



# MDB Capital Group LLC

Seeing Value Others Do Not, Creating Value Others Can Not.

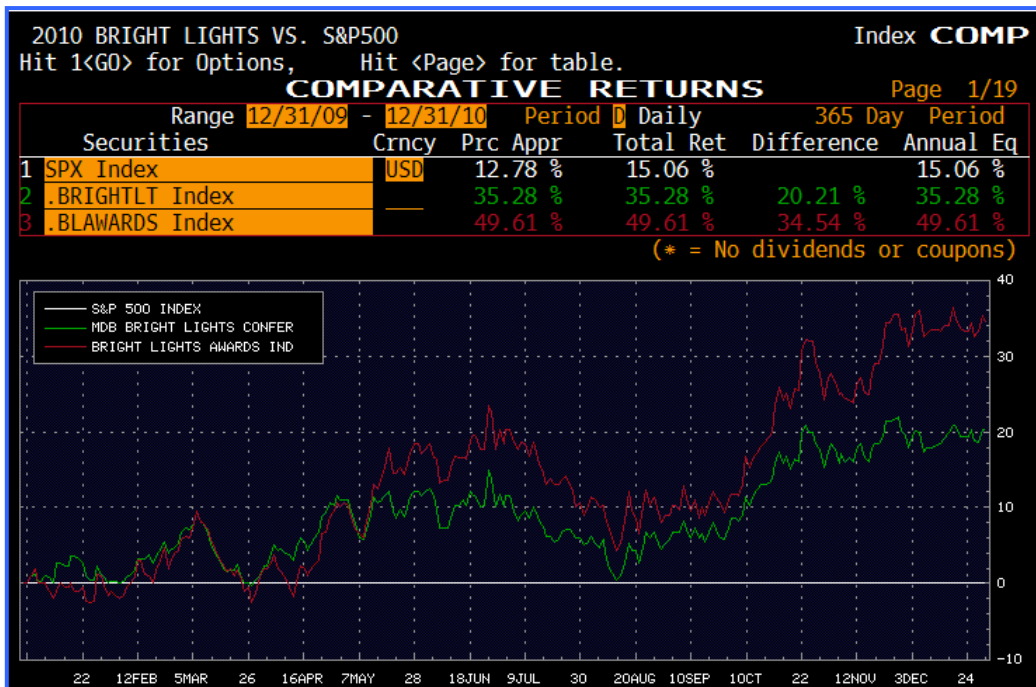
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## THE 2011 “BEST AND BRIGHTEST”

MDB COMPANIES TO WATCH

CAPTURING ALPHA IN THE IP ASSET CLASS

### INTRODUCTION



It is increasingly clear that intellectual property (IP) is a leading indicator of business performance and is a primary source of value creation in corporate entities. More than half of the market capitalization of the Wilshire 5000 is based upon intangible assets, totaling nearly \$7 trillion in market value. However, to date, intangible IP assets have lacked an adequate mechanism for price-discovery and therefore, have been difficult for investors to value and leverage. However, **emerging methods to quantify corporate IP are enabling price-discovery** and an appropriate valuation of patent assets. Following on our “Best and Brightest – Companies to Watch” report of last year (March of 2010), **this report expands on the**

**emergence of intellectual property as an investable asset class and introduces the 2011 MDB Capital Group “Best and Brightest – Companies to Watch” list.**

Despite the potential significance of intellectual property to an individual public company’s market value, huge inefficiencies remain in the valuation of these assets. The lack of adequate IP disclosure continues to contribute to an information void. For example, in regulatory filings, the standard IP discussion typically consists of a single sentence listing the number of granted and pending patents. Additionally, in most corporate investor presentations the existing IP is detailed in just a bullet point or two. The existing financial accounting standards view IP on an “if you can’t measure it, it doesn’t count” basis, similar in some respects to earlier views of off-balance sheet accounting practices. Compounding IP’s opaqueness is the ad hoc approach to innovation taken by many companies. According to IP Capital Group, a leading patent consultancy founded by John Cronin – former head of IBM’s Patent Factory, less than 4% of companies have a *unified IP process aligned with business issues* to competitively differentiate their products in order to gain market share and pricing power.

The result of this widespread inattention to IP as a real asset has been the perpetuation of rather inefficient market valuations for IP and a notable concentration of IP value in an elite group of companies. With inefficient markets, comes opportunity for outsized returns - and while IP value may be opaque, **it is highly concentrated (and thus identifiable) in a top quintile of IP leaders that have a codified approach to innovation and are investing in R&D at levels well above their respective peer groups. The key to capturing alpha through the appropriate valuation of IP lays in objectively identifying IP quality and leadership. With its proprietary PatentVest database platform, MDB Capital has developed a set of tools/metrics to reliably identify and quantify leading innovation so as to focus on the “Best and Brightest”.** To this point, the chart above details the market performance of the 2010



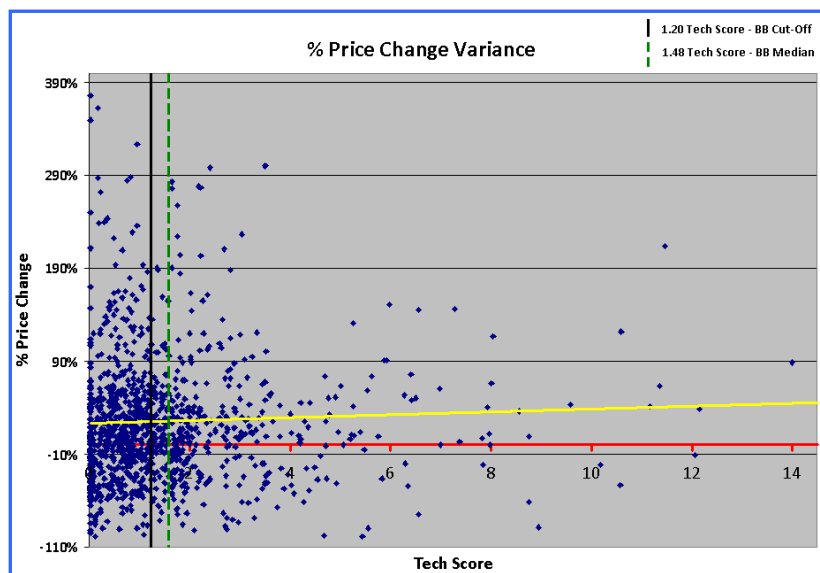
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“Best and Brightest” class of companies versus the S&P 500 and includes the performance of the presenting companies (as a group) at MDB Capital’s 1<sup>st</sup> Annual Bright Lights Conference (May of 2010). We note that the market performance of the Bright Lights presenters for calendar 2010 was 49.61%, a 34.5% premium to the S&P 500 and 23.3% above the S&P 600 Small Cap Index, highlighting the premise that leading IP correlates with improved business performance metrics and market price performance.

## KEY FINDINGS

As with the “Best and Brightest – Companies to Watch” report from 2010, we again compared this year’s “Best and Brightest” companies against a universe of micro-cap companies with patents (the MUP companies) utilizing MDB’s proprietary PatentVest database platform and the PatentVest IP metrics (the details of the MUP companies along with the individual PatentVest metrics are described in later sections of this report). Below we have identified several of the more notable conclusions obtained from the comparative data of the two groups.

- **Superior Risk-Adjusted Returns:** The data indicates that with nearly identical beta values for the 2011 “Best and Brightest” (BB) group (BB: 150 companies) compared to a Microcap Universe with Patents (MUP: 1,028 companies); **median beta for the BB group is 1.35 versus 1.31 for MUP and 1.20 for Russell 2000**. However, the median market return (52 Week % Price Change ending January 31, 2011) for the BB companies was 37% vs. 24% for MUP and just 28% for the Russell 2000. More importantly, the **One-year Alpha for the BB companies was +4.80% versus Russell 2000 benchmark**.
- **High R&D Intensity:** The BB companies demonstrated a strong focus on innovation with notably higher investments in R&D. Specifically, the median R&D spending as a percent of sales was 18% for the BB companies versus just 3% for the MUP companies. In turn, **patent grants were nearly 6x higher** (51 vs. 8) and patent applications 10x higher (34 vs. 3) for the BB group vs. the MUP companies – implying a robust pipeline of innovation, potentially yielding improved business performance and risk-adjusted returns through the creation of multi-year technology-product cycles.
- **Increased Market Share:** The BB companies were able to increase revenues during a period of relatively weak GDP growth, indicative of market share gains at the expense of less innovative competitors. The BB companies were able to grow revenues (ttm) by a median of 8% compared to 5% (a +59% difference) for the MUP companies.
- **Increased Pricing Power:** In addition, the data indicates that technology/IP leadership creates meaningful product differentiation which in turn allows for premium pricing and market performance. At the right is a chart of the PatentVest Tech Scores versus stock price performance for the MUP companies, clearly demonstrating improved market performance with an increasing Tech Score. Technology leadership/innovation is reflected in two key PatentVest metrics, Tech Score and the Isolation Ratio. The BB companies demonstrated a higher median Tech Score (1.48 vs. 0.90 for MUP companies) and a higher Isolation ratio (14% vs. 4% for MUP). This superior innovation resulted in markedly better gross margins/premium pricing and market price performance. For the BB group of companies the median gross margin was 45% compared to just 38% for the MUP companies – a 700 basis point margin differential.





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- Growth Potential/Hidden IP Gems:** Despite the BB companies' demonstration of notably better business performance, the group's full IP potential remains largely unrecognized by the market as reflected by the low median PV ratio of 2.34 compared to the median PV ratio of 10.43 for the MUP. The PV Ratio (see below) is a measure of patent value in relation to market value, and the low value for the BB companies implies that these companies are likely "IP Hidden Gems" that have the potential for considerable price appreciation as their respective IP value is recognized in the market.

## PATENTVEST: Correlating IP to Business Performance and Investment Returns

Building on the premise that patents are a leading indicator of innovation; the data clearly indicates that above-peer measurements of patent quality, patent impact and patent growth rates have shown to be predictive of above-peer value creation and future financial performance. **This remainder of this report examines the correlation of PatentVest IP metrics to several widely accepted measures of business performance; with the objective of further validating the link between corporate IP and such operating metrics as revenue growth, gross margin, R&D spending and most importantly, risk-adjusted return as measured by alpha.**

The screenshot shows the PatentVest Public Company Screener interface. At the top right, it identifies the user's PV Representative as Cesar Guerra. The main section is titled "Public Company Screener" and explains that it helps identify companies based on user-defined specifications. Below this, there's a table for filtering criteria:

Criteria	Operator	Value	Action
Grants	>=	[Input Field]	Add
Apps	>=	[Input Field]	Add
PV Ratio	>=	[Input Field]	Add

PatentVest, MDB's proprietary IP intelligence platform, utilizes financial market data and a bottom-up analysis of more than 4 million U.S. patents and more than 2 million U.S. patent applications to measure, score and rank more than 4,000 companies on the basis of the impact, differentiation, growth and value of their respective patent assets; as well as the strength and quality of their IP process. PatentVest supports traditional fundamental investment research done on a company-specific basis by objectively analyzing IP leadership, competitive differentiation, technology trends and various IP risk factors. More broadly, this methodology allows the benchmarking and segmenting of companies into discrete groups of stocks with defined IP characteristics, thereby enabling an asset class investment approach to IP

and the ability to capture alpha from this analysis of IP.

PatentVest's integrated database, search engine and analytics provide an objective framework to model IP for investment analysis and business intelligence. Along with a rich complement of information on a company's individual patents, the PatentVest analytic engine automatically assigns a number of proprietary IP related metrics to each company, using patent information updated weekly from the USPTO and both real-time and historical financial market data. Each of these metrics is presented in a standard PatentVest Report (see Appendix). These principal IP metrics include:

- PV Tech Score:** This important IP leadership and value metric measures the industry impact of a company's patents and is a quality indicator of a company's competitive position. This metric is based upon an analysis of the citation ratio of a company's patents relative to a cohort group of patents (by age, number) and reflects its influence within the marketplace by its peers.

The mean PV Tech Score is 1.0, the median score is 0.90 from more than 4,000 companies rated by PatentVest. A higher PV Tech Score is better, signifying technology leadership; while a score of 0.90 - 1.0 reflects parity with the cohort group. For example a score of 2.0 would indicate that a company's patents rank 2x higher than the cohort group. Currently, the top quintile has a Tech Score of 2.0 or higher while the bottom quintile has a Tech Score of 0.30 or lower.

- PV 3-Year Patent Application CAGR:** This important IP growth metric is the year-over-year, compound annual growth rate of the number of patent applications filed during the last 3 years. PatentVest only considers applications published more than 3 years



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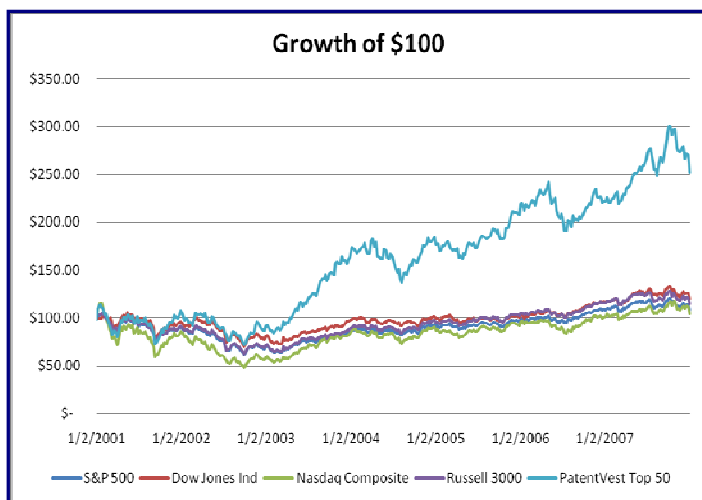
ago when calculating the rate. This means that, on average, each application will be at least 4.5 years from filing date. If it has not been granted at that point, it is considered it abandoned for purposes of conversion rate. The median 3-Year CAGR for 4,000 companies rated by PatentVest is +1.0%. Currently, the top quintile has an Application CAGR of +16.0%.

- **PV Depth Rating:** This IP leadership and value metric measures the degree of concentration or depth within an area of technology. It measures self-citations and is indicative of a company “widening the moat” around an area of innovation. High Depth Ratings reflect a high degree of difficulty for competitors to “design around” a body of patents and, therefore, is a measure of high defensibility. Most patents can be designed around, so not surprisingly, the median Depth Rating for the 4,000 companies in PatentVest is 0.30. Currently, the top quintile for Depth Rating is 1.0. Acknowledged technology leaders with very high barriers to entry typically have Depth Ratings > 2.0, such as Research In Motion 2.94 (Blackberry), Microsoft 3.11 (Windows) and Apple 3.74 (iPod, iPhone).
- **PatentVest Tech Isolation Rating:** This IP leadership and value metric measures the degree of isolation or novelty of a company’s technology from other companies. High isolation ratings indicate technology that is either the beginnings of a new area of innovation (i.e. classically disruptive) or developments that are not yet recognized. Median isolation rating for PatentVest’s 4,000 companies is 5.50%. High isolation ratings are >20%. Disruptive is above >50%. Isolation is measured by looking at the percentage of self-citations versus citations by non-affiliated entities and reflects the degree of interconnectedness of a company’s technology to its peers.
- **PV Ratio:** This IP value metric is a measure of the current market-cap per net patent grant and application, adjusted for age and conversion rate and quantifies a “Net Present Market Value” per “Unit of IP”. Similar to other “market multiple” valuation measures (e.g. Market Cap/Revenue or Market Cap/EBITDA), a lower number is generally more desirable from a prospective investor’s standpoint. The PV Ratio helps to identify and credit companies that are innovating new technology -- specifically companies that have significant patent portfolios and that are out of favor with the investment community.
- **Citation-Weighted PV Ratio:** This IP value and leadership metric operates similarly to the PV Ratio, but factors into the calculation a measure of patent quality based on the number of reverse citations of patents from unaffiliated entities. Citation-Weighted PV Ratio reflects current market-cap per net patent grant and application, weighted for citation ratios quantifies “Net Present Unit Value” of IP. This metric is useful in identifying and valuing companies that have significant patent portfolios (including patent value based upon peer-group validation) and that are out of favor with the investment community.

## MODELING IP GROWTH: PV Application CAGR

To highlight the value of the PatentVest metrics MDB has published several white papers explaining the use and predictive value of

these metrics. In the PatentVest white paper “Companies with Higher Rates of Technology Innovation Correlate with Superior Stock Price Performance Relative to Market Averages” by Byrne, Marlett, Mazzarella (May 2009), the 3-Year Compound Annual Growth Rate (CAGR) of patent applications on file is positively correlated with Stock Price Performance of publicly traded companies. The study was carried out by measuring U.S. patent application growth rates from 2001 through 2007 (which is the only relevant period that patent application data is available from the US Patent and Trademark Office). The study revealed that the group of companies ranking in the top 10% of the CAGR of patent applications (50 companies) substantially outperformed the indices: This group increased in value during the 7 yr period by 156% (median 49%) versus 20% for the Dow





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Jones Industrial Average, 4% for the NASDAQ Composite Index and 9% for the Standard and Poor's 500 Index.

Another key PatentVest metric is the Tech Score. In the white paper *“PatentVest Tech Score Correlates with Business Performance and Alpha in Micro-Cap Asset Class”* by Algaba, Hickman, Conley (February 2010), Tech Scores of micro-cap companies are associated with several widely accepted measures of business performance and the data clearly validates the link between corporate IP and such operating metrics as revenue growth, gross margin, R&D spending and most importantly, risk-adjusted return as measured by alpha. In order to determine the predictive value of Tech Score, the study examined two separate groups of 100 micro-cap companies. Using PatentVest’s Public Company Screener tool, two cohort groups were segmented solely on the basis of Tech Score, with one group consisting of 100 companies with High-Tech Score ratings (HTS) and the other group consisting of Low-Tech Score (LTS) ratings. The study found that, although the HTS group of micro-cap companies had nearly identical beta to LTS companies, HTS stocks generated significantly higher alpha; as well as higher revenue growth, higher gross margin and higher R&D spending resulting in higher numbers of patent grants and patent applications than their LTS counterparts. See the summary table below. For further details, please refer to the complete white paper.

**SUMMARY RESULTS**

	Tech Score	Grants	Appls.	Market Cap (\$ mm)	Price	Beta	Volume	52Wk % Price Change	Revenue Growth (ttm)	Gross Margins (ttm)	Operating Margins (ttm)	RD % Sales
MEAN HIGH TECH 100	3.49	57	22	116.14	\$5.17	1.47	205,446	95.84%	1.09%	44.08%	-74.88%	24.17%
MEAN LOW TECH 100	0.50	30	16	73.63	\$5.87	1.45	229,648	43.21%	-9.34%	33.15%	-211.51%	18.03%
DELTA	2.99	27	6	42.51	-\$0.69	0.02	-24,201	52.64%	10.43%	10.93%	136.62%	6.14%
PCT % DIFFERENCE	597.20%	88.54%	34.85%	57.73%	-11.81%	1.47%	-10.54%	121.82%	111.66%	32.97%	64.60%	34.03%

Both of these white papers as well as other PatentVest information and documentation can be found on the MDB Capital Group website [www.mdb.com](http://www.mdb.com).

**The “Best and Brightest” IP ASSET CLASS**

It is worth noting we have chosen to focus on the small and micro-cap sector as we believe this area of the public markets currently provides the most attractive valuations for intangible asset multiples (Price / Book) and therefore, the greatest leverage for the IP asset class as IP leadership and value is identified, quantified and priced into the underlying share prices.

	Russell 1000® Index	Russell 2000® Index	Micro-Cap® Universe	Best and Brightest (BB) Companies
Number of Holdings	859	1730	1406	150
Price/Book	2.27	2.01	1.76	1.97

- The small-cap / micro-cap segment of the public market is a very target-rich environment as roughly 45% of the 3,932 of the public companies that have patents are characterized as Russell Microcap-class or smaller, with 1,020 companies falling under \$195 million market cap and 581 companies with market caps below \$50 million.
- In general, the market multiples of small-caps and micro-caps are lower (cheaper). The **Russell Microcap® Index** (1,406 companies) trades at roughly **1.7X book** while the S&P 500 trades at about 2.2X book.



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- Additionally, smaller cap stocks have notably outperformed the larger cap indices for an extended period (see the chart below); a trend we believe is likely to continue.

With this backdrop, to arrive at the "Best and Brightest" list of companies, we utilized PatentVest to screen the public company database for the following criteria; 1) market capitalization or under \$500 million, 2) companies with at least one patent grant and 3) companies with annual revenues of at least \$1.0 million. This screening process resulted in a list of 1,028 public companies. Going forward we will refer to this benchmark group of companies as the "universe of micro-cap companies with patents" (MUP).

Periods ending: January 31, 2011			
Index name	1 Year	5 Years	10 Years
<b>Large-cap indexes</b>			
Russell 1000® Index	23.33	2.51	1.74
Russell Top 200® Index	19.73	1.92	0.06
<b>Small-cap indexes</b>			
Russell 2000® Index	31.36	2.64	5.77
Russell Small Cap Completeness® Index	33.00	4.05	4.99
Russell Microcap® Index	31.52	-0.79	6.13

Refining the "Universe" to arrive at the listing of the "Best and Brightest", involved the analysis and ranking of the 1,028 company Universe based on three of the more critical PatentVest metrics -- Tech Score, 3-Year Patent Applications CAGR, and number of Grants and Patent Applications. Using these metrics, those companies that ranked in the top 90<sup>th</sup> percentile of technology leadership were incorporated into the list of the "Best and Brightest". This group of companies was trimmed somewhat further to meet a quality screen by the MDB analytical staff. The process resulted in the 2011 "Best and Brightest" list of 150 companies (BB). These companies are ranked in the top 90<sup>th</sup> percentile for technology leadership and they represent the most innovative small-cap companies across the technology spectrum including: Technology, Life Science and Industrial/Consumer. Below is a table presenting the full list of the 2011 "Best and Brightest".



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**2011 Best and Brightest Companies**

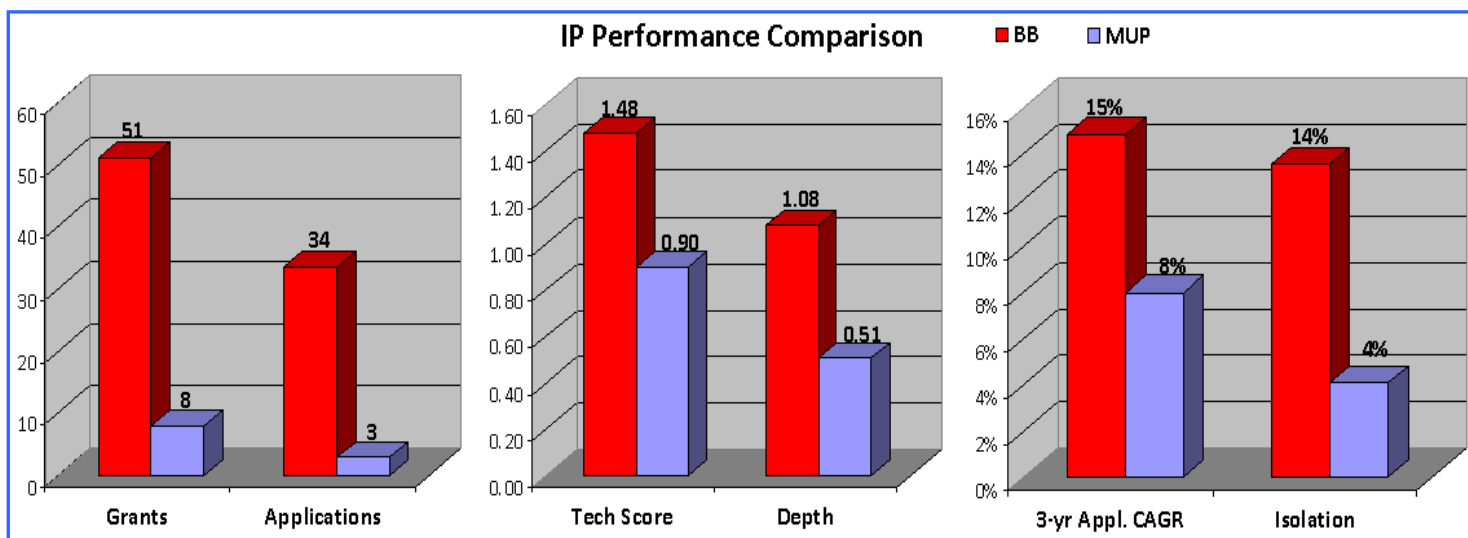
1 ACAD	ACADIA Pharmaceuticals	51 EXFO	EXFO	101 ORNI	Oragenics
2 ARAY	Accuray Inc	52 EXTR	Extreme Networks Inc	102 ORCT	Orckit Communications
3 AATI	Advanced Analogic Techs	53 FORM	FormFactor	103 PMTI	Palomar Medical Techs
4 AMRI	Albany Molecular Research	54 GPIC	Gaming Partners Intl	104 PCTI	PCTEL
5 ALXA	Alexza Pharmaceuticals	55 GNVC	Genvec	105 PDFS	PDF Solutions
6 AOSL	Alpha and Omega Semiconductor	56 GGOX	GigOptix	106 PRCP	Perceptron Inc
7 ALTI	Altair Nanotechnologies	57 HNSN	Hansen Medical	107 PCYC	Pharmacyclics, Inc.
8 ALVR	Alvarion Ltd	58 HW	Headwaters Inc	108 PLNR	Planar Systems
9 ABTG	Ambient Corp.	59 HTCH	Hutchinson Technology	109 PLXT	PLX Technology
10 ARGN	Amerigon Inc	60 IDSY	I.D. Systems	110 PWRM	Power 3 Medical Products
11 ANIK	Anika Therapeutics	61 ICAD	Icad	111 PVCT	Provectus Pharmaceutical
12 AIS	Antares Pharma	62 ICGN	Icagen	112 PSDV	pSivida
13 APNT	Applied Nanotech Holdings	63 IFLO	I-Flow Corp.	113 PULS	Pulse Electronics
14 ARDM	Aradigm	64 IGOI	iGo	114 QLTI	QLT Inc
15 ARWR	Arrowhead Research	65 IKAN	Ikanos Communications	115 RMTR	Ramtron International
16 ATRI	Atrion Corporation	66 IMMR	Immersion	116 RPTN	Raptor Networks Tech
17 VOXX	Audiovox Corp.	67 INFI	Infinity Pharmaceuticals	117 RGRX	Regenerx Biopharma
18 AUTH	AuthenTec	68 INO	Inovio Pharmaceuticals	118 RTK	Rentech Inc
19 AWRE	Aware	69 INTT	inTest	119 DFZ	RG Barry
20 BELFB	Bel Fuse Inc.	70 IVAC	Intevac Inc	120 SNMX	Senomyx Inc
21 BKYI	BIO-key International	71 JOUT	Johnson Outdoors	121 SITO	Single Touch Systems
22 BLTI	BioLase Technology	72 KTEC	Key Technology	122 SWHC	Smith & Wesson Holding
23 BCST	Broadcast International	73 KEM	Kemet Corporation	123 SONO	SonoSite Inc
24 CRDC	Cardica	74 KOPN	Kopin	124 SPIR	Spire
25 CSII	Cardiovascular Systems	75 KVA	K-V Pharmaceutical	125 STXS	Stereotaxis
26 CSCD	Cascade Microtech	76 DDSS	Labopharm Inc	126 SNSS	Sunesis Pharmaceuticals
27 IMOSD	ChipMOS Technologies	77 LZB	La-Z-Boy Incorporated	127 SCON	Superconductor Technologies
28 CPAH	CounterPath	78 LCRY	LeCroy Corp	128 SRDX	SurModics Inc
29 CRAY	Cray Inc	79 LSCG	Lighting Science Group	129 SURG	Synergetics USA
30 CRDS	Crossroads Systems	80 LBAS	Location Based Technologies	130 ELOS	Syneron Medical
31 CRYP	CryptoLogic	81 LRAD	LRAD Corp.	131 SYNM	Syntroleum
32 CRIS	Curis, Inc	82 LYTS	LSI Industries	132 TASR	Taser International
33 CUTR	Cutera	83 LUNA	Luna Innovations	133 TSYS	TeleCommunication Systems
34 CYCC	Cyclacel Pharmaceuticals	84 MASC	Material Sciences	134 TGX	Theragenics
35 CYNO	Cynosure	85 MTSN	Mattson Technology	135 THLD	Threshold Pharmaceuticals
36 DARA	DARA BioSciences	86 MAXY	Maxygen	136 TSEM	Tower Semiconductor
37 DLGC	Dialogic	87 MEMS	Memsic, Inc.	137 TSON	TranS1
38 DGII	Digi International Inc	88 MSON	Misonix	138 UGNE	Unigene Laboratories
39 DMRC	Digimarc	89 MVIS	Microvision	139 UNXL	Uni-Pixel
40 DRAD	Digirad Corp.	90 MOSY	MoSys	140 VRNM	Verenum
41 HILL	Dot Hill Systems	91 MGAM	Multimedia Games	141 VICL	Vical
42 DSPG	DSP Group	92 NSPH	Nanosphere	142 VSCI	Vision-Sciences Inc
43 EMITF	Elbit Imaging Ltd.	93 NLS	Nautilus Inc	143 VUZI	Vuzix
44 ESIO	Electro Scientific Inds	94 NLST	Netlist	144 WGBS	Wafergen Biosystems
45 EMKR	Emcore	95 NWCI	Newcardio	145 WGA	Wells-Gardner Electronics
46 EMIS	Emisphere Technologies	96 NEXS	Nexus Lighting	146 WSTL	Westell Technologies
47 ENWV	Endwave	97 NMTI	NMT Medical	147 XNNH	Xenonics Holdings
48 EFOI	Energy Focus	98 NVMI	Nova Measuring Instruments	148 XOMA	Xoma
49 ESCA	Escalade	99 OIIM	O2Micro International	149 ZHNE	Zhone Technologies
50 EXAC	Exactech Inc	100 OCLS	Oculus Innovative Sciences	150 ZRAN	Zoran Corporation



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## Best and Brightest (BB) versus the Micro-Cap Universe with Patents (MUP)

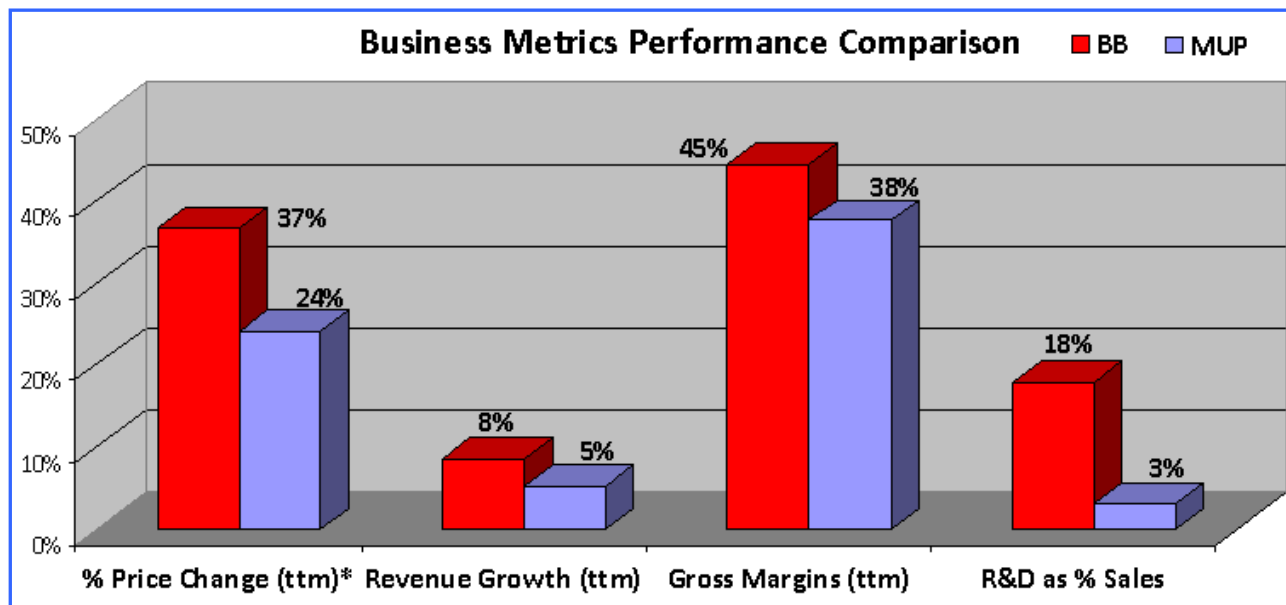
To fully appreciate the argument presented in the earlier sections of this paper surrounding the value and importance of IP as a determinant (or even a predictor) of the corporate value, we have analyzed and compared the “Best and Brightest” group of companies with the micro-cap Universe utilizing a number of common business metrics and the PatentVest metrics. Comparing the PV metrics between the two groups of companies (150 BB and the MUP of 1,028 companies), details the IP superiority of the BB companies as reflected in their higher PV metrics – see graph below. Note that for comparison purposes, we only consider the median values for both groups since the mean values of small population samples like the BB group are sensitive to extreme scores; thus, a median-based comparison gives a better indication of the behavior or performance of the selected data. The outcomes of these comparisons are presented below.



Due to the fact that the “Best and Brightest” were selected largely on the basis of IP it is to be expected that these companies would compare favorably with the MUP companies in categories related to IP such as the number of patents or the percentage of revenues being spent on Research and Development. However, it is not so obvious that this group would also compare very favorably with other more common business metrics such as revenue growth rates or the level of gross margin.

The chart (below) presents the data in graphical presentation of the business metric comparisons. We note that the “Best and Brightest” as a group score significantly ahead of the MUP companies in gross margin (ttm), revenue growth rate (ttm) and R&D spending as a percentage of revenues. More importantly, the 150 “Best and Brightest” companies outperformed the MUP group on the basis of stock price performance during the 12 month period ending January 31, 2011 by 13 percentage points – a +52% difference. We suggest that given the now tangible value of the IP found in the “Best and Brightest” group, these companies are likely to continue delivering a share price performance ahead of the MUP companies.





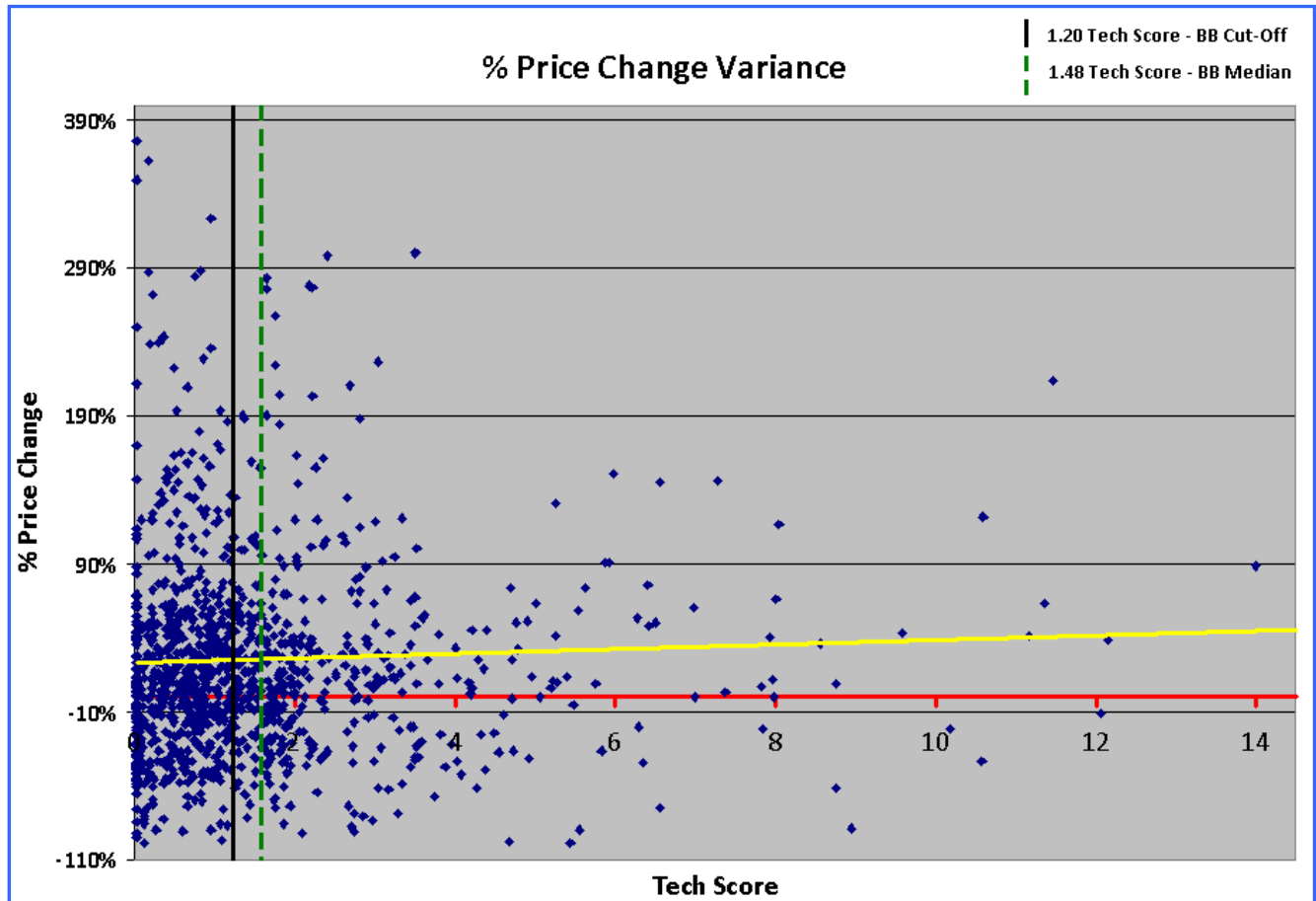
As discussed previously, IP metrics can be correlated to the business performance of companies. This correlation is notable in examining the 2011 “Best and Brightest”. Below is an additional comparative table detailing the IP superiority of the BB companies which in turn appears to easily translate into superior business performance measures.

	PV Tech 3-yr App.													
	Grants	Apps	Score	CAGR	Isolation	Depth	PV Ratio	Market Cap	Beta	% Price Change (ttm)	Revenue Growth (ttm)	Gross Margins (ttm)	R&D as % Sales	Price/Book Ratio
MEDIAN BB COMPANIES	51	34	1.48	15%	14%	1.08	2.34	\$119.32	1.35	37%	8%	45%	18%	1.97
MEDIAN MUP	8	3	0.90	8%	4%	0.51	10.43	\$94.98	1.31	24%	5%	38%	3%	1.81
DELTA	43	31	0.58	7%	10%	0.57	-8.09	\$24.34	0.04	13%	3%	7%	15%	0.16
PCT % DIFFERENCE	538%	1017%	64%	86%	232%	112%	-78%	26%	3%	52%	59%	18%	500%	9%

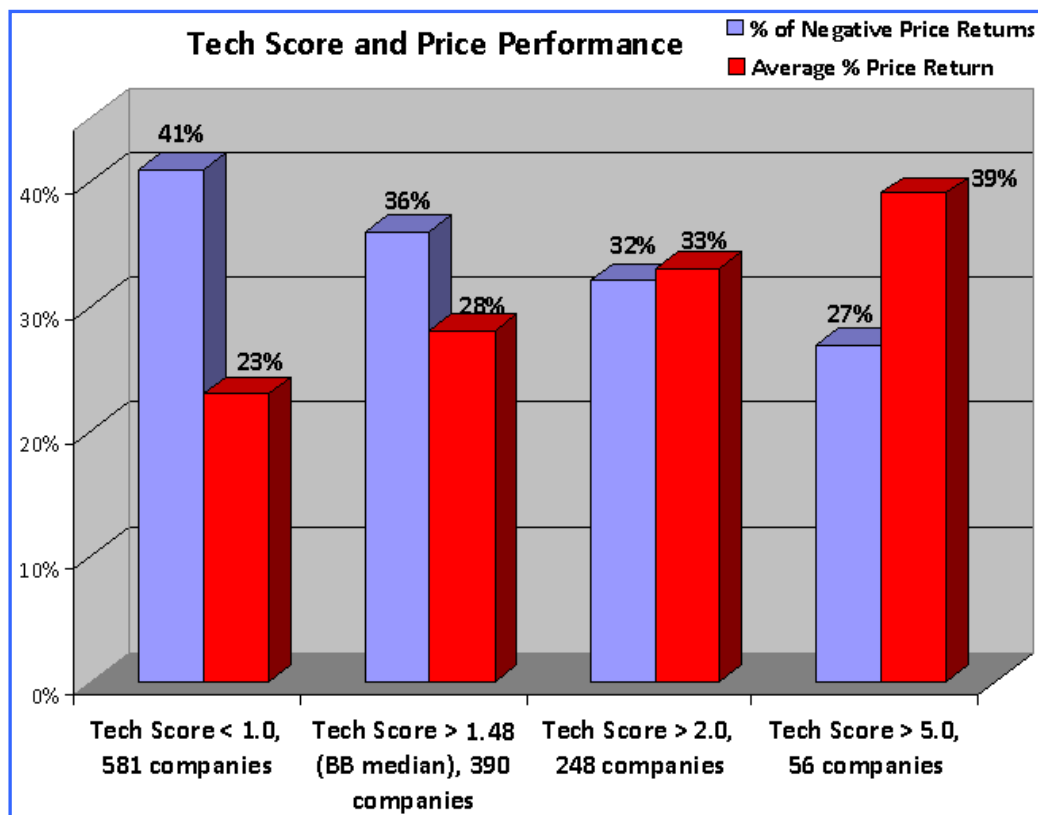
Some of this information is repeated from the graph above, but it is clear that the results validate the theory that better or stronger IP performance correlates to a superior business outlook:

- **Equivalent Beta:** As expected, most micro-cap companies have Beta values > 1.0. Of note is the observation that the median value of Beta in the BB companies is almost identical to the value of Beta in the micro-cap universe (1.35 vs. 1.31).
- **Higher Returns:** In spite of the same median value of Beta, the BB companies demonstrated a Price Change (ttm) – ending the week of January 31, 2011 – that was 52% higher than its micro-cap universe (37% vs. 24%).
- **Tech Score and Price Performance:** When plotting the price returns of both the MUP and BB companies against Tech Score values, we can demonstrate an apparent correlation between Tech Score and price variance. In examining the distribution of the points in the positive and negative Y-axis of the graph (below), the points below a Tech Score of 1.20 (this is the cut-off Tech Score for the BB companies, X-axis) swing across negative and positive returns, but as the Tech Score increases, the

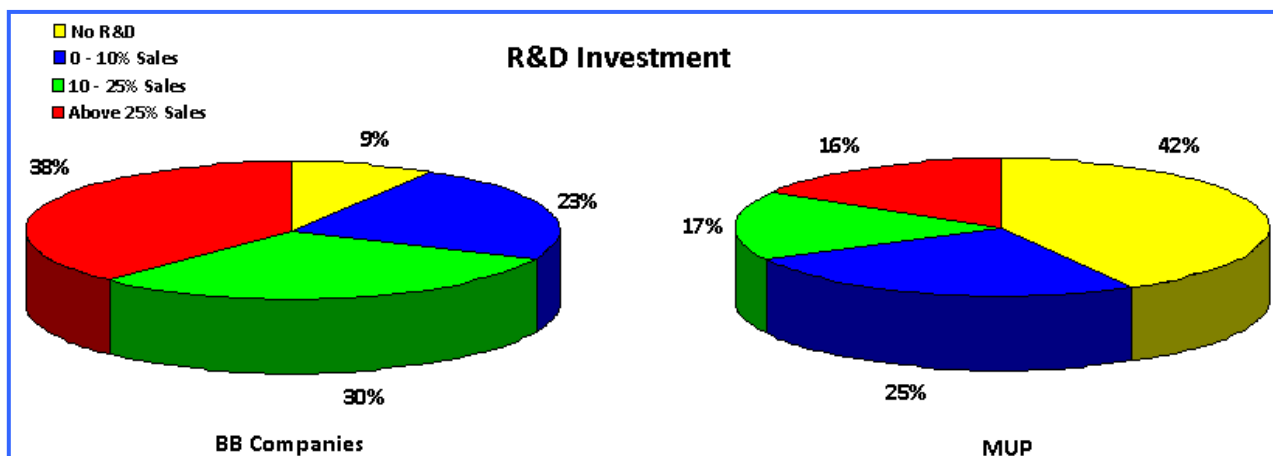
price returns stabilize in the positive Y-Axis. As such, if we consider that the median Tech Score of the BB companies is 1.48 (see dotted green line), the price returns of the BB companies or stocks with higher Tech Scores are more likely to be positive.



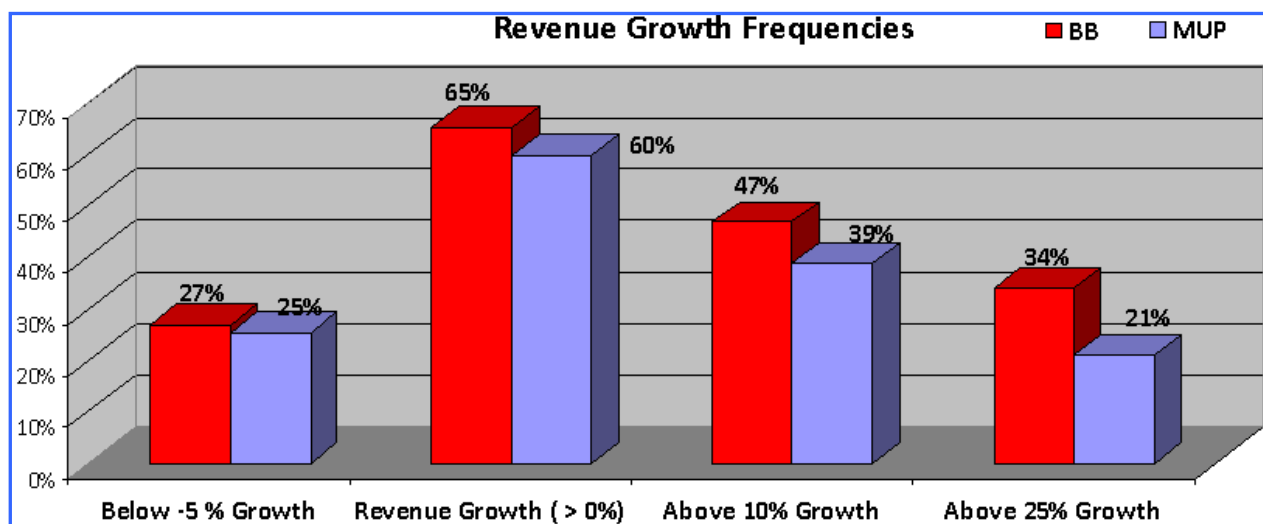
- Tech Score and Price Performance (Part 2):** Looking at the graph below, we can appreciate the importance of high Tech Scores not only in the BB companies, but with stocks in general. That is, for 581 companies with Tech Scores < 1.0, 41% of the companies reported negative returns while the average price return for this group was 23%. However, as Tech Scores improved – for example, Tech Score > 1.48 (BB median) – the average price return for companies (sample of 390) increased to 28%, while the frequency of negative returns decreased to 36%. Going up the ladder, companies with Tech Score > 5.0 reported a much higher average price return of 39%, with just 27% of companies with negative returns – sample of 56 companies. This analysis demonstrates the consistent, positive performance of High Tech Score (HTS) companies.



- Innovation Focus:** The technology leadership of the BB companies is achieved through a strong focus on innovation supported by higher R&D spending. As seen from the image below, only 9% of the BB companies report no R&D spending compared to 42% of the MUP companies. In addition, 38% of the BB companies have R&D spending as % Sales above 25% compared to only 16% of the micro-cap universe. The superiority of R&D resources in the BB companies is significant. The advantage gained with the higher R&D spend is reflected in a higher 3-yr Application CAGR compared to MUP (15% vs. 8%). The higher level of spending on Research and Development is generating increased patent applications and more robust level of innovation.



- Securing IP Innovation:** The facts shown above reiterate the correlation between superior IP assets and improved business performance. As such, the BB companies seem to protect their IP assets and innovative products with highly defensive patent estates that are difficult to copy or “design around” as reflected by the median Depth rating of 1.08 compared to just 0.51 for the MUP.
- Increasing Market Share:** Drilling down further into the revenue growth metric, below is a chart of revenue growth frequencies. This data further supports the fact that the “Best and Brightest”, as a group, have far greater frequency of positive revenue growth versus the “Microcap Universe with Patents”. This data, along with better gross margins, lends support for the higher stock price performance.



## Conclusion

Despite IP’s significance to public company value, huge inefficiencies exist in terms of IP disclosure, process, investment and valuation. With inefficiency however, comes opportunity. In the past, the IP asset class has lacked objective, relevant and timely information – both from the marketplace and from the companies themselves – which combined has resulted in the lack of a reliable price discovery mechanism. The result has been that while IP leadership and IP value is somewhat nebulous, it is not diffuse -- on the contrary -- IP has been disproportionately concentrated in the top quintile of companies when measured, scored and ranked by PatentVest. The ability to identify and quantify IP (as described above) presents a novel opportunity for investors to capitalize on a new method of modeling IP to separate out the “Best and Brightest”.

In conjunction with a similar study completed on the 2010 “Best and Brightest”, this study has shown that a select group of these IP leaders – **the Best and Brightest** – are able to translate their IP leadership into superior IP assets, principally patents, resulting in superior business performance. A virtuous cycle unifying IP strategy, process, investment and execution ensues – higher levels of R&D unified with business strategy create innovative new products to garner market share, resulting in higher revenue growth. Higher levels of competitive differentiation lead to pricing power and higher margins, resulting in higher cash flow for future reinvestment . . . and the cycle repeats. Thus, the predictive value of IP metrics that are able to detect “Research” transitioning to “Development” in R&D, and onto the inflection point of the product life cycle “S Curve” become the key to capturing alpha through the appropriate examination of IP.



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The data from this study has demonstrated that investors who are able to segment out the Best and Brightest, are able to enjoy significant excess returns with very little increase in risk. Indeed, it can be argued that a basket approach to investing in top-ranked companies as measured by relevant IP metrics – an emerging IP asset class - may provide the optimum level of risk, reward and diversification over the intermediate and long-term.

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