



## The \$700 Billion+ Opportunity In the Technology Sector

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### Executive Summary

A company's market capitalization and enterprise value are linked together to provide alternative value measures for different stakeholders. Market capitalization reflects the value of a company attributable to stock holders. Enterprise value represents the sum of claims by all company stakeholders: creditors (secured and unsecured) and shareholders (preferred and common). As US stock indexes reached all-time highs during November 2016, we were interested in analyzing the market drivers of enterprise value and measuring how much is attributable to existing operations/cash flow versus future cash flows/economic profits (as opposed to accounting profits) in the future.

We conducted an analysis, as of November 30, 2016, of companies included in the Russell 3000 Information Technology Sector to reverse engineer the market's expectations for cash flows as reflected in each company's total enterprise value. Data and analytics provided by New Constructs enables us to calculate for each company how much of their total enterprise value was attributable to (a) the current value of their operations and non-operating assets vs. (b) the future value of their growth options. Previously, conducting this analysis on so many companies simultaneously with analytical integrity was infeasible.

We were surprised to learn that the majority of enterprise value is explained by current operations with relatively low expectations for companies' future value of growth options. From this analysis, there were several interesting insights, including:

- Technology Companies Struggle to Generate a Return on Invested Capital (ROIC) Greater than their Weighted Average Cost of Capital (WACC)
- ROIC Across Technology Companies Varies Significantly
- Future Value of Growth Options (FVGO) as a % of Enterprise Value was Lower than Anticipated

You create value for your company by investing capital to generate future cash flows at rates of return that exceed your cost of capital. Unless your company's return on capital ([ROIC](#)) exceeds your cost of capital ([WACC](#)), no amount of revenue growth can create value. These principles apply equally to public companies as well as to privately-held enterprises.

For the Russell 3000, we identified 208 Technology Companies that have a Present Value of Economic Profit (Loss) in perpetuity totaling a negative \$433 Billion. If these 208 companies could earn a ROIC just equal to their WACC, shareholder value / enterprise value would increase by **\$433 Billion**, all other things being equal. We also identified 11 Technology Companies in the Russell 3000 that have a "negative" future value of growth options (FVGO) totaling \$242 Billion. If these 11 companies could reduce their "negative" FVGO to just zero, shareholder value / enterprise value would increase by **\$242 Billion**.

The potential opportunity to unlock value for Technology Companies in the Russell 3000 can be even greater than the \$675 Billion detailed above. Think of the \$675 Billion as just getting back to "break-even" from an enterprise value perspective. If these companies identified above could start to earn a positive spread on ROIC vs. WACC, and convince the Capital Markets that they will create, rather than destroy, shareholder value in the future, the potential opportunity to unlock shareholder / enterprise value could easily exceed \$700 Billion.

We conclude this article by introducing a new paradigm for optimizing all the sources of capital of a company – monetary, physical, relational, organizational, and human capital that can be utilized by public companies as well as privately-held enterprises. This new framework can be deployed by executives at all levels throughout their

organizations – Enterprise Level, Business Unit / Subsidiary level, and Individual Project Level. Strategic initiatives can be linked to their potential impact on enterprise value and share price in a transparent manner, providing “one version of the truth” that can be shared with all company stakeholders. Technology breakthroughs made by New Constructs and TechCXO allow enterprises of all size to close potential valuation gaps between their market value and intrinsic value. It is now possible to reverse engineer every part of your company’s enterprise value to isolate potential drags on your current share price and act proactively to:

- Avoid Valuation Traps
- Optimize all Components of Enterprise Value
- Improve ROIC
- Manage Innovation Initiatives as a Portfolio of Growth Options
- Align Stakeholder Expectations

**The Analysis**

We conducted an analysis, as of November 30, 2016, of Technology Companies included in the Russell 3000 to reverse engineer the components that make up each company’s total enterprise value.

For purposes of this analysis, enterprise value is calculated in two ways:

Enterprise Value	
= <b>Market Capitalization</b>	= <b>Current Value of Operations</b>
+ <b>FMV of All Debt</b>	+ <b>Non-Operating Assets</b>
= <b>Enterprise Value</b>	+ <b>Future Value of Growth Options</b>
	= <b>Enterprise Value</b>

**Enterprise Value Components**

Enterprise Value is a proxy for the takeover value of a company and can be difficult to calculate due to various accounting distortions, such as inventory reserves, asset write-downs, and off-balance sheet operating leases. Thus, the components of a company’s enterprise value cannot be easily extrapolated from their GAAP-based financials. For example:

- Non-Operating Assets include items such as excess cash, assets from discontinued operations, and unconsolidated subsidiary assets.
- Included in the FMV of All Debt are Executive Stock Options (after-tax), minority interests, and underfunded pension plans.
- Current Value of Operations is calculated as the sum of the company’s Invested Capital plus the Present Value of Economic Profit (Loss) in Perpetuity. Economic Profit differs significantly from GAAP-based net income as accounting distortions are removed, and a charge for the use of all capital is deducted in computing Economic Profit (Loss).
- The Future Value of Growth Options (FVGO) represents the Capital Markets’ assessment of a company’s growth initiatives. In other words, FVGO represents investors’ evaluation of the company’s “path-to-growth strategies” and their ability to create shareholder value in the future.

In summary, enterprise value can be viewed simply as the value of the company’s “Assets in Place” (Current Value of Operations Plus Non-Operating Assets) plus the value of “Assets to be Acquired in the Future” (FVGO).

**New Constructs Analytics**

Leveraging data and analytics provided by New Constructs, we calculated for each company included in the S&P 500 and Russell 3000 Indexes how much of their total enterprise value was attributable to the current value of their operations and non-operating assets vs. the future value of their growth options. Previously, conducting such an analysis of both indexes simultaneously was infeasible due to technology limitations and scalability

challenges. New Constructs has solved the technology challenge by automating the data gathering from SEC filings (including accompanying footnotes) that are required for the proper analysis of each company's enterprise value. Accounting distortions ([30+ potential adjustments](#)) are removed for each company, providing a standardized, "one version of the truth" to benchmark each company against peer groups and across industry sectors. New Constructs updates its data base daily, so enterprise value metrics are available in real time.

As of November 30, 2016, Technology Companies included in the Russell 3000 had a total Enterprise Value of \$5.7 Trillion (see Table 1). Of this \$5.7 Trillion, their FVGO totaled \$1.8 Trillion (32.7%) while the Current Value of Operations comprised \$2.9 Trillion (50.9%). This was surprising as we thought that Technology Companies would have a higher FVGO %.

**Table 1: Russell 3000** (Figures in Millions of USD)

Sector	Average Invested Capital	PV of Economic Profit (Loss) in Perpetuity		% of Enterprise Value	Non-Operating Assets	% of Enterprise Value	Future Value of Growth Opportunities	% of Enterprise Value	Enterprise Value
		Profit (Loss)	Current Value of Operations						
Consumer Discretionary	\$2,348,473	\$523,056	\$2,871,529	62.1%	\$168,776	3.6%	\$1,583,946	34.3%	\$4,624,250
Consumer Staples	\$1,286,959	\$912,302	\$2,199,261	77.4%	\$115,865	4.1%	\$527,264	18.6%	\$2,842,390
Energy	\$2,116,152	(\$2,028,151)	\$88,000	3.7%	\$69,958	3.0%	\$2,192,776	93.3%	\$2,350,734
Financials	\$3,905,242	(\$573,892)	\$3,331,350	70.6%	\$55,362	1.2%	\$1,330,798	28.2%	\$4,717,509
Health Care	\$1,766,957	\$364,586	\$2,131,543	56.1%	\$282,135	7.4%	\$1,386,642	36.5%	\$3,800,320
Industrials	\$1,983,736	\$185,240	\$2,168,976	60.0%	\$141,568	3.9%	\$1,304,711	36.1%	\$3,615,254
<b>Information Technology</b>	<b>\$1,451,333</b>	<b>\$1,426,878</b>	<b>\$2,878,211</b>	<b>50.9%</b>	<b>\$927,838</b>	<b>16.4%</b>	<b>\$1,849,606</b>	<b>32.7%</b>	<b>\$5,655,655</b>
Materials	\$847,456	(\$253,179)	\$594,277	49.2%	\$45,170	3.7%	\$567,803	47.0%	\$1,207,250
Telecom Services	\$1,128,284	(\$97,844)	\$1,030,441	74.1%	\$18,954	1.4%	\$342,099	24.6%	\$1,391,494
Utilities	\$1,495,724	(\$362,631)	\$1,133,093	70.3%	\$25,871	1.6%	\$453,816	28.1%	\$1,612,780
<b>Total</b>	<b>\$18,330,316</b>	<b>\$96,364</b>	<b>\$18,426,679</b>	<b>57.9%</b>	<b>\$1,851,496</b>	<b>5.8%</b>	<b>\$11,539,460</b>	<b>36.3%</b>	<b>\$31,817,636</b>

Sources: TechCXO, New Constructs, LLC, and company filings

Since the turn of the century, the drivers of shareholder value / enterprise value have shifted away from monetary and physical assets to intellectual assets. In the table above, Invested Capital includes not only traditional monetary and physical assets, but also intellectual assets reported on balance sheets such as Goodwill and other intangibles. Furthermore, New Constructs adjusts the calculation of Invested Capital to include off-balance sheet assets (i.e. operating leases), unrecorded Goodwill (due to pooling-of-interest accounting), along with asset reserves and accumulated write-downs for impairment charges. Intellectual assets – relational assets, organizational assets, and human capital assets – are usually not recorded on balance sheets due to accounting regulations, but never the less are key drivers of a company's future value of growth options.

### Technology Companies Struggle to Generate ROIC Greater than WACC

The spread between ROIC and WACC for the Technology Sector is a healthy 6.82% - ROIC for the Technology Sector of 14.36% less WACC of 7.54%. However, the spread between ROIC vs. WACC for the top performers versus the bottom performers can be quite large (see Table 2).

**Table 2: Capital Efficiency – ROIC vs. WACC** (Figures in Millions of USD)

Company Name	Total Operating Revenue	Market Capitalization	Enterprise Value	NOPAT	Average Invested Capital	Economic Earnings	ROIC	WACC	ROIC Less WACC
<b>Best in Sector</b>									
LifeLock Inc	\$650.16	\$2,242	\$2,397	\$72	\$26	\$70	271.28%	7.82%	263.45%
Apple Inc.	\$215,639.00	\$589,327	\$711,752	\$44,692	\$24,520	\$43,014	182.27%	6.84%	175.42%
Aspen Technology, Inc.	\$472.10	\$4,080	\$4,282	\$149	\$100	\$141	149.23%	8.17%	141.07%
NVE Corporation	\$26.13	\$323	\$324	\$10	\$9	\$10	120.79%	6.39%	114.40%
Linear Technology Corp	\$1,455.91	\$15,030	\$15,109	\$486	\$448	\$452	108.42%	7.70%	100.72%
<b>Worst in Sector</b>									
VirnetX Holding Corp	\$1.55	\$179	\$186	(\$17)	\$18	(\$19)	-97.25%	11.49%	-108.74%
Uni-Pixel Inc.	\$3.60	\$53	\$55	(\$22)	\$23	(\$24)	-95.60%	8.50%	-104.10%
ParkerVision Inc.	\$4.07	\$35	\$43	(\$15)	\$18	(\$16)	-85.34%	6.10%	-91.44%
PROS Holdings, Inc.	\$155.36	\$729	\$864	(\$50)	\$69	(\$57)	-73.50%	8.88%	-82.38%
Cornerstone OnDemand	\$409.96	\$2,018	\$2,384	(\$53)	\$92	(\$61)	-57.59%	9.06%	-66.65%

Sources: TechCXO, New Constructs, LLC, and company filings

For the Technology Sector, the Current Value of Operations totaled \$2.9 Trillion – representing 50.9% of total Enterprise Value. The Current Value of Operations for the large Technology Companies skews the metrics for the Technology Sector as a whole (see Table 3). In fact, the majority of Technology Companies have a negative PV of Economic Profit in Perpetuity. Digging deeper, **there are 208 Technology Companies in the Russell 3000 that have a PV of Economic Profit (Loss) in Perpetuity totaling a negative \$433 Billion.**

**Table 3: Value of Operations** (Figures in Millions of USD)

Company Name	Market Capitalization	Enterprise Value	Average Invested Capital	PV of Economic Profit (Loss) in Perpetuity	Current Value of Operations
<b>Best in Sector</b>					
Apple Inc.	\$589,327	\$711,752	\$24,520	\$628,533	\$653,053
Alphabet, Inc.	\$497,477	\$509,455	\$66,065	\$169,121	\$235,185
Microsoft Corporation	\$468,543	\$550,051	\$51,741	\$158,561	\$210,302
Oracle Corporation	\$165,003	\$224,566	\$43,435	\$106,974	\$150,409
Cisco Systems, Inc.	\$149,689	\$186,298	\$60,636	\$92,860	\$153,496
<b>Worst in Sector</b>					
Viavi Solutions, Inc.	\$1,806	\$2,578	\$61,079	(\$60,561)	\$518
Yahoo! Inc.	\$39,138	\$57,413	\$35,254	(\$34,740)	\$514
Broadcom Ltd	\$67,741	\$87,218	\$26,921	(\$21,713)	\$5,208
Micron Technology, Inc	\$20,341	\$33,540	\$21,522	(\$18,216)	\$3,306
Corning Inc.	\$22,858	\$31,011	\$29,651	(\$16,651)	\$13,000

Sources: TechCXO, New Constructs, LLC, and company filings

### Excess Cash Holdings Dominated by Small Number of Companies

Technology Companies held a significant amount of excess cash (cash holdings greater than what is needed to operate the company). Excess Cash balances for the Technology Sector totaled \$922 Billion as of November 30, 2016. However, our analysis revealed that over \$700 Billion of excess cash was held by just 10 large companies (i.e., Apple, Microsoft, Google, etc.), much of which is held overseas and not repatriated due to tax issues

**FVGO as a % of Enterprise Value Lower than Anticipated**
**Table 4: Future Value of Growth Opportunities (Figures in Millions of USD)**

Company Name	Average Invested Capital	PV of Economic Profit (Loss) in Perpetuity	Current Value of Operations	Non-Operating Assets	Future Value of Growth Opportunities	Enterprise Value
<b>Best in Sector</b>						
Facebook Inc.	\$31,917	\$38,091	\$70,009	\$25,647	\$247,397	\$343,052
Microsoft Corporation	\$51,741	\$158,561	\$210,302	\$145,710	\$194,038	\$550,051
Alphabet, Inc.	\$66,065	\$169,121	\$235,185	\$87,050	\$187,219	\$509,455
Visa Inc.	\$30,680	\$62,870	\$93,550	\$12,613	\$103,173	\$209,337
Broadcom Ltd	\$26,921	(\$21,713)	\$5,208	\$1,988	\$80,022	\$87,218
<b>Worst in Sector</b>						
Apple Inc.	\$24,520	\$628,533	\$653,053	\$233,272	(\$174,574)	\$711,752
Cisco Systems, Inc.	\$60,636	\$92,860	\$153,496	\$69,990	(\$37,187)	\$186,298
HP Inc.	\$53,729	\$10,992	\$64,722	\$2,564	(\$25,133)	\$42,152
Avnet Inc.	\$9,865	(\$984)	\$8,882	\$1,704	(\$1,586)	\$8,999
Western Union Co (The)	\$4,950	\$8,672	\$13,622	\$1,172	(\$863)	\$13,931

Company Name	Average Invested Capital	PV of Economic Profit (Loss) in Perpetuity	Current Value of Operations	Non-Operating Assets	Future Value of Growth Opportunities	% of Enterprise Value	Enterprise Value
<b>Best in Sector</b>							
MoSys Inc.	\$52	(\$306)	(\$255)	\$0	\$287	879.33%	\$33
ParkerVision Inc.	\$18	(\$268)	(\$250)	\$0	\$293	677.27%	\$43
Uni-Pixel Inc.	\$23	(\$284)	(\$261)	\$0	\$316	571.93%	\$55
Leaf Group Ltd	\$275	(\$920)	(\$645)	\$23	\$767	528.31%	\$145
SeaChange International, Inc.	\$189	(\$612)	(\$423)	\$29	\$509	443.89%	\$115
<b>Worst in Sector</b>							
Avid Technology, Inc.	\$267	\$779	\$1,046	\$21	(\$635)	-147.12%	\$432
Rubicon Technology, Inc.	\$148	(\$118)	\$30	\$1	(\$15)	-96.84%	\$16
HP Inc.	\$53,729	\$10,992	\$64,722	\$2,564	(\$25,133)	-59.62%	\$42,152
Photonics Inc.	\$1,017	(\$117)	\$900	\$266	(\$280)	-31.66%	\$885
Apple Inc.	\$24,520	\$628,533	\$653,053	\$233,272	(\$174,574)	-24.53%	\$711,752

Sources: TechCXO, New Constructs, LLC, and company filings

The FVGO for the Technology Sector totaled \$1.8 Trillion as of November 30, 2016 – 32.7% of Enterprise Value.

It was surprising that the FVGO as a % of Enterprise Value for the Technology Sector was not higher. Due to the continuous demands for innovation, Technology Companies may be unduly punished by the Capital Markets based on the accounting treatment for their investments in R&D and other intangibles that will create value in the future. Under US accounting rules, internally generated intangibles – through R&D (patents and trademarks), marketing (brands, customer relations), organizational improvements (systems, processes) or training (human resources) – are treated as expenses and charged immediately to expense. Since these investments are never reflected on a company's balance sheet, it is difficult for the Capital Markets to assign a value to these investments, creating an undervaluation trap for technology companies. Also, researchers have shown that innovation-intensive companies are systematically undervalued due to cognitive biases of analysts – understanding innovation initiatives is difficult so they tend to overestimate downside risks.

We identified **11 Technology Companies in the Russell 3000 that had a “negative” future value of growth options totaling \$242 Billion**. Having a “negative” future value of growth options implies that the Capital Markets believe that the company will not earn a positive spread between its ROIC and WACC in the future and will destroy shareholder value. In other words, the Capital Markets are signaling to management that they do not “buy-in” to the company's “path-to-growth strategy”.

### The Opportunity

You create value for your company by investing capital to generate future cash flows at rates of return that exceed your cost of capital. Unless your company's return on capital exceeds its cost of capital, no amount of revenue growth can create value. These principles apply equally to public companies as well as to privately-held enterprises.

Based on our analysis, **if the 208 Technology Companies we identified in the Russell 3000 could earn a ROIC just equal to their WACC, shareholder value / enterprise value would increase by \$433 Billion**, all other things being equal.



Furthermore, **if the 11 Technology Companies we identified in the Russell 300 could reduce their “negative” FVGO to zero, shareholder value / enterprise value would increase by \$242 Billion, all other things being equal.**

In summary, **at the macro-level the potential opportunity to unlock value for Technology Companies in the Russell 3000 can be even greater than the \$675 Billion detailed above.** Think of the \$675 Billion as just getting back to “break-even” from an enterprise value perspective. If these companies identified above could start to earn a positive spread on ROIC vs. WACC, and convince the Capital Markets that they will create, rather than destroy, shareholder value in the future, the potential opportunity to unlock shareholder / enterprise value could easily exceed \$700 Billion.

**At the individual firm level**, the opportunities for unlocking value through improved capital efficiency and enhanced transparency in communicating the firm’s growth strategies can be in **the hundreds of millions / billions of dollars**. New Constructs has published a number of business cases demonstrating compelling value enhancement opportunities:

1. [How General Electric Can Prevent A \\$125 Billion Decline In Market Value](#)
2. [How To Boost American Express \(AXP\) Value By \\$50 Billion](#)
3. [Open Letter to Larry Ellison: How To Boost Oracle’s Value By \\$65 Billion](#)

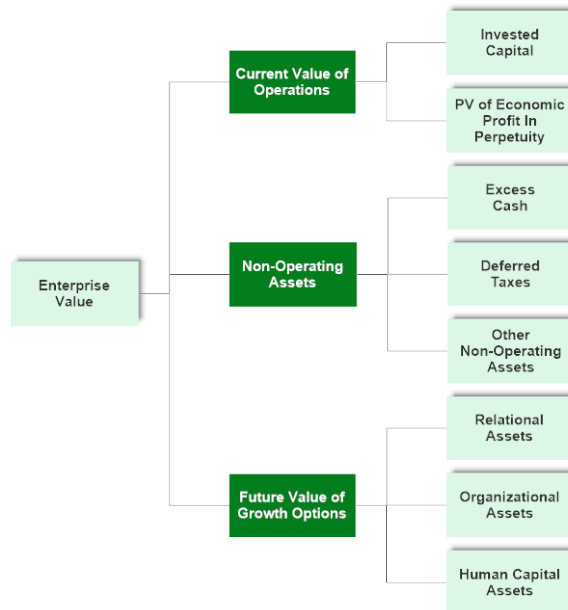


## New Paradigm for Managing Enterprise Value

Even though we were surprised by the FVGO percentages of total Enterprise Value for Technology Companies, a significant amount of enterprise value is attributable to expectations concerning growth opportunities.

FVGO is not a new concept. In their seminal 1961 paper, "Dividend Policy, Growth and the Valuation of Assets," Merton Miller and Franco Modigliani (both Nobel Prize winners) divided company value into two components:

1. Value of assets-in place – current value of operations plus non-operating assets
2. Value of growth opportunities (FVGO) – assets to be acquired in the future that will earn a ROIC greater than the company's WACC



Share prices, then are driven by two sets of expectations: the first concerns returns on existing assets; the second, returns on assets the company is in position to acquire in the future. Executives typically know a lot about how the market evaluates their company's current operations. However, they lack an equivalent framework for assessing how the market is assessing their company's FVGO and growth strategies.

The problem is that the assets that drive FVGO are mostly intangibles and intellectual capital assets. And part of the reason that executives lack a framework for managing FVGO is that one of their main sources of information, the existing financial reporting framework, overlooks most intangibles and almost all types of capital other than monetary and physical assets. GAAP-based financials provide no visibility into the value drivers behind a company's enterprise value and "path-to-growth strategies".

Until recently, there were no standard metrics to measure investors' assessment of a company's "path-to-growth strategy" that is reflected in its FVGO. This is the reason we have created a new paradigm for optimizing all the sources of capital of the company – monetary, physical, relational, organizational, and human capital that can be utilized by public companies as well as privately-held enterprises. Strategic initiatives can be linked to their potential impact on enterprise value and share price in a transparent manner, providing "one version of the truth" that can be shared with all company stakeholders. This new framework can be utilized by executives at all levels throughout their organizations – enterprise level, Business Unit / Subsidiary level, and Individual Project Level.

## Call to Action

Technology breakthroughs made by New Constructs and TechCXO allow enterprises of all size to close potential valuation gaps between their market value and intrinsic value. It is now possible to reverse engineer every part of your company's enterprise value to isolate potential drags on your current share price and act proactively to:

- Avoid Valuation Traps



- Optimize all Components of Enterprise Value
- Improve ROIC
- Manage Innovation Initiatives as a Portfolio of Growth Options
- Align Stakeholder Expectations

By leveraging new data analytics, along with the framework described above, executives can now take a holistic approach for optimizing each component of their company’s enterprise value.

**Avoiding Valuation Traps**

Our analysis of Technology Companies included in the Russell 3000 allowed us to quickly identify companies that fall into the following types of valuation traps:

- Undervaluation Trap
- Capital Inefficiency Trap
- Overvaluation Trap

Negative consequences are associated with each valuation trap (see Table 5), and executives need to take corrective actions immediately:

- Companies that fall into the **Undervaluation Trap** typically earn a ROIC greater than their WACC and the growth rate embedded in their current share price is negative, or significantly below the consensus analysts forecasted growth rate.
- Companies that fall into the **Capital Inefficiency Trap** typically earn a ROIC less than their WACC and the growth rate embedded in their current share price is significantly below the consensus analysts forecasted growth rate.
- Companies that fall into the **Overvaluation Trap** typically have a growth rate embedded in their current share price that is significantly above the consensus analysts forecasted growth rate.

**Table 5: Valuation Traps**

Undervaluation Trap	Capital Inefficiency Trap	Overvaluation Trap
<ul style="list-style-type: none"> <li>▪ Potential takeover candidates</li> <li>▪ Targeting by Activist Investors</li> <li>▪ Excessive cost of capital, stunting corporate investment and firm growth</li> <li>▪ Reduced investments in R&amp;D and other innovative activities</li> <li>▪ Increased stock price volatility</li> <li>▪ Misallocation of capital</li> <li>▪ Talent recruitment and retention challenges due to depressed share price</li> </ul>	<ul style="list-style-type: none"> <li>▪ Targeting by Activist Investors</li> <li>▪ Excessive cost of capital, stunting corporate investment and firm growth</li> <li>▪ Increased stock price volatility</li> <li>▪ Misallocation of capital</li> <li>▪ Cuts in discretionary spending on IT, R&amp;D, marketing and advertising to boost reported earnings</li> <li>▪ Talent recruitment and retention challenges due to depressed share price</li> </ul>	<ul style="list-style-type: none"> <li>▪ Investors’ expectations are impossible to meet</li> <li>▪ Higher agency costs &amp; governance challenges</li> <li>▪ “Short-termism” mindset that discourages long-term investments and supports actions that undermines a company’s long-term growth strategy</li> <li>▪ Loss of managerial reputation</li> <li>▪ Shareholder lawsuits</li> <li>▪ SEC investigations</li> </ul>

Sources: TechCXO, New Constructs, LLC, and company filings

**Optimizing all Components of Enterprise Value**

To avoid these valuation traps, executives should take a holistic approach for optimizing all components of their company’s enterprise value:

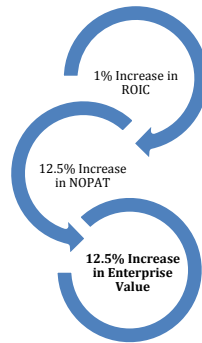
- **Current Value of Operations:** Work existing assets harder (profitable revenue growth, intelligent cost reduction, working capital optimization, infrastructure rationalization).



- **Non-Operating Assets:** Leverage research studies to understand how Capital Markets react to various capital allocation decisions (new investments, share repurchases, dividend increases, M&A, spin-offs, divestitures).
- **Future Value of Growth Opportunities:** Embed “Agile” principles and “Design Thinking”, along with latest financial technologies to measure and manage growth initiatives (Product / Service Innovation, Operations Innovation, Business Model Innovation).

### Improving ROIC

Capital allocation is a senior management team’s most fundamental responsibility. The objective of capital allocation is to build long-term value. This is a fundamental principle of value creation and applies to publicly-traded and privately-held companies at all stages of a company’s life cycle. Capital efficiency is measured by the metric Return on Invested Capital. ROIC has more impact on Enterprise Value than any other metric. For additional insights on the importance of ROIC as driver of enterprise value, see [ROIC: The Paradigm For Linking Corporate Performance To Valuation](#).



Increasing ROIC by just 1% can lead to significant increases in a company’s operating profits & Enterprise Value. For example, if a company’s ROIC is 8%, and its WACC is 8%, a 1% increase in ROIC leads to a 12.5% increase in Net Operating Profits and a 12.5% increase in enterprise value / shareholder value.

### A New Approach for Managing Innovation Initiatives

A company’s ability to optimize its FVGO is dependent on how fast it can innovate and create new products / services that will earn a ROIC greater than its WACC. However, the analysis of innovation initiatives is one of the most difficult management challenges as investments may be required over a number of years during periods of high uncertainty. Traditional Valuation Methodologies, such as Discounted Cash Flow and Net Present Value, systematically undervalue innovation initiatives since they cannot account for the value of managerial flexibility and ignore the future value of growth opportunities the investment can generate.

Advances in enabling technologies (i.e., simulation, scenario planning, optimization engines) and data analytics have provided executives with the tools they need to predict the impact of innovation initiatives on enterprise value more accurately, allowing managers to redeploy capital to more promising opportunities as uncertainties are resolved over time.

### Aligning Expectations

Top management is the most informed stakeholder for setting expectations for both external stakeholders (analysts, debt holders, shareholders) as well as internal stakeholders (Board of Directors, Business Unit Managers). Executives need to explain in a transparent manner how their capital allocation initiatives align with the company’s path-to-growth strategy.

Due to the shrinking relevance of accounting information, external stakeholders (analysts, shareholders, SEC) are encouraging companies to provide Non-GAAP disclosures that provide insights into the true economic performance of the enterprise, along with transparency into the key drivers of the enterprise’s growth opportunities.

Communications with analysts, investors and advisors is complicated due to potential litigation if things don't turn out as projected. However, recent research shows that enhanced disclosures decreases stock price volatility and mitigate the consequences of shareholder litigation.

Concentrated efforts should be made by senior executives to understand the basis of the assumptions used by analysts in evaluating their company's current and future growth prospects. Gaps between top management and analysts' expectations should be resolved to reduce surprises in the future. In other words, the objective is to reduce the information cost of external stakeholders and reduce the "noise" surrounding expectations.

Organizations that excel at aligning expectations realize the following benefits:

- Reduced information asymmetry
- Intrinsic value of enterprise aligned with market value
- Reduced litigation risk
- Valuation gaps reduced or eliminated
- Reduced stock price volatility and cost of capital



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#### About TechCXO

TechCXO is an executive professional services firm that addresses our clients' most critical functional and strategic issues in obtaining capital, entering new markets, increasing revenue, improving margins, and optimizing enterprise value.

#### **David Trainer CEO New Constructs**

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#### About New Constructs:

New Constructs leverages the latest in machine learning to analyze structured and unstructured financial data with unrivaled speed and accuracy. The firm's forensic accounting experts work alongside engineers to develop proprietary NLP libraries and financial models based on the best fundamental data in the business for stocks, ETFs and mutual funds. Clients include many of the top hedge funds, mutual funds and wealth management firms. Partnerships with Thomson Reuters, Scottrade, Interactive Brokers and Ernst & Young provide leveraged distribution into multiple markets. David Trainer, the firm's CEO, is regularly featured in Barron's, Marketwatch.com, The Wall Street Journal and on CNBC as a thought leader on earnings quality, valuation and investment strategy.

*Disclosures: David Trainer and Dan O'Connor receive no compensation to write about any specific stock, sector, style, or theme.*



## ***New Constructs® – Profile***

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### ***How New Constructs Creates Value for Clients***

We find it. You benefit. Cutting-edge technology enables us to scale our [forensic accounting expertise](#) across 3000+ stocks. We shine a light in the dark corners of SEC filings so our clients can make safer, more informed decisions.

Our [stock rating methodology](#) instantly informs you of the quality of the business and the fairness of the stock's valuation. We do the diligence on earnings quality and valuation so you don't have to.

In-depth risk/reward analysis underpins our ratings. Our rating methodology grades every stock, ETF, and mutual fund according to what we believe are the 5 most important criteria for assessing the quality of an equity. Each grade reflects the balance of potential risk and reward of buying that equity. Our analysis results in the 5 ratings described below. Very Attractive and Attractive correspond to a "Buy" rating, Very Dangerous and Dangerous correspond to a "Sell" rating, while Neutral corresponds to a "Hold" rating.

QUESTION: Why shouldn't fund research be as good as stock research? Why should fund investors rely on backward-looking price trends?

ANSWER: They should not.

Don't judge a fund by its cover. Take a look inside at its holdings and understand the quality of earnings and valuation of the stocks it holds. We enable you to choose the best fund based on its stock-picking merits so you do not have to rely solely on backward-looking technical metrics.

The drivers of our [forward-looking fund ratings](#) are Portfolio Management (i.e. the aggregated ratings of its holdings) and Total Annual Costs. The Total Annual Costs Rating ([details here](#)) captures the all-in cost of being in a fund over a 3-year holding period, the average period for all fund investors.

### ***Our Philosophy About Research***

Accounting data is not designed for equity investors, but for debt investors. [Accounting data must be translated into economic earnings](#) to understand the profitability and valuation relevant to equity investors. Respected investors (e.g. Adam Smith, Warren Buffett and Ben Graham) have repeatedly emphasized that accounting results should not be used to value stocks. [Economic earnings](#) are what matter because they are:

1. Based on the complete set of financial information available.
2. Standard for all companies.
3. A more accurate representation of the true underlying cash flows of the business.

### ***Additional Information***

Incorporated in July 2002, [New Constructs](#) is an independent publisher of investment research that provides clients with consulting and research services. We specialize in quality-of-earnings, forensic accounting and discounted cash flow valuation analyses for all U.S. public companies. We translate accounting data from 10Ks into economic financial statements, i.e. [NOPAT](#), [Invested Capital](#), and [WACC](#), to create [economic earnings models](#), which are necessary to understand the true profitability and valuation of companies. Visit the [Free Archive](#) to download samples of our research. New Constructs is a [BBB accredited](#) business and a member of the [Investorside Research Association](#).



## *DISCLOSURES*

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