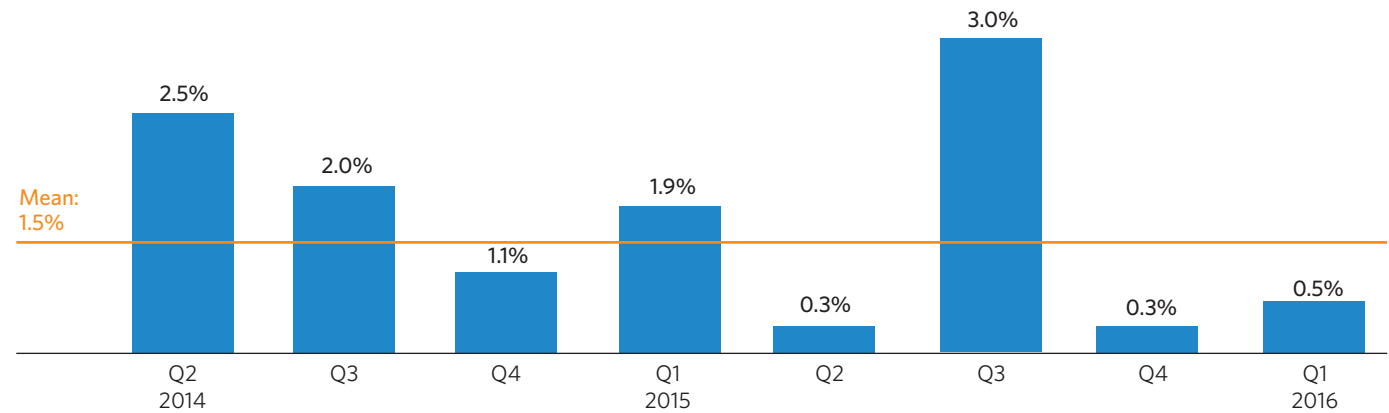


Chart 13: Cash Spent to Acquire Patents as a Percentage of Total Public PAE Cash Balance

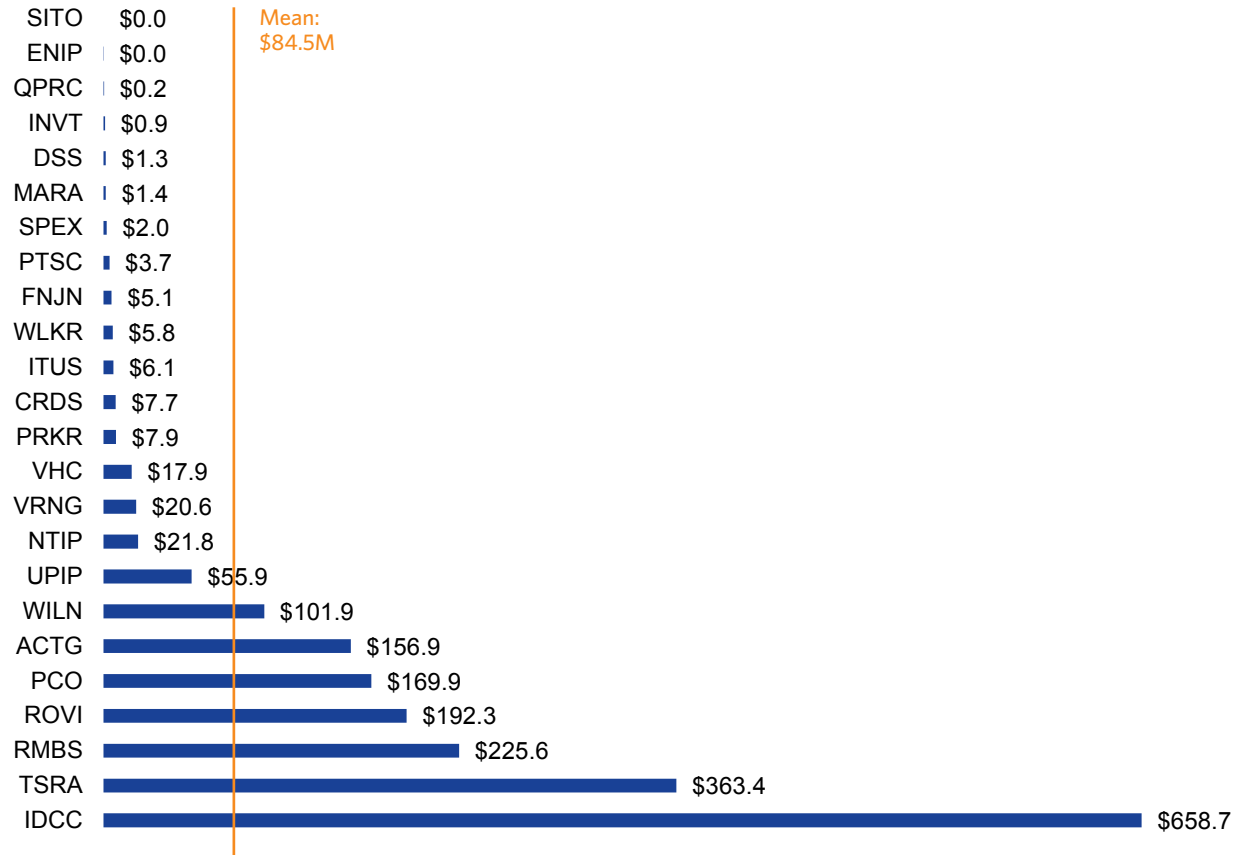
Cash spent on patents has been erratic quarter over quarter, with a high of 3.0% in Q3 2015.



Cash Is Mostly Concentrated Among a Few Public PAEs

Chart 14: Total Q1 2016 Cash Balance (\$USD M)

The top six public PAEs accounted for 87% of the total cash balance of all selected public PAEs in Q1 2016.



Patent Transactions

The following pages feature charts and highlights relating to public PAE patent acquisitions and sales.

Disclosed Patent Transactions— Last 12 Months as of Q1 2016

Patent Transaction Identification

This report notes patent acquisitions and patent sales that any PAE on the selected list has disclosed in public filings, press releases, or any other publicly available and credible source.

Date of Transaction	Acquirer	Seller	Portfolio Description	Purchase Price (\$USD M)	Number of Assets
02/23/16	Dominion Harbor Group	WILN	Not disclosed	Not disclosed	Fewer than 100 patent families
01/31/16	ROVI	Not disclosed	Not disclosed	\$2.5	Not disclosed
11/04/15	WILN	Freescale	Processors, memory, semiconductor packaging, wireless, and the Internet of Things	Not disclosed	Over 3,000 patents
08/27/15	TSRA	Ziptronix	Low-temperature wafer bonding technology	\$32.3	Not disclosed
08/10/15	ACTG	Not disclosed	Multi-zonal completion of horizontal wells	Not disclosed	Not disclosed
07/21/15	ACTG	Not disclosed	Efficient operating of websites on the Internet	Not disclosed	Not disclosed
07/08/15	SITO	Hipcricket	Mobile advertising	\$3.8	Not disclosed
06/25/15	Not disclosed	INVT	Mobile communications infrastructure and mobile handset market	\$4.0	2 patent families
06/10/15	WILN	Funai	Microphone technologies	Not disclosed	Not disclosed
06/02/15	WILN	Infineon	DRAMs, FLASH memories, semiconductor processes, semiconductor manufacturing, lithography, packaging, semiconductor circuitry and memory interfaces	\$33.0	Over 7,000 patents and applications
05/28/15	WILN	Not disclosed	Automation of industrial facilities, including manufacturing plants and refineries	Not disclosed	Not disclosed
05/21/15	WILN	Not disclosed	Technology that seamlessly transfers communications between Wi-Fi and cellular wireless networks	Not disclosed	Not disclosed
04/23/15	MARA	Bridgestone Americas Tire Operations	Tire pressure monitoring sensors and systems	\$10.0	43 patents
04/09/15	WILN	Not disclosed	Microscopy-related intellectual property for producing enhanced images	Not disclosed	Not disclosed
04/07/15	FNJN	F-Secure	Cybersecurity	\$0.0	2 patents

Patent Acquisitions at a Two-year Low for Public PAEs

Chart 15: Number of Disclosed Patent Acquisitions by Sector

With the exception of the Consumer Electronics and PCs sector, patent acquisitions have been spread out relatively evenly between the other named sectors, with an average of seven total transactions per quarter. Also, since Q2 2014, there has been a falloff in E-commerce and Software and Networking patent acquisitions following the Supreme Court's *Alice* ruling.

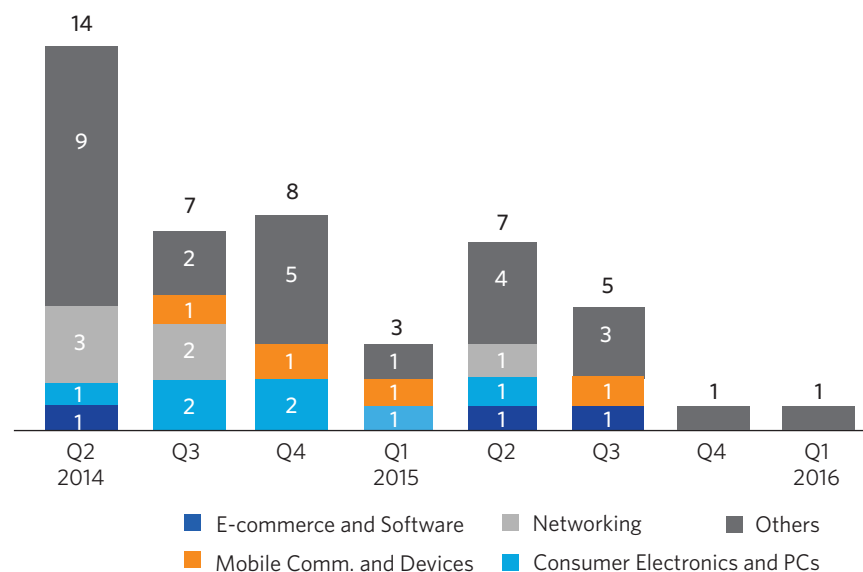
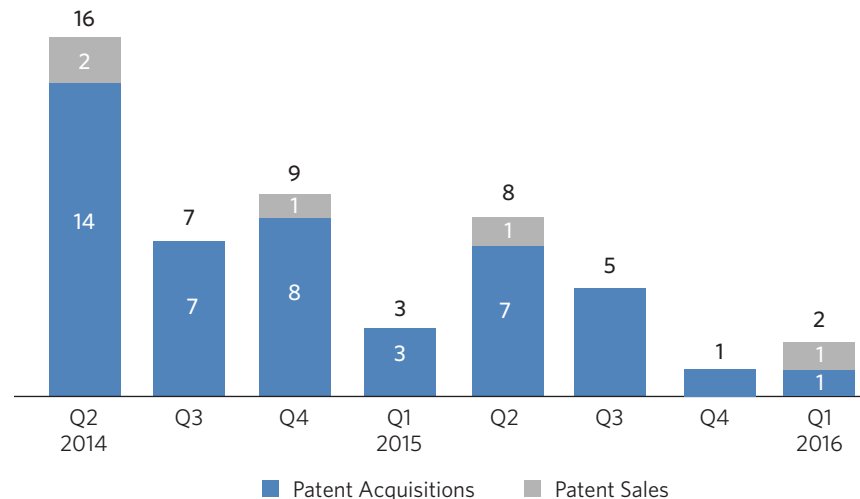


Chart 16: Number of Patent Transactions by Type

Public PAEs generally buy patents rather than sell them, with an average of six total transactions per quarter.



Methodology Note:

Differences between Charts 17 and 18 as they relate to stock transactions are a result of company acquisitions wherein patents are included but are not the focus of the acquisition. They are given a value based on the allocation of the purchase price, but are not counted as an individual patent transaction.

Most Deals Funded by Cash

Chart 17: Capital Spent on Patents by Type—Total \$ Amount (\$USD M)

Public PAEs typically use cash to finance patent transactions. Since Q2 2014, public PAEs have spent an average of \$38 million per quarter on patents.

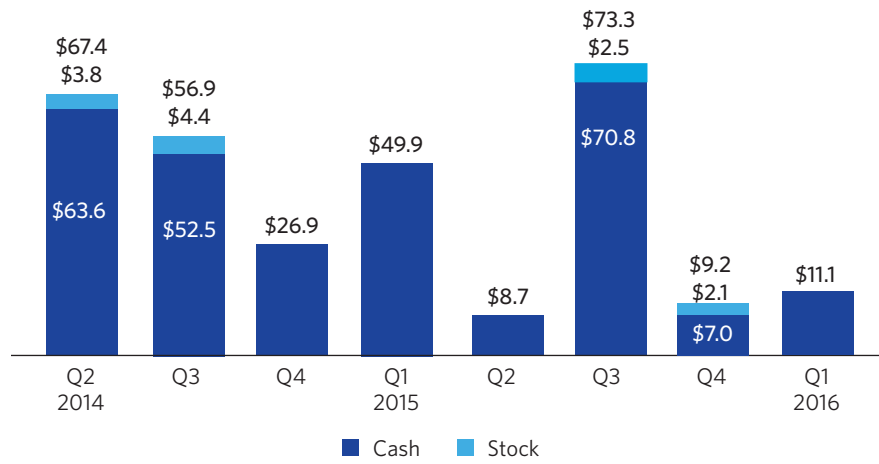
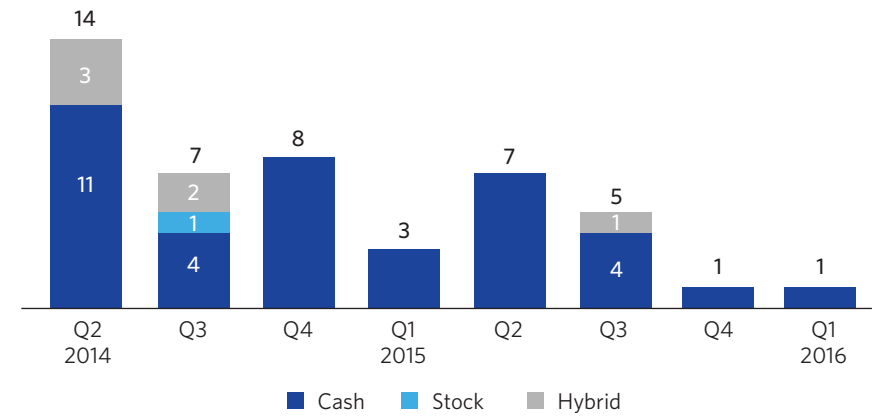


Chart 18: Capital Spent on Patents by Type—Total Count

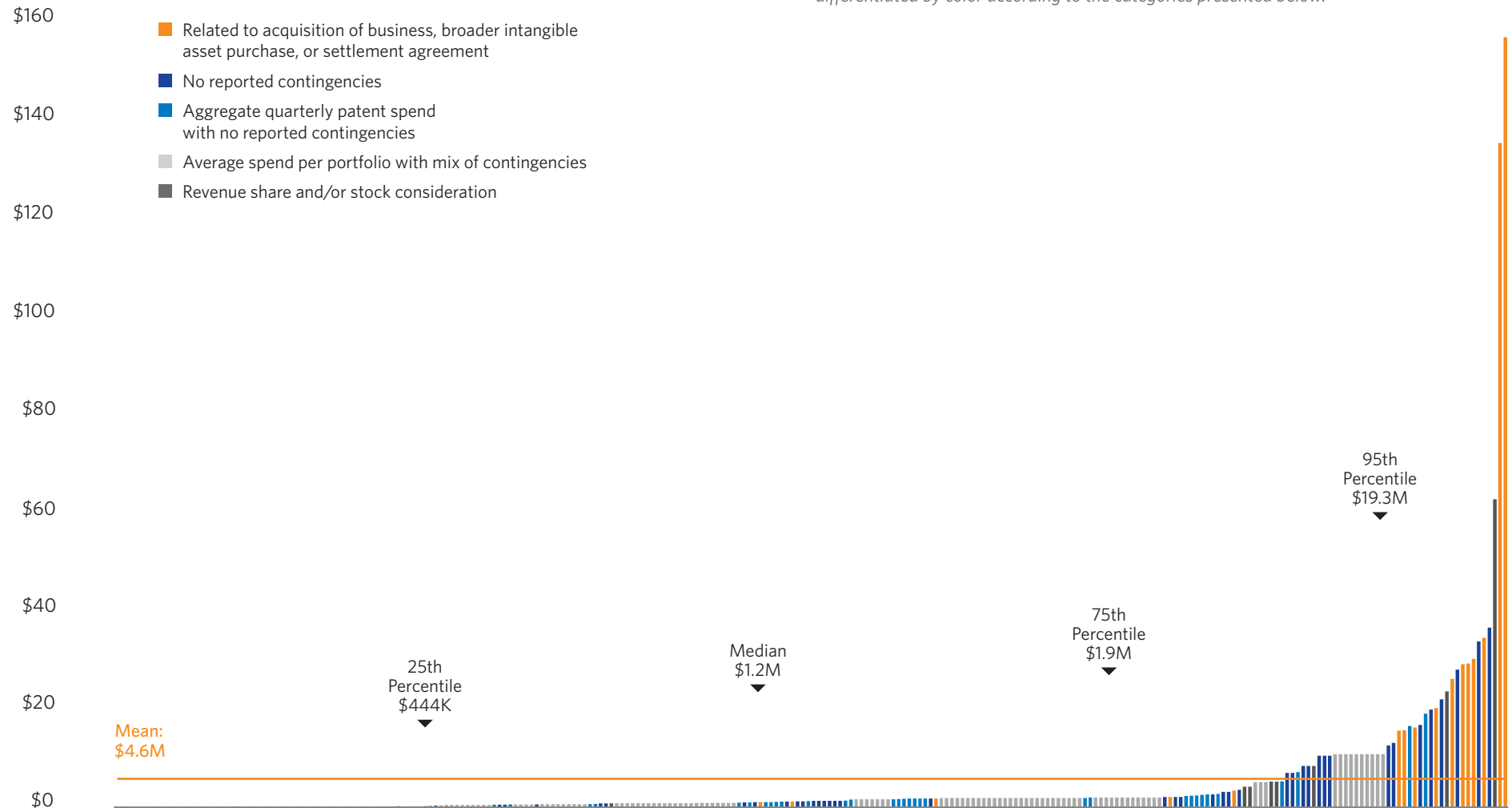
The majority of patent acquisitions have been funded with cash, with an average of six total patent acquisitions per quarter.



Guaranteed Purchase Prices of Public PAE Portfolio Acquisitions

Chart 19: Guaranteed Purchase Prices of Public PAE Portfolio Acquisitions (\$USD M)

Though there have been sizeable purchase prices for patent portfolios, the majority of recent purchase prices have been modest, hovering around \$1 million.



Methodology Note:

This chart displays all portfolio acquisitions, dating back to 2010, for the 24 public PAEs included in this report. For some transactions, the price was publicly disclosed and is identified here. For transactions where the price was not publicly disclosed, RPX took one quarter's acquisition spend and deemed it a single transaction. Finally, the transactions are differentiated by color according to the categories presented below.

Litigation Data

The following pages feature charts and highlights relating to public PAE litigation data.

New Public PAE Campaigns in Q1 2016

Public PAE	Campaign Name	Campaign Summary	Defendant(s) Named in Q1 2016	Number of Patents
WiLAN	Polaris Innovations Limited (6,157,589)	On February 19, 2016, WiLAN subsidiary Polaris Innovations Limited launched its first litigation campaign, suing Kingston over six patents acquired from Infineon in July 2015 (8:16-cv-00300). Kingston is accused of willfully infringing the patents-in-suit through its solid state drives as well as inducing customers and other third parties to directly infringe the patents. According to WiLAN, the 2015 deal with Infineon involved “the vast majority” of Qimonda AG’s patent portfolio, which reportedly contains over 7,000 patents and applications related to “DRAMs, FLASH memories, semiconductor processes, semiconductor manufacturing, lithography, packaging, semiconductor circuitry and memory interfaces”. In the second quarter of 2016, Polaris Innovations initiated a second campaign, this time asserting another six Infineon/Qimonda patents against NVIDIA and Dell (5:16-cv-00451, open in initial pleadings). The NPE’s case against Kingston is open in scheduling in the Central District of California.	Kingston	6
Inventergy	Inventergy, Inc. (7,881,317)	Inventergy, Inc., a subsidiary of Inventergy Global Inc., initiated a new campaign on February 24, 2016 with a case filed against Sonus Networks (3:16-cv-00918). Inventergy’s complaint asserted a single patent (7,881,317) generally related to Next Generation Network (NGN) technology, which originated with Huawei. Sonus was accused of infringing the patent through provision of its IP Multimedia Core Network Subsystem (IMS) and/or VoIP-related services, including session border controllers (SBCs). The case was dismissed with prejudice in early June 2016, with earlier court filings suggesting that the parties had reached a settlement.	Sonus Networks	1

New Public PAE Campaigns in Q1 2016, Continued

Public PAE	Campaign Name	Campaign Summary	Defendant(s) Named in Q1 2016	Number of Patents
WiLAN	Smart Meter Technologies, Inc. (7,058,524)	On March 31, 2016, WiLAN subsidiary Smart Meter Technologies, Inc. launched its first litigation campaign, filing suit against Duke Energy Corporation for alleged infringement of an electrical metering patent (7,058,524). The accused products include implemented power distribution equipment in the form of advanced power meters at residences. The '524 patent issued in June 2006 to Hudson Bay Wireless, which transferred it to Smart Meter in September 2014. As of the date of this report, Smart Meter has not filed any additional suits asserting the '524 patent, and its case against Duke remains active in initial pleadings in the District of Delaware.	Duke Energy Corporation	1

Active Public PAE Campaigns Trending Down

Chart 20: Total New Campaigns per Quarter

On average, six new campaigns have been initiated every quarter since Q2 2014.

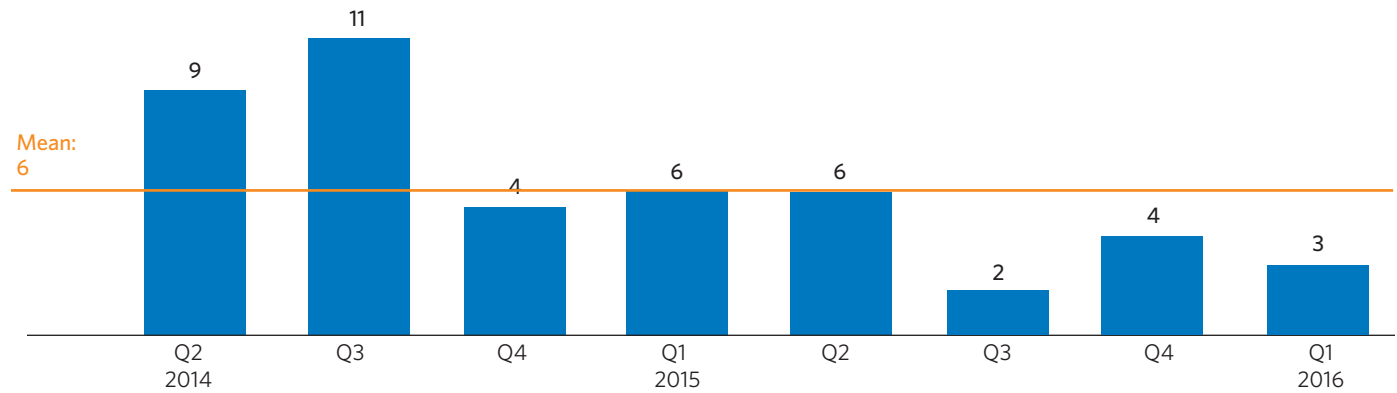
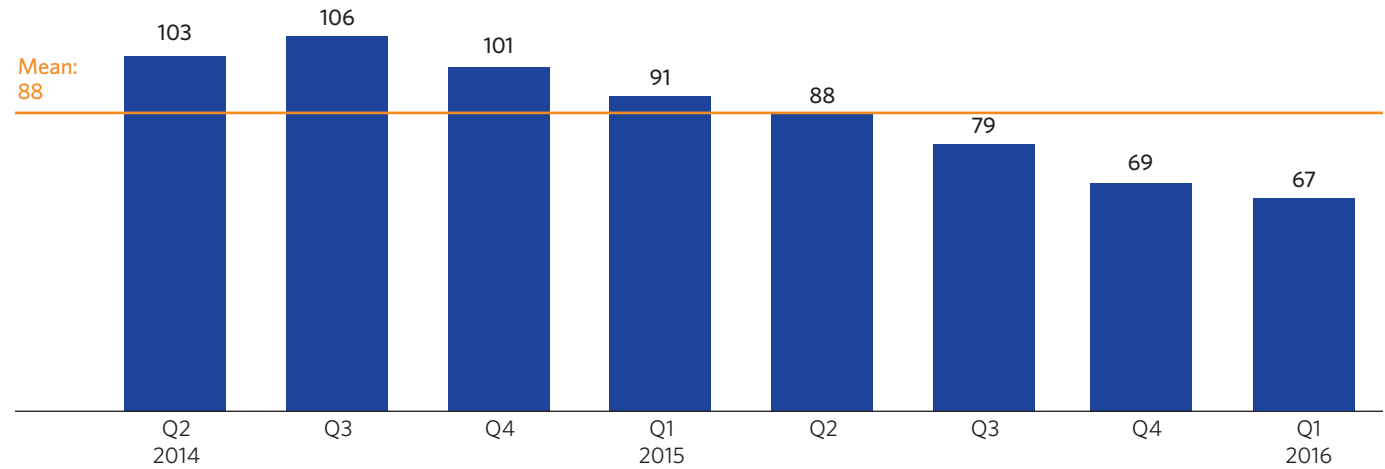


Chart 21: Total Active Campaigns per Quarter

The number of active campaigns has been trending down in recent quarters.



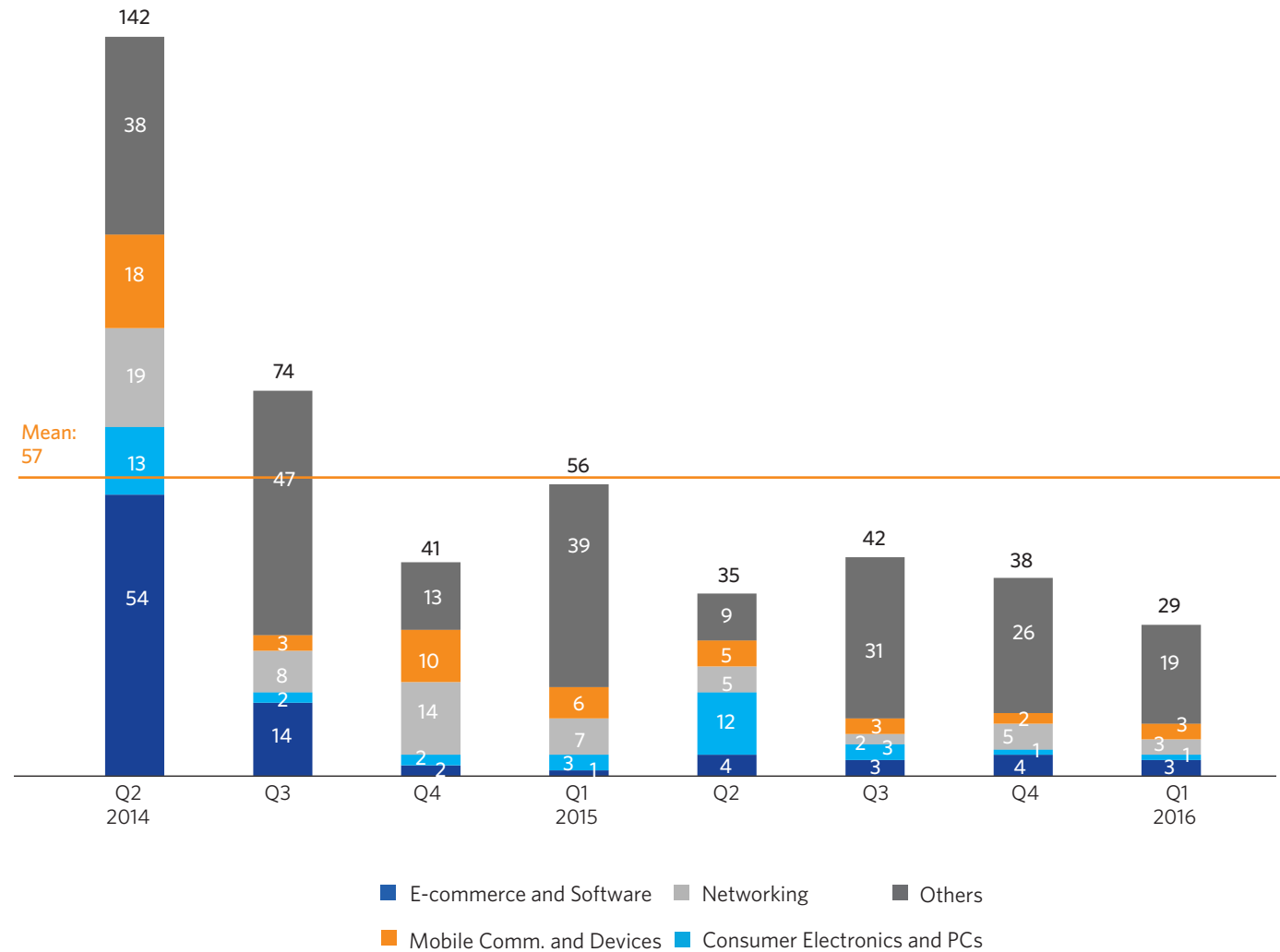
Public PAE Defendants Added at Two-year Low

Chart 22: Total Public PAE Defendants Added per Quarter

The number of total public PAE defendants added has been inconsistent quarter over quarter, with a high of 142 in Q2 2014. Recent quarters have been well below the historical mean.

Total Public PAE Defendants Added per Quarter by Sector

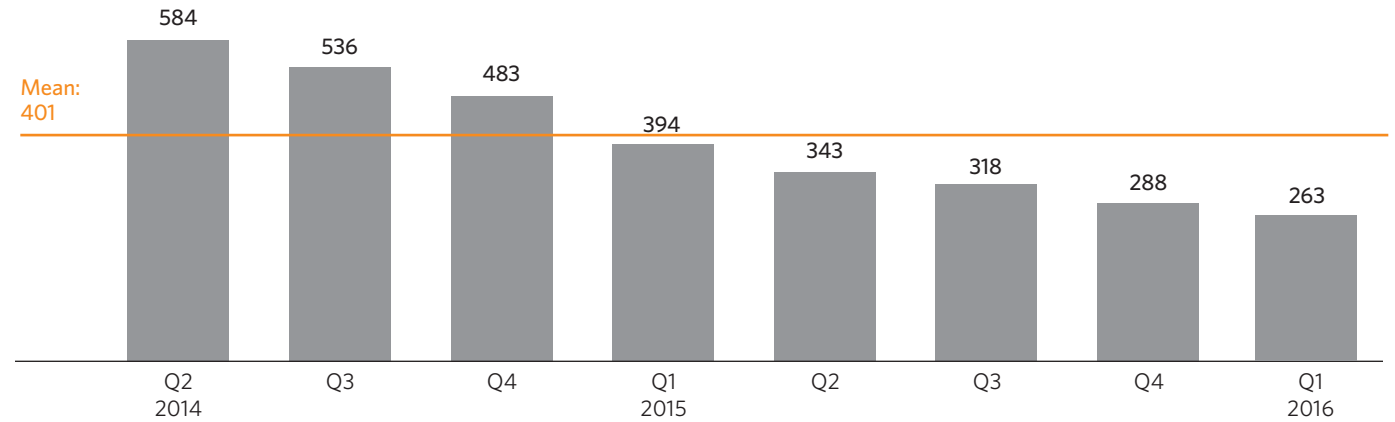
The Mobile Communications and Devices and the E-commerce and Software sectors have seen the most public PAE litigation activity. However, there has been a drop-off in the E-commerce and Software sector since Q2 2014, partly due to the Supreme Court *Alice* ruling on June 19, 2014.



Number of Active Defendants in Public PAE Litigation Has Been Decreasing

Chart 23: Total Active Defendants per Quarter

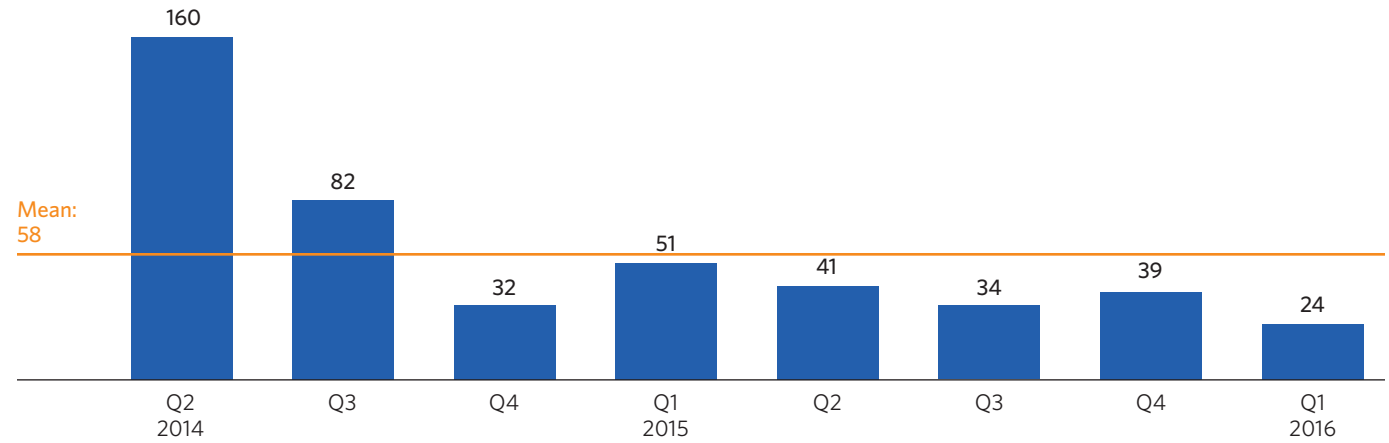
The average number of active defendants in public PAE litigation, per quarter and since Q2 2014, is 401. Recent quarters have seen slight declines.



Active Public PAE Cases Down Since Q2 2014

Chart 24: Public PAE Cases Filed per Quarter

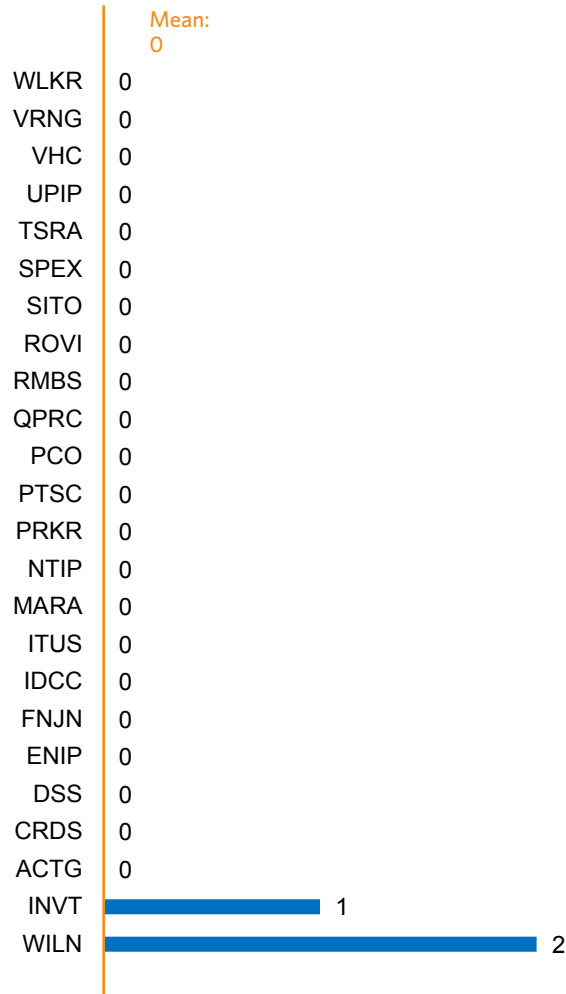
Public PAE cases filed per quarter is sporadic, with a high of 160 in Q2 2014 and a low of 24 in Q1 2016.



Low Campaign Activity in Q1 2016

Chart 25: Total Campaigns Filed in Q1 2016

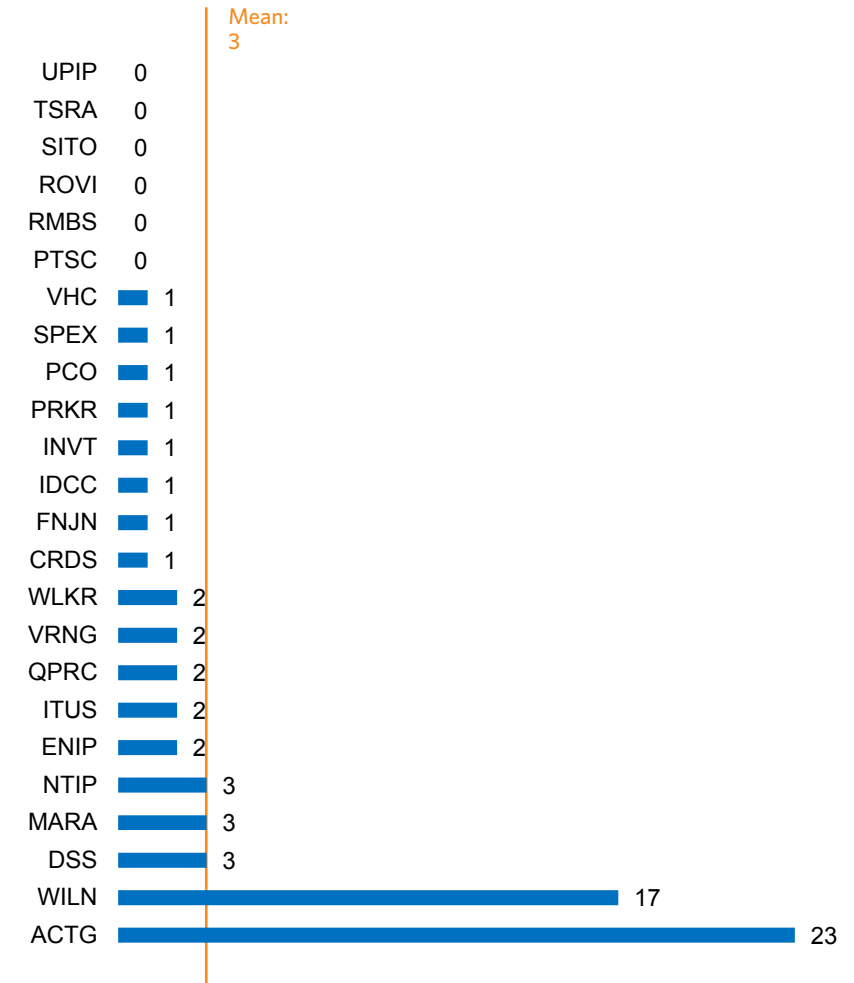
Inventery and WiLAN were the only public PAEs to initiate new campaigns in Q1 2016.



Acacia and WiLAN Have the Highest Number of Active Campaigns

Chart 26: Total Active Campaigns in Q1 2016

Acacia and WiLAN are the public PAEs that are most active in litigation, with a total of 40 active campaigns.



Profiles

The following pages feature overview information and detailed summaries of public PAEs studied in this report.

Overview

Company Name	Formation Type and Description	Primary Technologies
Acacia	Initial public offering in 1995	Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution, Medical, Mobile Communications and Devices, Networking
Crossroads Systems	First patent infringement case in September 2013	E-commerce and Software, Networking
Document Security Systems	Reverse merger (announced 10/2/12)	E-commerce and Software, Media Content and Distribution, Networking
Endeavor IP	Reverse merger (announced 5/13/13)	Mobile Communications and Devices
Finjan	Reverse merger (announced 6/3/13)	Web and Network Security
InterDigital	Initial public offering in 1981	Mobile Communications and Devices, Networking
Inventergy Global	Reverse merger (announced 12/13/13)	Consumer Electronics and PCs, Mobile Communications and Devices, Networking
ITUS	Began focusing on PAE activity in Q1 2013 (previously an operating company)	Consumer Electronics and PCs, E-commerce and Software, Mobile Communications and Devices
Marathon Patent Group	Reverse merger (announced 11/20/12)	E-commerce and Software, Mobile Communications and Devices, Networking
Network-1	Operating company with PAE activity (first PAE litigation in August 2005)	Networking, Consumer Electronics and PCs, Media Content and Distribution, E-commerce and Software
ParkerVision	First patent infringement case in July 2011 against Qualcomm	Mobile Communications and Devices, Semiconductors
Patriot Scientific	Entered into a joint venture agreement with Technology Properties Limited in June 2005 to commercialize its patented technologies	Consumer Electronics and PCs, Media Content and Distribution, Mobile Communications and Devices, Networking, Semiconductors
Pendrell	Began focusing on patent monetization in the second half of 2011 (previously an operating company)	Mobile Communications and Devices, E-commerce and Software
Quest Patent Research	Began as a maker of a smoking cessation product and shifted to patent monetization in 2008	Consumer Electronics and PCs, Semiconductors, Mobile Communications and Devices, E-commerce and Software, Financial Services

Company Name	Formation Type and Description	Primary Technologies
Rambus	Initial public offering in 1997 with core focus on product licensing	Semiconductors
Rovi	Operating company with PAE activity (first PAE litigation in 2007)	Digital entertainment
SITO	Operating company with PAE activity (first PAE litigation in February 2012)	Mobile search, commerce, advertising and streaming media
Spherix	Reverse merger (announced 2/22/13)	Mobile Communications and Devices
Tessera Technologies	Initial public offering in 2004	Semiconductors
Unwired Planet	Began focusing on PAE activity in May 2012 (previously an operating company)	Mobile Communications and Devices, E-commerce and Software
VirnetX	Reverse merger (announced 1/19/07)	Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution, Mobile Communications and Devices, Networking
Vringo	Reverse merger (announced 3/14/12)	E-commerce and Software
Walker Innovation	Reverse merger (announced 7/15/13)	Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution, Mobile Communications and Devices, Networking
WiLAN	PAE activity since 2007	Consumer Electronics and PCs, Mobile Communications and Devices, Networking

Profiles

Methodology Note:

"Reported Patent Count" refers to the number of patents or portfolios the PAE claims to hold; this count may differ from the number of patent assignments the PAE has recorded with the USPTO.

Acacia Research Corporation

Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution, Medical, Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$3.79	Acacia Research Corporation is headquartered in Newport Beach, California. It was founded in 1993, went public in 1995, and began asserting patents in litigation in 2000. The PAE has at least 230 subsidiaries and 30 affiliates, only a small portion of which use the Acacia name. As of June 2016, Acacia has taken nine cases to trial, only one of which ended in the PAE's favor. Acacia lost two trials in Q4 2015. In November 2015, a Texas jury found that Reflectix did not infringe a group of four Promethean Insulation Technology LLC patents. The jury also concluded that the asserted claims of each of the patents-in-suit (which generally relate to thermal insulation) are invalid. In a December 2015 trial against Alcatel-Lucent, AT&T, Sprint, and
Market Cap (\$USD M)	\$191.2	
52-week High	\$12.51	
52-week Low	\$2.82	
Cash (\$USD M)	\$156.9	
Debt (\$USD M)	\$0.0	
Employee Count	42	
Reported Patent Count	Over 200 portfolios	

Verizon (Cellco), a Texas jury found that the defendants did not infringe an Adaptix patent related to OFDMA-based broadband wireless networks. Immediately following that trial loss, Acacia announced the resignation of Matthew Vella as CEO. In the first quarter of 2016, Acacia disclosed license and settlement agreements with DePuy and Soproema and a license agreement with Sony.

Crossroads Systems, Inc.

E-commerce and Software, Networking

Stock Price (as of 03/31/16)	\$4.20	Crossroads Systems, Inc. is a former provider of data storage solutions and security. Founded in 1996 and headquartered in Austin, Texas, Crossroads reports owning more than 100 patents as of March 2016. In the fourth quarter of 2015, Crossroads announced that it had secured \$10M in financing to litigate its storage virtualization patent portfolio, an investment led by Techquity. In a press release, Crossroads reported that it used \$2.7M of the proceeds to retire its credit facility with a Fortress Credit affiliate and added the remaining \$7.3M to its cash balance to fund litigation-related expenses. According to the same press release, Crossroads has licensed the 5,941,972 patent family to 51 companies for over \$60M. Six cases involving patents from the '972 patent family, filed
Market Cap (\$USD M)	\$5.1	
52-week High	\$53.00	
52-week Low	\$3.00	
Cash (\$USD M)	\$7.7	
Debt (\$USD M)	\$0.0	
Employee Count	6	
Reported Patent Count	Over 100	

against Cisco, Dot Hill, Huawei, Oracle, NetApp, and Quantum, are currently stayed pending *inter partes* review (IPR) of the patents-in-campaign. In the first quarter of 2016, the Patent Trial and Appeal Board (PTAB) ruled that multiple claims of two of the patents asserted in those cases (7,051,147; 7,934,041) are invalid as obvious. Crossroads has since appealed those decisions to the Federal Circuit (2016-2017, -2026, -2027; the appellant's opening brief is due July 11, 2016). Also during Q1 2016, in an infringement suit filed by Dot Hill Systems against Crossroads, the parties moved for a stay to allow for time to finalize a settlement agreement. (The case was dismissed with prejudice in May 2016.) Crossroads has not lodged any new patent cases since September 2014.

Document Security Systems, Inc.

E-commerce and Software, Media Content and Distribution, Networking

Stock Price (as of 03/31/16)	\$0.19	Document Security Systems, Inc. (DSS) operates through four segments, with DSS Technology Management, Inc. (DSS TM) primarily responsible for acquiring and/or developing patented technology for the purpose of monetizing those assets through various means, including litigation. DSS reportedly owns over 100 US patents, including former Bascom Research, BBN Corporation, Cypress, and Dongbu patents. Since October 2012, DSS has asserted a total of nine patents in litigation against more than 15 operating companies. In early 2015, a California judge tossed DSS's infringement suit against Facebook and LinkedIn and invalidated claims of four of its	Bascom patents, leading to a \$37M impairment charge and a reported overhaul of the PAE's patent monetization strategies. In the first quarter of 2016, DSS announced that it had defaulted on \$4.65M in debt to Fortress Credit, possibly allowing for Fortress to take full ownership and control of ten semiconductor patents. As of June 2016, DSS has open district court cases against Apple, Intel, Samsung, SK Hynix, and Qualcomm; however, each of those cases is currently stayed pending IPR of the patents-in-campaign.
Market Cap (\$USD M)	\$9.6		
52-week High	\$0.45		
52-week Low	\$0.11		
Cash (\$USD M)	\$1.3		
Debt (\$USD M)	\$7.7		
Employee Count	104		
Reported Patent Count	Over 100		

Endeavor IP, Inc.

Mobile Communications and Devices

Stock Price (as of 03/31/16)	\$0.00	Endeavor IP, Inc. is a development stage company engaged in the commercialization of IP assets. It is a Nevada corporation currently located at a residential address in Half Moon Bay, California. Prior to June 2012, it operated as a workplace ergonomic consultancy under the name Finishing Touches Home Goods Inc. Endeavor reportedly owns at least six patents, purchasing wireless network patents from Mesh Comm, LLC and energy monitoring system patents from Solid Solar Energy, Inc. Endeavor incorporated two subsidiaries to assert these patents: Endeavor MeshTech, Inc. and Endeavor Energy, Inc. Endeavor appears to have a single employee,	Franciscus Diaba, its CEO and Chairman. It has two other directors: Andrew Uribe, an executive with no prior experience in intellectual property acquisition or enforcement, and David Waldman, an investor relations consultant. Endeavor has filed nearly 30 infringement suits since July 2013, mostly through Endeavor MeshTech. The PAE did not disclose any new licensing agreements during the first quarter of 2016, but it did file new infringement suits against Ericsson (as well as its subsidiary BelAir Networks) and Rajant Corporation, bringing the total number of defendants in its Endeavor MeshTech campaign to 25 as of June 2016.
Market Cap (\$USD M)	\$0.2		
52-week High	\$0.00		
52-week Low	\$0.00		
Cash (\$USD M)	\$0.0		
Debt (\$USD M)	\$0.1		
Employee Count	1		
Reported Patent Count	6		

Finjan Holdings, Inc.

Web and Network Security

Stock Price (as of 03/31/16)	\$0.91	Finjan Holdings, Inc. was formed in June 2013 as a result of a reverse merger of Finjan, Inc. with Converged Organics, a fertilizer company. The entity's primary business is to monetize the IP portfolio of Finjan, Inc., a former operating company that was founded in 1997 as an online security technology provider. M86 Security acquired Finjan, Inc.'s assets and business operations in 2009, but the company retained its IP portfolio. In 2013, Finjan appointed Phil Hartstein, formerly an IPNav vice president, as its CEO. Finjan and its subsidiaries have filed 13 infringement suits since 2006, mostly in 2013-2014. In August	2015, a jury in the Northern District of California awarded Finjan \$39.5M after a two-week patent infringement trial against Blue Coat. Finjan is now seeking over \$7M in attorney fees from Blue Coat, and on June 13, 2016, the PAE filed a notice with the court citing the Supreme Court's recent decision on enhanced damages in <i>Halo</i> and <i>Stryker</i> . While Finjan did not disclose any new licensing agreements during Q1 2016, in the second quarter of this year, the PAE announced that it had reached a \$10.9M settlement with Proofpoint, ending its three-year infringement litigation against the company.
Market Cap (\$USD M)	\$20.7		
52-week High	\$2.80		
52-week Low	\$0.81		
Cash (\$USD M)	\$5.1		
Debt (\$USD M)	\$0.0		
Employee Count	14		
Reported Patent Count	46		

InterDigital, Inc.

Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$55.65	InterDigital, Inc. was founded in 1972 and went public in 1981.
Market Cap (\$USD M)	\$1,947.5	The NPE has at least 30 subsidiaries and a large patent portfolio, including over 200 US patents issued in 2014 alone;
52-week High	\$60.69	the patents primarily relate to mobile and networking technologies. Only one of InterDigital's US cases, filed against
52-week Low	\$41.01	ZTE in 2013, remains active. Two trials have been held in that case: in one (held in October 2014, covering three patents), a
Cash (\$USD M)	\$658.7	jury found in favor of InterDigital. In a second trial covering a
Debt (\$USD M)	\$262.6	fourth patent (held in April 2015), a different jury sided with
Employee Count	330	ZTE. In mid-March 2016, District Judge Richard Andrews
Reported Patent Count	20,400	denied ZTE's motion for judgment as a matter of law, or, in the

alternative, a new trial with respect to two of the patents-in-suit. A decision on the motion with respect to a third patent has been postponed pending InterDigital's appeal of a 2015 decision issued by the International Trade Commission (ITC), ruling that a set of related patents were either not infringed or invalid. InterDigital did not disclose any new licensees during the first quarter of 2016, but just as that quarter had ended, the PAE announced that it had amended its worldwide, non-exclusive patent license agreement with NEC. The license was reportedly amended to "to add coverage for 4G technologies".

Inventergy Global

Consumer Electronics and PCs, Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$1.99	Inventergy Global launched in June 2013 and became a public entity through a reverse merger with eOn Communications Corp. on December 18, 2013. CEO Joe Beyers was formerly the head of IP licensing for HP; Paul Roberts, the vice president of IP licensing, was formerly at patent assertion entity Rovi; and general counsel Wayne Sobon was previously at Rambus.
Market Cap (\$USD M)	\$8.4	Beyers has repeatedly loaned Inventergy money since 2013, and in April 2015, the entity replaced its full-time CFO with a contract CFO to cut costs. According to USPTO records, Inventergy has received patent assignments from a number of
52-week High	\$4.90	
52-week Low	\$0.71	
Cash (\$USD M)	\$0.9	
Debt (\$USD M)	\$11.8	
Employee Count	8	
Reported Patent Count	718	

operating companies, including Alcatel-Lucent, Huawei, Matsushita Electric Industrial Company, Nokia, and Panasonic. As of June 2016, the PAE does not have any active infringement cases and has not filed any new actions since February 2016. During the first quarter of 2016, Inventergy disclosed that it had amended its agreements with Panasonic and Fortress Credit, thus eliminating payments due to the companies at the end of 2016 totaling \$6M, reducing its overall debt liabilities by \$17.3M and freeing up cash to fund its patent monetization efforts.

ITUS Corporation

Consumer Electronics and PCs, E-commerce and Software, Mobile Communications and Devices

Stock Price (as of 03/31/16)	\$3.01	ITUS Corporation develops, acquires, licenses, and enforces patented technologies for the purposes of patent monetization and assertion. Formed in 1982, it was originally an operating company called Copytele, Inc. offering a line of encryption products. It began significant patent enforcement activity in early 2013, changing its name to ITUS in September 2014. The PAE reportedly holds over 100 patents and patent applications that it organizes into the following areas: Key Based Web Conferencing Encryption, Encrypted Cellular Communications, E-Paper Electrophoretic Display, Nano Field Emission Display (nFED), Micro Electro Mechanical Systems Display (MEMS),
Market Cap (\$USD M)	\$26.3	
52-week High	\$8.95	
52-week Low	\$1.75	
Cash (\$USD M)	\$6.1	
Debt (\$USD M)	\$0.0	
Employee Count	6	
Reported Patent Count	8 portfolios	

Loyalty Conversion Systems, J-Channel Window Frame Construction, VPN Multicast Communications, Internet Telephonic Gateway, and Enhanced Auction Technologies. ITUS has filed over 40 patent infringement suits since 2013, only one of which remains active as of the date of this report. However, that case—filed by ITUS subsidiary VPN Multicast Technologies LLC against AT&T and Dimension Data in October 2014—appears to be winding down. VPN Multicast and AT&T have moved to stay deadlines in the case pending settlement discussions. (Dimension Data was dismissed without prejudice in June 2015.) ITUS has not filed any new infringement suits since 2014.

Marathon Patent Group, Inc.

E-commerce and Software, Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$1.99	American Strategic Minerals Corporation changed its name to Marathon Patent Group, Inc. in February 2013. It was incorporated in 2010 and is based in Alexandria, Virginia.	patents to 662. The deal (valuated at \$91M) fell through in February 2016. Also during the first quarter of 2016, Marathon announced that it would begin commercializing HP Inc. patented technology through an "IP commercialization" entity called 3D Nanocolor Corp.
Market Cap (\$USD M)	\$29.8	Marathon reports holding over 330 patents from various sources, including from individual inventors to Fortune 500 companies. Since 2008, the NPE has filed hundreds of cases against operating companies. In August 2015, Marathon and Uniloc Luxembourg SA announced an agreement to merge, reportedly bringing the combined total of active defendants to 119, trials on calendar through 2017 to 101, and portfolio of	
52-week High	\$6.24		
52-week Low	\$1.29		
Cash (\$USD M)	\$1.4		
Debt (\$USD M)	\$21.9		
Employee Count	6		
Reported Patent Count	331		

Network-1 Technologies, Inc.

Networking, Consumer Electronics and PCs, Media Content and Distribution, and E-commerce and Software

Stock Price (as of 03/31/16)	\$1.91	Network-1 Technologies, Inc. is a patent licensing firm, founded in 1990, that has filed almost 20 suits, together with subsidiary Mirror Worlds Technologies, LLC, since 2004. The PAE reportedly owns over 25 patents, all acquired from other sources, including some developed by Mirror Worlds prior to its acquisition. Network-1 has asserted only a handful of patents in litigation; it has not taken any case to trial. Most of Network-1's operating income comes from licensing the 6,218,930 patent, which has purportedly generated \$70M since 2007. In May 2014, claims of the '930 patent emerged unscathed from an IPR initiated by Avaya, Dell, Sony, and HP. On appeal, the Federal	Circuit upheld that ruling. The majority of Network-1's active cases are in the '930 litigation campaign, which targets products that utilize the Power over Ethernet standard. Active defendants include Allied Telesis, Avaya, Canon (Axis), Dell, Huawei, Juniper, NEC, Nokia (Alcatel-Lucent), Samsung, ShoreTel, and Sony. In December 2015, in an ongoing case against Apple, a Texas judge barred the defendant from challenging the validity of another Mirror Worlds data patent (6,006,227) because it had been declared valid in a previous litigation between the same two parties. Network-1 has not filed any new infringement suits since 2014.
Market Cap (\$USD M)	\$44.5		
52-week High	\$2.99		
52-week Low	\$1.49		
Cash (\$USD M)	\$21.8		
Debt (\$USD M)	\$0.0		
Employee Count	3		
Reported Patent Count	27		

ParkerVision, Inc.

Mobile Communications and Devices, Semiconductors

Stock Price (as of 03/31/16)	\$3.13	ParkerVision, Inc. claims that it designs, develops, and markets proprietary radio frequency (RF) technologies and products for use in semiconductor circuits for wireless communication products in the US. Current CEO Jeffrey L. Parker is a named inventor on several of ParkerVision's patents, which reportedly total over 300. The PTAB has instituted IPRs of several ParkerVision patents based on petitions filed by RPX, leading to the cancellation of multiple patent claims. In July 2015, the Federal Circuit denied ParkerVision's attempt to reinstate a \$173M trial win against Qualcomm, which a district court judge had vacated in June 2014. The appeals court also denied a	subsequent request for an <i>en banc</i> rehearing. In February 2016, ParkerVision filed a petition for a writ of <i>certiorari</i> , which the Supreme Court the following month. During the first quarter of 2016, the PTAB instituted review of yet another two ParkerVision patents, this time in proceedings initiated by Qualcomm. On March 8, 2016, the Board instituted trial for over 60 claims of ParkerVision's 6,091,940 patent and a dozen claims of its 7,966,012 patent, finding that Qualcomm was likely to prevail on its obviousness challenge to the claims.
Market Cap (\$USD M)	\$35.9		
52-week High	\$8.50		
52-week Low	\$1.46		
Cash (\$USD M)	\$7.9		
Debt (\$USD M)	\$0.8		
Employee Count	22		
Reported Patent Count	320		

Patriot Scientific

Consumer Electronics and PCs, Media Content and Distribution, Media Content and Distribution, Mobile Communications and Devices, Networking, Semiconductors

Stock Price (as of 03/31/16)	\$0.01	Patriot Scientific Corporation is based in Carlsbad, California and currently has only three employees, including a CFO who is also serving as an interim CEO. (The other two employees are directors.) Patriot, together with its subsidiaries Technology Property Limited LLC and Phoenix Digital Solutions LLC, has filed over 20 patent infringement suits since 2003; past defendants include Acer, Amazon, ASUS, Barnes & Noble, HTC, Huawei, Kyocera, NEC, Fujitsu, Samsung, Toshiba, and ZTE. In October 2013, a jury in the Northern District of California found that HTC infringed multiple claims of the PAE's 5,809,336
Market Cap (\$USD M)	\$2.4	
52-week High	\$0.05	
52-week Low	\$0.00	
Cash (\$USD M)	\$3.7	
Debt (\$USD M)	\$0.0	
Employee Count	3	
Reported Patent Holding	5	

patent and awarded Patriot \$959K in damages. In October 2014, Patriot announced that it had retained Dominion Harbor Group to license its Moore Microprocessing patent portfolio, which includes the '336 patent. Patriot has not filed any new infringement litigation since 2012, and all of its cases have either terminated or been stayed for various reasons, including an ongoing International Trade Commission investigation related to the '336 patent.

Pendrell Corporation

Mobile Communications and Devices, E-commerce and Software

Stock Price (as of 03/31/16)	\$0.53	Pendrell Corporation is a patent investment company that acquires both patents and patent holding entities. The PAE began as an operating company named ICO Global and was involved in satellite communication through the 1990s and 2000s. In June 2011, the company renamed itself and began licensing efforts. Pendrell reports holding 1,200 patents and applications; its largest portfolio, held by ContentGuard Holdings, Inc., includes patents related to digital rights management (DRM). Others relate to media content, networking, semiconductors, data storage/security, and wireless communication. ContentGuard Holdings, the only
Market Cap (\$USD M)	\$141.9	
52-week High	\$1.71	
52-week Low	\$0.45	
Cash (\$USD M)	\$169.9	
Debt (\$USD M)	\$0.0	
Employee Count	16	
Reported Patent Holding	1,200	

Pendrell subsidiary that has filed any patent litigation, has filed six cases to date, all in a single litigation campaign targeting devices that offer access to content distribution services utilizing DRM. Active defendants in the campaign include Apple, Huawei, HTC, and Lenovo (Motorola Mobility). In September 2015, a Texas jury found that Alphabet (Google) and Samsung did not infringe a group of ContentGuard's DRM patents, resulting in a \$103.5M impairment charge in the fourth quarter of 2015. While the jury found in favor of the defendants with respect to infringement, it upheld the validity of the patents-in-suit.

Quest Patent Research Corporation

Consumer Electronics and PCs, Semiconductors, Mobile Communications and Devices, E-commerce and Software, Financial Services

Stock Price (as of 03/31/16)	\$0.01	Quest Patent Research Corporation (QPRC) (incorporated as Phase-Out of America, renamed Quest Products Corporation, and renamed again to Quest Patent Research Corporation in 2007) began as a maker of a smoking cessation product and shifted to patent monetization in 2008. Jon C. Scahill has been an executive of QPRC since May 2007 and is currently the NPE's president and CEO. Scahill holds himself out as a patent attorney with a BS in chemical engineering, an MBA, and a JD. QPRC also identifies Tim Scahill as CTO (since 2007) and Peter LaFauci as CFO (since July 2014), LaFauci apparently providing financial services through his own separate consultancy (cfosolutions2go.com). QPRC appears to have organized its
Market Cap (\$USD M)	\$2.9	
52-week High	\$0.02	
52-week Low	\$0.00	
Cash (\$USD M)	\$0.2	
Debt (\$USD M)	\$0.8	
Employee Count	16	
Reported Patent Count	8 portfolios	

patent holdings into at least seven portfolios, three of which were acquired from Intellectual Ventures LLC (IV) in October 2015. Since that acquisition, the PAE has ramped up its litigation activity, filing over 20 patent infringement suits in the first half of 2016 alone, compared to eleven in 2015 and fifteen in 2014. The majority of QPRC's 2016 suits have been filed by its Mariner IC Inc. and Semcom IP Inc. subsidiaries, which appear to have been created specifically to assert patents received from IV. As of June 2016, QPRC has filed over 60 patent infringement suits; all of its cases filed prior to 2016 have terminated, and the majority of its 2016 suits are active, all in the early stages of litigation.

Rambus, Inc.
Semiconductors

Stock Price (as of 03/31/16)	\$13.75	Rambus, Inc. is a technology development and licensing company that was founded in 1990. Since 2000, Rambus has filed almost 30 suits involving more than 50 patents. The entity reportedly owns a portfolio of over 1,800 US patent assets, all of which relate to various aspects of semiconductor technology.	to Acacia Research Corporation in 2013, some of which are now involved in an active campaign. In August 2015, Rambus announced that it would become, at least in part, a fabless chip company, hiring third parties to manufacture the chips that it designs. During the first quarter of 2016, Rambus disclosed license agreements with The Athena Group and Altis Semiconductor, an extension of its license agreement with Advanced Micro Devices, and the acquisition of Smart Card Software Ltd (which includes Bell Identification, “a leader in mobile payments”, and Ecebs, “a leading supplier of smart ticketing systems in the UK”).
Market Cap (\$USD M)	\$1,511.1	Rambus also has an active licensing program for the technology that it develops. Rambus has secured substantial revenues from its patent enforcement programs, including a \$397M damages award against Hynix Semiconductor in March 2009 and a \$900M settlement with Samsung in January 2010. It has not filed new litigation since 2010, but it sold a portfolio of patents	
52-week High	\$15.49		
52-week Low	\$9.86		
Cash (\$USD M)	\$225.6		
Debt (\$USD M)	\$159.6		
Employee Count	495		
Reported Patent Count	1,871		

Rovi Corporation
Digital Entertainment

Stock Price (as of 03/31/16)	\$20.51	Rovi Corporation, formerly known as Macrovision Solutions Corporation, began as an operating company selling digital entertainment services. Since its rebranding in 2009, the entity has primarily focused on licensing its patent portfolio.	2016 was quiet for Rovi, in Q2 2016, the PAE filed its first new litigation in years (against Comcast, in both district court and in the International Trade Commission) and also announced that it intends to acquire TiVo in a \$1.1B deal.
Market Cap (\$USD M)	\$1,708.4	According to SEC filings, Rovi owns over 5,000 patent assets and derives more than half of its revenue from licensing. In July 2015, in a declaratory judgment action brought by Netflix, a judge in the Northern District of California invalidated five Rovi patents under <i>Alice</i> ; Rovi’s appeal of the trial court’s decision to the Federal Circuit is mid-briefing. While the first quarter of	
52-week High	\$23.70		
52-week Low	\$8.01		
Cash (\$USD M)	\$192.3		
Debt (\$USD M)	\$992.3		
Employee Count	1,100		
Reported Patent Count	5,500		

SITO Mobile, Ltd.
Mobile Search, Commerce, Advertising and Streaming Media

Stock Price (as of 03/31/16)	\$2.55	SITO Mobile, Ltd., formerly Single Touch Systems, Inc., is an operating company that began monetizing its patents in 2012. SITO’s mobile platform purportedly enables clients to send personalized messages and ads to customers based on their user preferences and purchase histories. SITO made a series of announcements in late 2014 that signaled a shift in its business model, including a \$10M credit facility and a \$1M equity investment received from Fortress Investment Group. The loan is secured by SITO’s patent portfolio. In July 2015, SITO acquired the mobile advertising business from Hipcricket, which filed for bankruptcy, and in August 2015, SITO	announced that its stock would begin trading on the NASDAQ exchange. The company has asserted only three of its patents in litigation, in 2012 cases against Zoove (which settled following less than a year of litigation) and Hulu (dismissed without prejudice within four months of filing). According to a SITO press release, under an amended patent license agreement signed in the fourth quarter of 2015, SITO received a payment of \$550K from Zoove. SITO has not filed any new litigation since 2012 and did not disclose any new license agreements during the first quarter of 2016.
Market Cap (\$USD M)	\$43.8		
52-week High	\$6.15		
52-week Low	\$1.55		
Cash (\$USD M)	\$0.0		
Debt (\$USD M)	\$7.7		
Employee Count	51		
Reported Patent Count	22		

Spherix, Inc.

Mobile Communications and Devices

Stock Price (as of 03/31/16)	\$1.81
Market Cap (\$USD M)	\$5.3
52-week High	\$16.32
52-week Low	\$1.52
Cash (\$USD M)	\$2.0
Debt (\$USD M)	\$0.4
Employee Count	4
Reported Patent Count	Over 330

Spherix, Inc. began as a research company in 1967 and owns more than 300 patents and applications, including a portfolio acquired from Rockstar Consortium in July 2013. Many of its patents relate to various aspects of wireless communication and networking. Spherix began asserting patents in litigation in 2011, filing most of its cases in 2013 and 2014. During the first quarter of 2016, the PTAB invalidated claims of a cordless telephone patent that the Spherix had asserted against Uniden and VTech. Also in Q1 2016, Spherix announced that it had entered into a collaborative agreement with Equitable IP to

monetize Spherix's CompuFill patent portfolio, which it says is related to telephonic refilling of patient prescriptions.

Tessera Technologies, Inc.

Semiconductors

Stock Price (as of 03/31/16)	\$31.00
Market Cap (\$USD M)	\$1,550.5
52-week High	\$41.61
52-week Low	\$26.21
Cash (\$USD M)	\$363.4
Debt (\$USD M)	\$0.0
Employee Count	264
Reported Patent Count	4,036

Tessera Technologies, Inc. is an operating company that began asserting its patents in litigation in 2000. The former designer of semiconductor miniaturization technologies underwent a "turnaround campaign", or shareholder intervention, led by Starboard Value LP in 2013, resulting in a new focus on patent monetization. As of March 2016, Tessera has at least 40 known subsidiaries and 11 subsidiaries. In August 2015, Tessera acquired Ziptronix, Inc., a semiconductor company with patent holdings of its own, as well as an ongoing patent case against OmniVision and TSMC. Tessera reports holding over 4,000 US patents, more than 25 of which have been asserted by Tessera in litigation (mostly against chip manufacturers and companies

that make and/or sell electronics that include semiconductor chips). Defendants have included Acer, AMD, Freescale, Hitachi, Motorola Mobility, Qualcomm, Spansion, and STMicro. In August 2015, a California state court confirmed an arbitration award of over \$125M to Tessera by Amkor for violation of a license agreement. Following disappointing earnings in Q1 2016, Tessera filed its first infringement actions since 2012, suing Broadcom in two district court suits and in a complaint lodged with the ITC. Tessera disclosed just one license agreement—with Sandia National Labs—in the first quarter of 2016.

Unwired Planet, Inc.

Mobile Communications and Devices, E-commerce and Software

Stock Price (as of 03/31/16)	\$9.73
Market Cap (\$USD M)	\$91.3
52-week High	\$13.20
52-week Low	\$6.48
Cash (\$USD M)	\$55.9
Debt (\$USD M)	\$33.4
Employee Count	16
Reported Patent Count	2,500

Unwired Planet, Inc., is an operating company turned patent assertion entity. In 2012, the PAE (then named Openwave Systems) announced that it was changing its name to Unwired Planet and that it would begin focusing exclusively on the monetization and enforcement of its patent portfolio. The entity changed its name again in June 2016, to Great Elm Capital Group, Inc., the same month that it announced a potential acquisition by Leslie Ware's Optis UP of its entire patent portfolio. As of the date of this report, that deal remains pending, and Unwired Planet (now Great Elm) continues to be led by CEO Boris Teksler, a former IP executive at several high

tech companies (including HP and Apple), who left Technicolor to join Great Elm in June 2015. Great Elm reportedly holds over 2,000 patent assets, many of them acquired in a controversial deal with Ericsson, which the PAE says focus exclusively on mobile technologies. The entity has filed six infringement suits since 2009, asserting over 30 patents against defendants including Apple, Google, and Square. In the fourth quarter of 2015, Great Elm won a trial in the UK against Huawei and Samsung. The PAE has no active cases in the US as of June 2016.

VirnetX, Inc.

Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution, Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$4.59	VirnetX, Inc. develops and asserts security technology patents.
Market Cap (\$USD M)	\$250.1	At least 20 of VirnetX's patents originated with Science Application International Corporation, a defense contractor that formerly employed VirnetX's founders as well as its current CTO and Chief Scientist. Kendall Larsen is President and CEO; his prior experience includes a senior position at CIA contractor Phoenix Technologies. On the basis of regulatory filings, it appears that Larsen has used VirnetX shares as collateral for personal lines of credit. VirnetX has filed ten infringement suits since 2007 against companies including
52-week High	\$9.64	
52-week Low	\$1.95	
Cash (\$USD M)	\$17.9	
Debt (\$USD M)	\$0.0	
Employee Count	20	
Reported Patent Count	Over 190	

Apple, Cisco, and Microsoft. In February 2016, a Texas jury handed down a \$625.6M verdict in VirnetX's 2012 lawsuit against Apple. The jury found that the company's FaceTime and iMessage features infringe two secure networking patents (7,418,504; 7,921,211) and that the latest version of its VPN On Demand feature infringes two other patents from the same family (6,502,135; 7,490,151). Apple has since appealed that decision with the Federal Circuit (2016-119). Also during the first quarter of 2016, the PTAB denied VirnetX's attempt to bar Apple from joining IPRs initiated by Mangrove Partners of the '135 and '151 patents.

Vringo Inc.

Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution, Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$1.64	Vringo, Inc. is a PAE that merged with Innovate/Protect, itself a privately held PAE, in July 2012. The reverse merger resulted in the acquisition of a portfolio of patents that originated with Lycos as well as Innovate/Protect subsidiary I/P Engine. In May 2016, Vringo announced that it was changing its name to FORM Holdings, thus "formalizing" the PAE's "transformation into a diversified holding company". As of June 2016, FORM has filed seven infringement suits in the United States, asserting a total of six patents. Only two of those cases—one filed by Iron Gate Security, Inc., the other by Quantum Stream Inc., both lodged in late 2015—are open as of the date this report. In August 2014, the Federal Circuit invalidated claims
Market Cap (\$USD M)	\$24.1	
52-week High	\$7.69	
52-week Low	\$1.18	
Cash (\$USD M)	\$20.6	
Debt (\$USD M)	\$0.6	
Employee Count	26	
Reported Patent Count	Over 600	

of two FORM patents asserted against AOL, Gannet, Google, IAC, and Target, reversing a 2012 jury verdict that ordered the defendants to pay I/P Engine \$30M. In December 2014, the Federal Circuit denied FORM's bid for an *en banc* rehearing of the case, and in October 2015, the Supreme Court denied the PAE's petition for a writ of *certiorari*. FORM is engaged in ongoing litigation outside the US, particularly against various international ZTE entities. However, in December 2015, the PAE announced that it had reached a settlement with ZTE for \$21.5M that will ultimately resolve all pending litigation between the parties.

Walker Innovation Inc.

Consumer Electronics and PCs, E-commerce and Software, Media Content and Distribution,
Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$0.33	Walker Innovation Inc. is an inventor-controlled entity that
Market Cap (\$USD M)	\$6.8	formed in 2013 as a result of a reverse merger of Global
52-week High	\$2.20	Options Group with Walker Digital, LLC. Walker Innovation
52-week Low	\$0.13	changed its name from Patent Properties, effective July 31,
Cash (\$USD M)	\$5.8	2015. The entity is controlled by inventor and entrepreneur Jay
Debt (\$USD M)	\$0.0	Walker, the founder of Priceline. Walker Innovation reports
Employee Count	17	holding nearly 500 patents, many, if not all of which, name Jay
Reported Patent Count	493	Walker as an inventor. They relate to a range of technologies,

Innovation itself has not filed any patent litigation; however, two of its subsidiaries, Walker Digital LLC and Inventor Holdings LLC, have collectively sued over 150 companies in more than 60 infringement suits, none of which is now active. None of Walker's subsidiaries has filed any new litigation since 2014. On the same day Walker Innovation announced its Q1 2016 earnings (including total revenue of \$1.2M and a net loss of \$1.8M), it announced that it had ceased operations of its Haystack IQ product.

Wi-LAN Inc.

Consumer Electronics and PCs, Mobile Communications and Devices, Networking

Stock Price (as of 03/31/16)	\$2.28	Wi-LAN Inc. is a Canadian PAE that began litigating its patents
Market Cap (\$USD M)	\$275.8	in 2007. It was established in 1992 as an operating company
52-week High	\$2.51	selling products and licensing its inventions. In 2006, after
52-week Low	\$1.00	years of stagnant stock valuation, it became an assertion-only
Cash (\$USD M)	\$101.9	entity. Both Wi-LAN's CEO, Jim Skippen, and its COO, Michael
Debt (\$USD M)	\$26.8	Vladescu, came from MOSAID (now Conversant IP). Wi-LAN
Employee Count	47	reportedly made several bids to purchase MOSAID—an effort
Reported Patent Count	15,000	that eventually fell through in 2011. In June 2015, Skippen

created to assert patents acquired from Freescale (before its acquisition by NXP Semiconductors) in an October 2015 deal that involved over 3,300 patent assets. (Also in 2015, Wi-LAN acquired more than 7,000 Qimonda patents from Infineon Technologies.) During the first quarter of 2016, Wi-LAN disclosed license agreements with Yokogawa, BioTek, GLOBALFOUNDRIES, FEI, and Thermo Fisher. In February 2016, the PAE announced that it had acquired a portfolio of patents related to "wireless communication with peripheral and mobile devices", including applications in VoIP, from an undisclosed seller. That same month, Wi-LAN announced a partnership with Dominion Harbor Group, LLC, in which the firm would acquire certain (undisclosed) patent portfolios from the PAE, which will be managed by the Monument Bank of Intellectual Property.

About RPX

RPX Corporation (NASDAQ: RPXC) provides market-based and technology solutions to help corporate legal departments reduce the risk and costs associated with both patent litigation and legal discovery services. Our patent risk management services address NPE (non-practicing entity) patent litigation. Members of the RPX client network pay an annual fee that is calculated based on their net operating incomes. We then use this aggregated capital to acquire potentially problematic patents and rights from the pre-litigation market and out of active litigations before they can become a costly problem for our clients. RPX promises never to litigate or assert the patent assets it purchases.

In addition to our defensive patent acquisition service, RPX also facilitates syndicated transactions that include contributions from participating clients in addition to their annual subscription fees. Similar to other acquisitions, these syndicated deals are designed to efficiently share resources and collectively reduce litigation risk. And we offer unique NPE litigation insurance, written on A rated paper and backed by a Lloyd's underwriting syndicate. Further, RPX provides clients with in-depth industry data, market intelligence, and patent advisory services.

RPX subsidiary Inventus is a leading international discovery management provider focused on reducing the costs and risks associated with the discovery process through the effective use of technology solutions. Inventus has been providing litigation support services to corporate legal departments, law firms, and government agencies since 1991.

RPX has invested over \$2 billion to acquire more than 15,500 US and international patent assets and rights, achieved more than 1,000 litigation dismissals, and prevented more than 4,000 NPE litigations from occurring. Since our founding in 2008, we have saved our clients more than \$3.2 billion in avoided NPE legal and settlement costs.

The RPX network comprises nearly 290 clients in sectors including automotive, consumer electronics and personal computing, E-commerce and software, financial services, media content and distribution, mobile communications, networking, and semiconductors.

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