Valuation Techniques and Emerging Analytics

Jim Kurtenbach
jmk@iastate.edu
515-294-9994

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Observations

• Valuation methods tend to be industry specific or preferred
• Sensitivity analysis of forecasts is critical
  • Identify key lessons learned from prior business cycles
• Opportunities for closely-held M&A will increase as baby boomers retire
• Demand for valuation due to generational changes in ownership will increase
• Network with bankers, financial advisors, and executive coaches to form relationships with closely-held and family businesses
Valuation of Private Firms

• Comparable company analysis
• Precedent transactions - with premium paid or discount taken
• Asset-based valuation
• Discounted cash flows
• Multiples
Valuation Based upon Multiples

• Multiples of:
  • Revenue multiples
  • Price to Earnings (PE)
  • Price to Net Sales
  • Price to Assets
  • Price to various profit margins
  • EBITDA
  • FCF
Factors for Analysis of Private Firms

- Innovators within Company – identify future, must keep, players
- Technology innovations
- Cyber Risk profile – e.g., SOC I, SOC II
- Managerial accounting – target cost analysis or stuck in the past
- Business Intelligence and Competitive Intelligence (BI/CI)
- Strategic forecast or Budget driven
- Corporate Social Responsibility
- Litigation
- Safety program, evidence of SHE, HSE, ESH, SEH…
Industry Analysis

• BI / CI (again) – identify trade pubs and distribution network
  • Strategic and Competitive Intelligence Professionals (SCIP)
• Litigation (again)
• Trends: Impact of Unionization or Right to Work
• Structural changes due to federal, state, or local regulations
• Structural changes due to technology changes or market forces
• Evidence of activity with government relations
• Strategic communications and public relations
  • Role of emerging technologies
• Mergers and Acquisitions within the industry or related industries
Intellectual Property

• Retain or Share?
• Henry Ford example:
  • 1925 Ford Trimotor Aircraft
  • 35 patents, including navigation aids, offered royalty free to industry
• First to market or invest to protect?
Discount rates

• Weighted Average Cost of Capital (WACC)
  • Cost of Equity, Debt, Preferred Stock, and other forms of capital
  • Most commonly used for discounted cash flows and market estimates

• Cost of Equity Capital (Ke)
  • Typically based upon the capital asset pricing model (CAPM)
  • Ke = Risk Free + Beta (Return on the market – Risk Free)
  • Ke = Rf + B(Rm-Rf)

• Cost of Debt and similar forms of capital
  • Weighted average of the debt amount, by interest rate, by maturity
Free Cash Flow (FCF)

- Cash available for a given purpose
- Unleveraged FCF
  - Cash from operations less capital expenditures
- Leveraged FCF
  - Cash from operations, adjusted for debt borrowed and paid
Family Business and Succession Valuation

• Family Businesses represent over 50% of US GDP

• 30% make it to the 2\textsuperscript{nd} Generation; 14% to the 3rd Generation (Wealth Management Company; Conway Center for Family Business; and, similar in Forbes)

• IRS focus - three accepted valuation approaches:
  • Asset-based: Determine value by adding the sum of the parts of the business (net asset value)
  • Market: Compare the company to other companies in the same industry, of the same size, or within the same region
  • Income: Calculate the net present value of the benefit stream generated by the business (discounted cash flow)
Family (Public) Businesses

• Influence and control may not end with an IPO
  • FMC Chairman William C. Ford, Jr. & 2 family members on BOD
    • Class B shares, 2% of shares outstanding, yet 40% of voting power
  • Ben and Jerry’s Ice Cream
  • Heartland Transport
  • Walmart
  • Facebook
  • Oracle
  • Anheuser-Busch

• Role of limited issuances or voting classes or both methods
Data Sources

• Original Public Source: SEC EDGAR XBRL
• Fee-based Information Intermediaries: S&P Compustat, U. Kansas, U. Pennsylvania Wharton
• Investor & Brokerage Services, e.g., Fidelity, Schwab
• Information Intermediaries, e.g., Yahoo Finance, Bloomberg, Macrotrends
• Industry and Sector Analysis, e.g., Gartner
Market Capitalization VS Enterprise Value

• Mkt Cap - Value of equity capital on a public exchange
• Enterprise value (def. Investopedia)
  
  \[ EV = \text{market value of common stock} + \text{market value of preferred equity} + \text{market value of debt} + \text{minority interest} - \text{cash and investments} \]
ASC 606 Revenue Recognition

- Software industry – Workday example
- Timing and reporting of income statement and balance sheet items
- Unbilled Receivables
- Unearned Revenue
- Limited impact on statement of cash flows
At a high level, the impact on the income statement is twofold:

First, the new standard impacts the timing and classification of revenue for many of our customer contracts. In applying the standard retroactively, we had revenue changes in all periods and actually had some revenue “disappear” into our beginning retained earnings balance. In general, the standard simplified our subscription revenue recognition and added complexity to our professional services revenue recognition.

Second, the new rules require that we defer more contract acquisition costs and amortize those costs over a longer period of time.

There is also some movement in the balance sheet with increased assets for deferred costs, changes in deferred revenue, and the introduction of unbilled receivables. Importantly, and consistent with our belief in value of looking at cash flows, the standard has no impact on our cash flows statement.
Operating loss was $81.3 million, or negative 14.0% of revenues, compared to an operating loss of $88.9 million, or negative 20.2% of revenues, in the same period last year. Non-GAAP operating profit for the fourth quarter was $55.5 million, or 9.5% of revenues, compared to a non-GAAP operating profit of $25.3 million, or 5.8% of revenues, in the same period last year.¹

Net loss per basic and diluted share was $0.42, compared to a net loss per basic and diluted share of $0.44 in the fourth quarter of fiscal 2017. Non-GAAP net income per diluted share was $0.28, compared to a non-GAAP net income per diluted share of $0.16 in the same period last year.¹
Workday Jan 2018 Cash Flow

- Operating cash flows were $465.7 million and free cash flows were $324.2 million.²

- Cash, cash equivalents, and marketable securities were $3.3 billion as of January 31, 2018. Unearned revenues were over $1.5 billion, a 25.8% increase from the same period last year.
Workday Jan 2018 Non-GAAP

• Workday intends to use the **Workday Blog** as a means of disclosing material non-public information and for complying with its disclosure obligations under Regulation FD.

• ¹ Non-GAAP operating profit (loss) and non-GAAP net income (loss) per share exclude share-based compensation expenses, employer payroll tax-related items on employee stock transactions, amortization expense for acquisition-related intangible assets, and debt discount and issuance costs associated with convertible notes. See the section titled "About Non-GAAP Financial Measures" in the accompanying financial tables for further details.

• ² Free cash flows are defined as operating cash flows minus capital expenditures (excluding owned real estate projects). See the section titled "About Non-GAAP Financial Measures" in the accompanying financial tables for further details.
<table>
<thead>
<tr>
<th><strong>Valuation Measures</strong></th>
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<tr>
<td><strong>Market Cap (intraday)</strong></td>
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<tr>
<td><strong>Enterprise Value</strong></td>
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<tr>
<td><strong>Trailing P/E</strong></td>
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<td><strong>Forward P/E</strong></td>
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<td><strong>PEG Ratio (5 yr expected)</strong></td>
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<td><strong>Price/Sales (ttm)</strong></td>
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<tr>
<td><strong>Price/Book (mrq)</strong></td>
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<tr>
<td><strong>Enterprise Value/Revenue</strong></td>
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<td><strong>Enterprise Value/EBITDA</strong></td>
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### Yahoo Finance Workday 10 Dec 2018

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue (ttm)</td>
<td>2.62B</td>
</tr>
<tr>
<td>Revenue Per Share (ttm)</td>
<td>12.20</td>
</tr>
<tr>
<td>Quarterly Revenue Growth (yoy)</td>
<td>33.80%</td>
</tr>
<tr>
<td>Gross Profit (ttm)</td>
<td>1.51B</td>
</tr>
<tr>
<td>EBITDA</td>
<td>-223.9M</td>
</tr>
<tr>
<td>Net Income Avi to Common (ttm)</td>
<td>-403M</td>
</tr>
<tr>
<td>Diluted EPS (ttm)</td>
<td>-1.88</td>
</tr>
<tr>
<td>Quarterly Earnings Growth (yoy)</td>
<td>N/A</td>
</tr>
<tr>
<td>Financial Metric</td>
<td>Value</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Total Cash (mrq)</td>
<td>1.58B</td>
</tr>
<tr>
<td>Total Cash Per Share (mrq)</td>
<td>7.19</td>
</tr>
<tr>
<td>Total Debt (mrq)</td>
<td>1.19B</td>
</tr>
<tr>
<td>Total Debt/Equity (mrq)</td>
<td>64.96</td>
</tr>
<tr>
<td>Current Ratio (mrq)</td>
<td>1.11</td>
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<tr>
<td>Book Value Per Share (mrq)</td>
<td>8.41</td>
</tr>
<tr>
<td>Operating Cash Flow (ttm)</td>
<td>482.69 Million</td>
</tr>
<tr>
<td>Levered Free Cash Flow (ttm)</td>
<td>633.79 Million</td>
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Workday Quarterly Sales and Cash from Ops
(x 1,000)
During the quarter ended December 31, 2017, Microsoft provided software services to a person or entity identified under section 560.304 of title 31, Code of Federal Regulations. The services constituted a cloud-based spam and malware filtering service and the cloud-based provision of Office 365 software services provided to two entities associated with the Iranian bank, Bank Sepah; Bank Sepah International PLC and Banque Sepah, respectively. For the former, an annual service fee equivalent to $600 was charged for a one-year period beginning in February 2017, and for the latter, use rights were charged at a price equivalent to approximately $55 per month from September 2016 through November 2017, totaling $770. It is not possible to determine the precise profits, if any, attributable to these activities, though they are less than the associated revenues. Microsoft has ceased providing these software services to these entities and has no intention of doing so in the future.
Future Valuation Trends for Data Analysis

- Data Analytics for accounting elements
  - Similar trends financial instrument design
  - Math models with limited interpretation, e.g. 2008 mortgage derivatives
- Machine learning around large data sets
- Textual analysis
- Blockchain – possible to apply to public data
  - Populous XBRL Platform (PXP) accumulates masses of data and makes it viewable via blockchain (UK)
- Yet, what if your desired data element is not coded in XBRL?
  - See “textual analysis”
Firm Complexity Matrix

Product Diversity

Product Innovation

Technology
Industry
Sample:

Amazon
Apple
Facebook
Garmin
Google
Intel
Microsoft
Motorola