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3Q 2014:
Skinny Bears Hiding Behind Trees

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Introduction

In the wake of the Healthcare.gov debacle, I find myself returning back and again to the absurdity of the government's handling of technology. I first touched on this subject in 3-Sigma Value's *First Quarter 2014 Letter*: *When the Levee Breaks*, in which I wrote about a company called **Castlight Health (CSLT)**, an over-hyped consumer healthcare information portal for enterprises that was founded by President Obama's Chief Technology Officer Todd Park. "*One of the key factors underlying the probable failure of Castlight is the nature of the management team – a group of politicos/academics that are inured to wasting the government's (er, the taxpayer's) money. When technologists work for the government or for a government sponsored entity such as a Too-Big-to-Fail Bank, they detach themselves from the responsibilities of capitalism and money grows on trees. They spend and spend until it works with no care in the world of budgets and investors. Now that these same technologists are assembling in the private sector, to serve the enterprise as opposed to the government, they must alter their profligate ways, and alter them immediately.*"

The study of government outsourcing is the study of inefficiency. From large defense contractors to small IT consultants, the process of bidding to supply the U.S. government with goods and services, and in particular supplying technology, is pure bureaucracy. Profit is capped and the government is a pain-in-the-neck customer appealing to contractors more skilled at politics than development. To illustrate, we focus this analysis on two companies that generate the majority of their revenues from the U.S. government. The first, discussed later in this letter, is a small $500 million market cap IT consulting company masking as a software developer. The second, profiled separately, is a huge $10 billion Canadian-based IT services roll-up with a U.S. subsidiary that served as the general contractor for Healthcare.gov.

While the market cap differential between these two companies is substantial, their businesses are remarkably similar:

1. **Roll-ups of IT consulting firms with ID/IQ contracts**. Throughout the operations of the federal government, there are companies given umbrella contracts to do unspecified technology work. These indefinite-delivery/indefinite-quantity, or ID/IQ, contracts can be valuable assets because when a specific job is ordered by the government, the list of potential vendors is predetermined. The use of "pre-qualified" contractors is a limiting factor that

inherently favors the establishment over entrepreneurship. Reliance on these old, stale lists is the reason for the Healthcare.gov debacle.

2. **Flagrant manipulators of acquisition accounting.** The earnings of these roll-ups are overstated and therefore unsustainable. Free cash flow is the only metric that matters; everything else is manipulated by acquisition accounting. Specifically, in the weeks before an acquisition closes (called the stub period), after an acquirer has had the opportunity and access to all the books and records of the target company, the acquirer is able to make adjustments to the balance sheet of the target by writing down the value of its assets and/or increasing its liabilities. These write-downs are offset by an increase in goodwill – which is the difference between price paid and book value. Mechanically, what the buyer is doing is making the purchased company look worse, so that on a go forward basis the operations appear more profitable. Congrats on the turnaround, the analysts will say. To identify this sort of manipulation, we look for significant increases in goodwill and other balance sheet accounts, and significant decreases in reported profit during the stub period.

3. **Growth from acquisitions masks underlying deterioration in the business**. The IT contractor responsible for Healthcare.gov was characterized to me as "empty halls with empty offices". The issue is the departure of key employees. Once a key employee is paid out after his or her company has been bought out, he's generally on to the next project. Financially, it doesn't make sense for a talented technologist to stay and integrate and conform when the market for skills is so strong.

4. **Over-valued, any normal way you look at it**. These companies may or may not appear fairly-valued on a *pro forma* or "adjusted" EPS or EBITDA basis but either way the inputs are false which means the output is false. The proliferation of non-GAAP accounting is a scourge on investing and one of the key reasons for the most recent bout of market exuberance. It has become common practice for companies to mix together non-GAAP and GAAP accounting, acknowledge the complexity, and ultimately communicate to investors in terms of non-GAAP numbers. It's a sly move. They make the financial reporting so complex that they have to simplify it. When simplifying, they eliminate certain expenses. The result is pro forma numbers that are misleading.

   For acquisition-based business models, or "roll-ups" as commonly known, there are three categories of expenses regularly excluded from earnings that must be added back in order to accurately compare and contrast valuations. The first is *amortization of acquired intangibles*. It doesn't matter whether a technology company builds or buys its intellectual property as long as both forms of expenditure are accounted for properly and consistently when comparing earnings quality and growth. Therefore, to eliminate acquisition-related expenses from earnings is to eliminate research and development (R&D). Similarly, these companies spend heavily on *stock-based compensation*, a real expense, especially when it comes time to divvy up the proceeds from a sale. Finally, because acquiring and restructuring companies is the core business of a roll-up, *restructuring expenses* are recurring and must be included in the calculation of earnings.

Skinny Bears Hiding Behind Trees

Founded in 2008 by CEO and former NSA official Leonard Moodispaw, **KEYW Holding (KEYW)** is a cybersecurity provider to government and corporate clients. In 2013, 2012, and 2011 respectively, 93%, 96%, and 97% of revenues came from the U.S. government, and the underlying strategy in 2014/2015 is to diversify into commercial cyber-security, an effort that Moodispaw equates to "a startup"; which in other words means investors should expect any organic growth to generate losses.

The customer concentration at KEYW is dangerous, warranting a discount valuation compared to other IT consultants. For the year ended December 31, 2013, the ten largest programs (all US government) accounted for a total of $160 million, or 54% of total revenue.

KEYW Capitalization as of 6/30/14	
Price as of 9/30/14	11.07
x FD Shares Out. (incl. anti-dilutive)	45.0
= Market Capitalization	**498.1**
- Cash & Equivalents (pro forma refinancing)	19.2
+ Debt (7/21/14 sold $130M of convertible notes due 2019)	130.0
= Enterprise Value	**608.9**
EV/Sales -- 2013	**2.1x**
EV/Sales -- 2014	**2.0x**
EV/Sales -- 2015	**1.9x**
EV/EBITDA -- 2013	**29.2x**
EV/EBITDA -- 2014	**38.0x**
EV/EBITDA -- 2015	**23.8x**

KEYW reports two segments: Government Solutions ($289 million of 2013 revenue) and Commercial Cyber Solutions ($10 million). The government business is under pressure due to budget tightening, new and stronger competition, and the roll-over of contracts that are currently over-earning. KEYW is not an integrated technology provider, it is not a platform. It is a leveraged roll-up of 15 small government contractors.

KEYW is a Roll-Up of 15 Consulting Firms with U.S. Government Contracts		
	Date of Acq	Price Paid
1 IDEAL Technology	1/31/2013	9.2
2 Dilijent Solutions	12/31/2012	NA
3 Rsignia	11/26/2012	NA
4 Sensage	10/12/2012	88
5 Poole & Associates	10/1/2012	125.7
6 Flight Landia	8/5/2011	30
7 Forbes Analytic Software	5/2/2011	16.6
8 JKA Technologies	3/31/2011	13.7
9 Everest Technology Solutions	12/10/2010	30
10 Sycamore US	11/29/2010	28.1
11 Insight Information Technology	3/12/2010	10.5
12 The Analysis Group	2/22/2010	62
13 General Dynamics Advanced	12/7/2009	7.5
14 Leading Edge Design & Systems	10/29/2009	8
15 Embedded Systems Design	7/23/2009	4.1
Total		433.4
vs.		
Enterprise Value (EV)		608.9

KEYW's core strategy is to transform itself from a loosely integrated group of government contracts into a software company, from a caterpillar into a butterfly. Is it impossible? No. I see butterflies every day. The vision is clear – cybersecurity is mission-critical, desperately needed, failing everywhere. The challenge is execution.

KEYW spends so little on research and development (R&D) that it doesn't even account for it as an expense on its income statement. I searched through the Company's 10-Q and R&D is nowhere to be found. Only in the notes to the 10-K did I find that KEYW spent approximately

$7.5 million, or 2.5% of revenue, on R&D in 2013[1]. According to management, spending on R&D in 2014 is expected to "be flat or increase slightly". In contrast, spending on amortization of acquired intangibles was $24.7 million in 2013, more than 3x the amount spent on R&D. As discussed earlier, because it doesn't matter whether a technology company builds or buys its intellectual property as long as both forms of expenditure are accounted for properly and consistently, we treat R&D and amortization equally for the purpose of calculating earnings.

KEYW's transformation strategy is based on a newly released cyber security "platform" branded HawkEye G. Upon close inspection, Hawkeye G falls into a category we call *polishing turd*. In fact, Hawkeye G, cool nickname and all, is the definition of polished turd. In October 2013, KEYW released HawkEye G coincident with the establishment of Hexis Cyber Solutions, a new commercial segment. Until late 2013, KEYW was nothing more than a collection of government contracts. Then, to reposition the company as a cybersecurity platform company as opposed to a government contractor they branded a piece of internal technology. Specifically, Hawkeye G is Sensage rebranded (KEYW paid $88 million for it in October 2012). Nearly all of the $7.5 million of R&D is spent on Hexis Cyber Solutions and Hawkeye G (representing $88 million of enterprise value at cost), which means next to nothing is being spent on $345 million of acquisitions. These assets are declining in value as contracts roll off or re-price at lower levels.

Current margins are unsustainably high, as acknowledged by the CEO. At best (Upside Case operating scenarios), margins will trend toward the same levels as other government contractors (~10% operating margin).

Management, Credibility & Guidance

Founder/CEO and former NSA official, Leonard Moodispaw, is a bombastic promoter whose eccentricities are on full display on the Company's website and on every conference call. Posted on the website is "KEYW Acquisitions Rules", a vacuous list of statements that is less a set of rules than a stream of consciousness. "*We are always pleased to see opportunities to acquire companies that meet our criteria. Because we are approached often, we wish to guide those who want to help us.* ***First and foremost; we don't do auctions!*** *We don't forget bankers who assure us that they are not conducting an auction but we find that they are. We will remain focused on that which we know best: the intelligence business. We don't pay "top dollar" but we do offer a fair price including equity because we want people who join us to share in the future of KEYW –*

[1] Cumulative R&D (2011-2013) = $15.170 million.

*we want and expect management to be a key part of KEYW post acquisition. When we first meet, we ask sellers to tell us their expectations of value. We will quickly let them know if we are interested at that price. It is not wise to suggest a valuation expecting us to negotiate. We are only interested in acquisitions which are immediately accretive to earnings. We conduct due diligence quickly and will terminate discussions quickly if we are not satisfied with what we learn****. Last but not least; we don't do auctions!!!***"

On KEYW's Q1 2014 earnings call, in his summation before opening the call to questions Moodispaw said, "*So I recognize there are people out there who in the investment community that like to look for* ***skinny bears behind trees*** *and find reasons to justify their short positions or whatever their take of the day is. I do applaud those investors who tell me as recently as inside Ritaville, don't change a thing. Keep doing what you're doing because we're supporting the plan. Once again, we're doing exactly what we said we're doing, and we're making great progress. So with that, we'll turn it over to questions.*"

One of the oddest statements I've ever heard from a paid CEO. I wanted to short the stock the moment I heard this. I played it over and over, and later found that he uses this moniker and it's laughed off as part of his eccentric personality. Moodispaw is so paranoid of short sellers that it raises a red flag. If there were legitimate technology and a sustainable business in KEYW then he would let performance speak for itself, the way all great CEO's do. He's self-conscious because he's a salesman, always in promoter mode. Objectively, it's hard to believe anything that comes out of his mouth.

On March 20, 2014, CFO John Krobath suddenly resigned "to pursue other professional opportunities." Shortly thereafter, in a surprise move, KEYW released four years of financial guidance, an unheard of move. The guidance, which I use as the basis for Upside Case operating scenarios, represents a magical turnaround.

KEYW Holding (KEYW) - Upside Case Operating Scenario (based on management's guidance)	2014	2015	2016	2017
By Segment:				
Government Solutions - Revenue	271.3	289.3	306.7	325.1
% Growth	*-6.1%*	*6.6%*	*6.0%*	*6.0%*
Government Solutions - EBITDA	43.0	47.3	52.8	58.9
% Margin	*15.8%*	*16.3%*	*17.2%*	*18.1%*
Hexis / Commercial - Revenue	18.1	40.0	70.0	115.0
% Growth		*121.0%*	*75.0%*	*64.3%*
Hexis / Commercial - EBITDA	-22.1	-14.4	0.0	24.7
% Margin	*-122.1%*	*-36.0%*	*0.0%*	*21.5%*
Consolidated - Revenue	289.4	329.3	376.7	440.1
% Growth	*-3.1%*	*13.8%*	*14.4%*	*16.8%*
Consolidated - EBTDA	20.9	32.9	52.8	83.6
% Margin	*7.2%*	*10.0%*	*14.0%*	*19.0%*

These numbers are plucked out of thin air, with no basis in actual micro-analysis. There is no consideration of actual unit volumes and ASPs. Supposedly, Hexis will magically sell $40.0 million on the nose and then magically break-even in 2016 at $70.0 million. Revenue from Government Solutions is supposed to inflect in 2015, flipping from negative 6% growth to positive 6% growth. How likely is this scenario?

In conjunction with the new four-year guidance, KEYW refinanced its capital structure by replacing its revolver/term loan with $130 million of convertible notes. The conversion price was $14.83 and the Company paid to increase it to $19.11, representing a 55% premium over the stock price. For the purpose of this analysis, we assume the debt won't ever be converted therefore we account for it as debt rather than dilution.

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KEYW Holding (KEYW) Financial Model - Base Case Operating Scenario 1	2011	2012	2013	2014	2015	2016
Revenue:						
Government Solutions	190,587	240,245	288,909	271,300	271,300	271,300
% Change - YoY		26%	20%	-6%	0%	0%
Commercial Cyber Solutions	0	3,275	9,823	18,100	33,429	48,429
% Change - YoY			200%	84%	85%	45%
Total Revenue	**190,587**	**243,520**	**298,732**	**289,400**	**304,729**	**319,729**
% Change - YoY		28%	23%	-3%	5%	5%
COGS:						
Government Solutions	133,950	159,180	197,380	187,076	187,730	187,730
% of Revenue				69.0%	69.2%	69.2%
Commercial Cyber Solutions	0	547	1,840	4,274	7,988	11,572
% of Revenue				23.6%	23.9%	23.9%
Total COGS	**133,950**	**159,727**	**199,220**	**191,350**	**195,718**	**199,303**
Gross Profit	56,637	83,793	99,512	98,050	109,011	120,426
% Margin	29.7%	34.4%	33.3%	33.9%	35.8%	37.7%
Operating Expenses:						
Cash Opex	41,399	59,189	84,701	89,461	91,419	95,919
% of Revenue	21.7%	24.3%	28.4%	30.9%	30.0%	30.0%
Intangible Amortization	13,410	21,411	24,658	11,927	12,000	12,000
% of Revenue	7.0%	8.8%	8.3%	4.1%	3.9%	3.8%
Total Operating Expenses	**54,809**	**80,600**	**109,359**	**101,388**	**103,419**	**107,919**
Operating Income (EBIT)	**1,828**	**3,193**	**-9,847**	**-3,338**	**5,592**	**12,508**
% Margin	**1.0%**	**1.3%**	**-3.3%**	**-1.2%**	**1.8%**	**3.9%**
Other income (expense), net	-1,075	-2,264	-9,792	-3,680	-3,250	-3,250
Pre-tax Income	753	929	-19,639	-7,018	2,342	9,258
Provision (Benefit) for Taxes	218	-83	-9,005	-2,480	820	3,240
Tax Rate	29.0%	-8.9%	45.9%	35.3%	35.0%	35.0%
Net Income	535	1,012	-10,634	-4,538	1,522	6,018
FD Shares Outstanding (incl. anti-dilutive)	35,732	38,978	44,034	44,785	44,997	44,997
EPS	0.01	0.03	-0.24	-0.10	0.03	0.13
D&A	15,492	25,780	30,667	19,345	19,945	20,545
EBITDA	**17,320**	**28,973**	**20,820**	**16,006**	**25,537**	**33,052**
+ Stock-Based Comp	2,829	3,024	5,731	6,424	6,000	6,000
Adjusted EBITDA	**20,149**	**31,997**	**26,551**	**22,430**	**31,537**	**39,052**
Free Cash Flow:						
NOPAT	1,299	3,478	-5,332	-2,159	3,635	8,130
+ D&A	15,492	25,780	30,667	19,345	19,945	20,545
+ Stock-Based Comp	2,829	3,024	5,731	6,424	6,000	6,000
- Increase in Working Capital	-6,647	-11,676	1,406	-4,732	0	0
- Capex	-3,508	-10,721	-8,952	-10,655	-12,000	-12,000
Unlevered Free Cash Flow	**9,465**	**9,885**	**23,520**	**8,223**	**17,579**	**22,675**
Interest Expense (Income), net of tax shield	-644	-2,513	-1,899	-2,380	-2,113	-2,113
Free Cash Flow	**8,820**	**7,372**	**21,621**	**5,843**	**15,467**	**20,562**

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Valuation

What is KEYW worth? P/E is meaningless because there is no E. EBITDA is low quality because EBIT is negative. DCF makes the most sense because it always does (cash is king). We approach valuation here in two ways, one, on the basis of the whole-company, and two, on the basis of only the government business, in other words assuming KEYW shuts down Hexis, arresting the losses. Because Hexis is a money loser in the Base Case operating scenarios, the value of a standalone government contractor is more valuable than the combined company which is a confused jumble of polished turd.

KEYW is not a software company and therefore should not be valued as if it were one. KEYW is a government contractor that is over-earning on its current contracts. The best comps are government contractors focused principally on delivering technical services:

Government Contractors Focused on Delivering Technical Services

Company Name	Price as of 9/30/2014	Shares Out	Market Cap	Debt & Pension	Cash	Enterprise Value	Revenue 2013	Revenue 2014	EBITDA 2013	EBITDA 2014	EPS 2013	EPS 2014	EBITDA Margin 2013	EBITDA Margin 2014
KEYW Holdings (KEYW) - over 90% US govt	$11.07	45.0	498.1	130.0	19.2	608.9	298.7	289.4	20.8	16.0	-0.24	-0.10	7.0%	5.5%
KEYW is a leveraged roll-up of government contracts masking as a software company.							**2.0x**	**2.1x**	**29.2x**	**38.0x**	**NM**	**NM**		
Science Applications Int'l (SAIC) - over 90% US govt	$44.23	48.9	2,162.8	502.0	247.0	2,417.8	4,121.0	4,000.0	196.0	256.0	2.27	2.76	4.8%	6.4%
SAIC separated from the renamed Leidos (SAI)							**0.6x**	**0.6x**	**12.3x**	**9.4x**	**19.5x**	**16.0x**		
CACI Int'l (CACI) - over 90% US govt	$71.27	26.0	1,851.1	1,360.0	64.5	3,146.7	3,681.9	3,564.6	324.9	322.6	6.35	5.38	8.8%	9.0%
							0.9x	**0.9x**	**9.7x**	**9.8x**	**11.2x**	**13.2x**		
Booz Allen Hamilton (BAH) - 98% US govt	$23.40	149.6	3,501.3	1,655.1	319.4	4,837.0	5,758.1	5,478.7	520.2	532.9	1.45	1.54	9.0%	9.7%
							0.8x	**0.9x**	**9.3x**	**9.1x**	**16.1x**	**15.2x**		
ManTech Int'l (MANT) - 99% US govt	$26.95	40.0	1,078.4	55.0	30.7	1,102.8	2,310.1	1,900.0	171.2	NM	-0.17	1.30	7.4%	NA
							0.5x	**0.6x**	**6.4x**	**NM**	**NM**	**20.7x**		
Engility Holdings (EGL) - 98% US govt	$31.17	18.0	561.8	372.4	22.7	911.5	1,407.4	1,400.0	120.3	100.0	2.81	2.34	8.5%	7.1%
EGL was spun-off from L-3 Communications (LLL) in July 2012							**0.6x**	**0.7x**	**7.6x**	**9.1x**	**11.1x**	**13.3x**		
ICF Int'l (ICFI) - 72% US govt	$30.79	20.1	618.3	132.8	8.0	743.1	949.3	1,030.0	85.4	65.0	1.95	2.23	9.0%	6.3%
							0.8x	**0.7x**	**8.7x**	**11.4x**	**15.8x**	**13.8x**		
NCI, Inc (NCIT) - 100% US govt	$9.51	13.8	131.0	0.0	12.6	118.3	332.3	310.0	20.4	18.5	0.60	0.62	6.1%	6.0%
							0.4x	**0.4x**	**5.8x**	**6.4x**	**15.9x**	**15.3x**		
Others significant government contractors focused on delierving technical services include: Serco Group plc (SRP.L) - based in UK, AECOM (ACM), CRA International (CRAI), Navigant Consulting (NCI), Deloitte, PriceWaterhouseCoopers, Sapient (SAPE), SRA International, Accenture (ACN), Computer Sciences Corporation (CSC), HP Enterprise Services, IBM and Unisys.														
Average							**0.6x**	**0.7x**	**8.5x**	**9.2x**	**14.9x**	**15.4x**	**7.7%**	**7.4%**

EBITDA multiples for government contractors that deliver IT services range from around 6x to 10x EBITDA. The one outlier is KEYW. To value KEYW, we use a discounted cash flow analysis (DCF) applying the following basic assumptions:

1. The terminal value multiple is equal to the average EBITDA multiple of the comps, that is 9.2x.
2. Free cash flows are discounted by the Company's WACC, coincidentally 9.2%.

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KEYW Valuation Summary	
DCF Valuation - Base Case Operating Scenario	**$3.24**
Implied Equity Value	145.6
Implied Enterprise Value	256.4
Implied EV / 2013 Sales	0.9x
Implied EV / 2014 Sales	0.8x
Implied EV / 2013 EBITDA	**12.3x**
Implied EV / 2014 EBITDA	**16.0x**

Taking into account all scenarios, including management's guidance, I derive a probability-weighted target price of $3.30 (down 70% from the current price). If Moodispaw delivers according to his plan and Hexis is a huge success then KEYW is worth maybe $6. On the downside, a zero isn't out of the question.

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