



DISCUSSION MATERIALS FOR ENTERPRISE TECH INVESTING

PAUL CHEN

SEP 2021

OUTLINE

- General observations
- AI and Big Data
- Crypto and Blockchain
- Paul can contribute both as an investor and portfolio manager
- Sample investment memo on tableau

AN EXCITING TIME TO INVEST IN ENTERPRISE TECH!

- AI, Big Data and blockchain drive most things in enterprise tech
- AI & Big Data go hand in hand. Incumbent tech companies are the best-in-class investment opportunities in AI and Big Data. Investable startups have carved out niche use cases.
- Crypto has begotten blockchain and remains to be the best use case. But blockchain has more potential applications beyond crypto because it creates transparency and reduces risk of single point of failure
- Centralized crypto exchanges have broken out as the best business model, which has been challenged by DeFi lately. While decentralization fosters greater innovation, the centralized model offers stability, efficiency, and ease of use. The Holy Grail of crypto adoption is perhaps finding the balance.
- The overall strategy of growth equity is to get on the cap table, at favorable terms, of fast-growing companies with proven business model that have a clear path to an attractive liquidity event such as IPO or acquisition.
- Paul's investing DD cuts through the noise by leveraging rigorous qualitative and quantitative research
- Paul has a track record of picking winners with avg. returns of 19x



GENERAL OBSERVATIONS

TODAY'S TECHNOLOGIES ARE DRIVEN BY TWO DIFFERENT TIMELESS PHILOSOPHIES



AI, BIG DATA AND BLOCKCHAIN DRIVE MOST THINGS IN ENTERPRISE TECH

- The world undergoes a timeless Hegelian dialectic of centralization vs. decentralization
- Decentralization fosters greater innovation, reduces single point of failure, removes “the middleman”
- Centralization offers speed, stability, and ease of use.
- Computer technology, as a tool to express human will, is being used to augment both decentralization and centralization.
- **AI and Big Data** is the leading architecture for centralization while **blockchain** is the best blueprint for decentralization.




AI AND BIG DATA

AI & BIG DATA GO HAND IN HAND

- Without AI, big data tells us no useful insights and has no predictive power.
- Without big data, AI can't even be trained.
- As a result, incumbent tech companies that have the most elegant algorithms and massive datasets like FANG in US and BAT in China have significant competitive moat. They are the best-in-class investment opportunities in AI and Big Data.
- Investable startups have carved out niche use cases. Best examples are Databricks, Nuro and SambaNova.

INVESTMENT IDEAS IN AI & BIG DATA

Target	Rationale	Sector	Check Size / Est. Valuation	Risks
	All modern data transactions demand reliable, fast and production level engineering. Databricks built a leading enterprise business catering to AI and Big Data applications by leveraging the popular open-source platform Apache Spark. Founders of Spark also founded Databricks. 20-50x faster response times in data inquiry. >\$600mm in annual recurring revenue. Avg. customer pays \$75k.	AI & Big Data	\$250 – 500mm / \$45bn	Not win market share against alternative data solutions like Snowflake and Confluent. On-premises data center providers could regain popularity as cloud costs rise.
	One of the top self-driving car companies that is commercializing through the delivery market; founders are first team members on Google's self driving project. \$100mm in revenue.	Self Driving	\$100-150mm / \$8bn	Uncertain regulation; scaling services in more markets and implementing new product into commercial readiness



CRYPTO AND BLOCKCHAIN



CRYPTO BEGETS BLOCKCHAIN AND REMAINS TO BE THE BEST USE CASE

- The blockchain architecture is conceived with the motivation of sending money among peers without “going through a financial institution”
- In other words, the first use case of blockchain is crypto. To this day, crypto has the strongest product market fit.
- But blockchain has more potential applications beyond crypto because it creates transparency and reduces risk of single point of failure
- Emerging blockchain applications include secure sharing of medical data, cross-border payments, personal identity security, voting, real estate processing

THE HOLY GRAIL OF MAINSTREAM ADOPTION

- Coinbase has established market leadership in the U.S. by being around the longest. It is analogous to “Yahoo!” in the early 2000s of the search market. Coinbase is known for the fiat gateway, brand awareness, and emphasis on compliance.
- Outside of the US, Binance.com and its ecosystem has risen to the top through focus on serving users with evermore diversified crypto products and community building as well as regulatory arbitrage. FTX is the latest contender in the global race for the lucrative crypto exchange business
- DeFi is challenging the centralized exchange model by sticking to Bitcoin’s original vision of a P2P network.
- With DeFi’s usability of smart contracts getting better, DeFi has the potential to be the disruptor of the traditional financial market.
- While decentralization fosters greater innovation, the centralized finance model offers stability, efficiency, and ease of use. The Holy Grail of crypto adoption is perhaps finding the **right balance between decentralization and centralization.**
- In the long run, the lucrative **exchange business model might disappear**, giving rise to companies with attractive alternative business models like Anchorage Digital

FINANCIAL HISTORY HAS CYCLED THROUGH CEFI AND DEFI



- It is no coincidence that the Bitcoin paper was written at the height of the 2008 financial crisis, i.e. as a response to the abuse of incumbent Wall Street financial institutions.
- Decentralization, as advocated by the crypto community, was a reaction to the lack of trustworthiness of centralized financial institutions.
- But there was a time when centralization was needed and even necessary. In the early 19th Century, the Rothschilds' tightly controlled banking network in Europe helped the English finance the money needed to defeat Napoleon.
- Since the rise of the Rothschilds, many powerful banking houses emerged like J.P. Morgan, Lehman Brothers, and Goldman Sachs. Once again, these centralized financial institutions played important roles during war times. Goldman Sachs' Sidney Weinberg helped FDR centralize America's factories for WWII industrialization.
- We are in a historic period of decentralization. But there might be a time for centralization one day. In fact, different regions in the world today are on different stages of this repetitive historic cycle.

RULE OF LAW IS GOOD FOR CRYPTO

- While there are short term tensions between regulators and crypto innovators, in the long run, countries with strong rule of law will likely become the the crypto markets with the highest trading volume.
- Throughout history, investors have preferred their hard-earned money to be protected from confiscation, which happens more frequently in countries that are ruled by men instead of law. As a result, the world's most active non-crypto financial markets are in countries that have strong rule of law. Examples include London, New York, Singapore, Zurich, Chicago, Tokyo, Frankfurt.
 - Hong Kong is a great example of how degrading rule of law is leading to a flight of capital.
- Crypto investors might want the same level of protection of their private property guaranteed by rule of law.

WORLDWIDE CUSTOMER PROBLEM

Region	Customer Problems	Corresponding Solutions	Opportunities for Crypto Companies
North America	<ol style="list-style-type: none"> 1. People do not trust Wall Street 2. Many are concerned about inflation 3. Traditional investment channels are too opaque to young people 	<ol style="list-style-type: none"> 1. Crypto; Robin Hood 2. Crypto; gold; houses 3. Crypto; Robin Hood 	<ul style="list-style-type: none"> • Offer differentiated products like GameFi, derivatives, staking, IEO and NFT • Leverage liquidity depth to facilitate payment • Faster execution • Build digital currency for the Fed
Europe	<ol style="list-style-type: none"> 1. Low interest rates result in few attractive investments 2. Smaller EU countries have little control over monetary and fiscal policies. 3. Traditional investment channels are too opaque to young people 	<ol style="list-style-type: none"> 1. Crypto 2. Crypto 3. Crypto; eToro 	<ul style="list-style-type: none"> • Offer differentiated products like GameFi, derivatives, staking, IEO and NFT • Build digital currencies for central banks • Leverage liquidity depth to create payment systems
China	<ol style="list-style-type: none"> 1. Consumers lack investment options. 2. Investors can't move money out of China easily. 3. There is no strong protection of private property. 	<ol style="list-style-type: none"> 1. N/A 2. N/A 3. N/A 	<ul style="list-style-type: none"> • Not much to do in China now except for keeping a casual dialogue with regulators. • When crypto becomes "inevitable", CCP might want help build its own crypto ecosystem.

WORLDWIDE CUSTOMER PROBLEM

Region	Customer Problems	Corresponding Solutions	Opportunities for Crypto Companies
Developing Asia, Africa, LatAm, and Middle East	<ol style="list-style-type: none"> 1. Consumers lack investment options. 2. There is no strong protection of private property. 3. Political instabilities lead to economic volatility. 4. Citizens distrust governments. 5. There is no reliable financial services including payment and value storage. 	<ol style="list-style-type: none"> 1. Crypto; 2. Crypto; 3. Crypto; USD/EUR assets; Gold 4. Revolutions; protest; immigration; 5. Mobile wallet; Crypto; Rappi in LatAm; Paypal 	<ul style="list-style-type: none"> • Offer differentiated products like GameFi, derivatives, staking, IEO and NFT • Leverage liquidity depth to create payment systems • Faster execution • Build digital currencies for central banks
Developed Asia e.g. Korea, Japan, SG	<ol style="list-style-type: none"> 1. Social economic immobility leads to few opportunities for young people 2. There are limited options to gamble or create wealth 	<ol style="list-style-type: none"> 1. Crypto 2. Crypto 	<ul style="list-style-type: none"> • Offer differentiated products like GameFi, derivatives, staking, IEO and NFT • Faster execution • Build digital currency for central banks

COMPARISON OF EXCHANGE PRODUCT OFFERINGS

Best selling product offering	Coinbase	Binance.US	Binance.com	FTX
Derivatives	Seeking liscence in US	N/A	No.1 in Market Share globally	Growing in market share fast; acquired LedgerX
Staking	Supports ETH 2.0, ALGO and XTZ, ATOM, Dai, USDC	Supports 7 coins including ALGO	In addition to ETH 2.0, accommodates a diversity of coins including DAI, Tether, BUSD, BTC and BNB	Lots of innovations around increased referral rates, maker fee rebates, bonus votes.
IEO	Hinted at offering it	N/A	No.1 in market share outside of U.S	Fast growing outside of U.S
NFT	N/A; can connect to other crypto wallets with NFT	N/A	Launched NFT marketplace in June	free swag NFTs, non-US marketplace





COMPARISON OF EXCHANGE PRODUCT OFFERINGS

Best selling product offering	Coinbase	Binance.US	Binance.com	FTX
CryptoCard	Visa Debit Card	N/A	Visa Debt Card	Visa Card (US only)
Payment	Coinbase Commerce	N/A	Binance Pay that supports >30 currencies	Receive payments to an FTX account or external wallet
Custody	Supports 90% of crypto; fiduciary under NY State Banking Law	Partners with third party banks	Partnership with Etana Custody	Provided by Coinbase Custody
Wealth Management	N/A	N/A	N/A	N/A

COMPARISON OF EXCHANGE PRODUCT OFFERINGS

Best selling product offering	Coinbase	Binance.US	Binance.com	FTX
DeFi Connector	N/A	N/A	PancakeSwap on Binance Smart Chain (BSC)	Serum built on Solana
Fiat Channel	No. 1 market share in U.S.	No. 2 market share in the U.S.	No. 1 market share outside of the U.S. and China	Fast growing

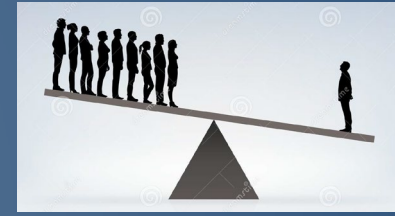
INVESTMENT IDEAS IN CRYPTO

Target	Rationale	Sector	Check Size / Est. Valuation	Risks
	UNI is the leading DeFi trading platform leveraging automatic market makers (AMMs). Daily trading fee is \$4mm / day, or \$1.3bn annualized. Since launching in Nov 2018, UNI generated \$1bn in fees for liquidity providers. It's a DeFi blue chip and lots of developers use them at work.	DEX	\$100mm / \$26bn	Price is too high; DeFi regulation might significantly slow down growth.
	Since launching in 2019, revenue grew 75x to \$85mm in 2020 and expects to make ~\$400mm in 2021. FTX's CEO SBF, is a rock star in the crypto community. He is the new "CZ" of Binance who shares CZ's product acumen but much more regulatory prudent. FTX moved at lightening speed, surprising many US players by buying derivatives company LedgerX, signaling FTX's ambition for the potentially huge US crypto derivatives market.	Centralized Exchange	\$100 – 150mm / \$25bn	Price is too high; regulation could tighten among top crypto companies like FTX; SBF might be inexperienced to deal with regulators and rapid corporate growth
	SOL has the lowest cost and fastest speed among the leading public chains. Crypto insiders believe "SOL is clearly the future. It's better than ETH." The developer team is super strong and is backed by SBF.	Layer 1 Chain	\$250 – 500mm / \$81bn	Price is too high; system could crash due to hyper demand
	Meta bet on all GameFi (play to earn) as YGG is a DAO investing in NFTs in games; Crypto gaming has grown in popularity largely due to its ability to allow players to collect and trade virtual assets that can be exchanged and traded anywhere in the world. Axie Infinity, a game, generated \$220mm in one month this summer, surpassing all other DeFi protocols.	DAO	\$50 – 75mm / \$6bn	Price is likely to be volatile; market participants might switch from one hot toy to another



PAUL CAN CONTRIBUTE BOTH AS AN INVESTOR AND PORTFOLIO MANAGER

GENERAL OBSERVATIONS ON TECH GROWTH EQUITY



1. The strategy of growth equity is to get on the cap table, at favorable terms, of fast-growing companies with proven business model that have a clear path to an attractive liquidity event such as IPO or acquisition.
2. At the growth stage, targets should have plenty of data for investors to conduct rigorous quantitative analysis on their financial returns.
3. The best companies tend to be well known. All the investors want to get on the cap table. As a result, they have abundant (if no unlimited) supply of capital. Money is therefore “commoditized.” The negotiating balance tilts in favor of founders over investors.
4. Therefore, the growth equity game is about screening the right targets and then pitching them differentiated access to investors’ platform and brand in addition to capital.
5. For companies that have raised Series C or later, explosive growth such as 5-10x annual revenue growth is rare. As a result, growth equity investors need to negotiate for great deal structure and pricing in order to achieve expected returns. This is different from early stage investing where deal terms matter less than just “getting on the Rocketship”.
6. As the team grows, allowing teammates to organically develop sector expertise is a useful way to cultivate leaders and delegate work in order to grow the team.
7. In the past few years, government stimuli have created lots of “hot money”. Valuations are at a historical high. In terms of competition with other funds, there are many growth equity funds with >\$5bn in AUM. It’s hard to differentiate on check sizes. After Softbank entered in the growth market in 2017, many funds are forced to invest at earlier stages.

PAUL'S DD CUTS THROUGH THE NOISE

1. My past [sample investment memo on Tableau](#)
2. Conduct original research including
 1. Personally use the product
 2. Extensive conversations with end users and procurement decision makers
 3. Conversations with managers and employees of target company
 4. Conversations with competitors
3. Conversations with other investors who know the company and space well
4. Compose industry and product overviews including competitive landscape
5. Conduct rigorous quantitative valuation analysis
 1. Project top down and bottoms up P&L by triangulating results from original research
 2. Compare my projection against consensus views and develop a variant perception from the market
 3. Conduct public comps, DCF and liquidation value analysis
6. Propose optimal deal structure including convertible debt or common equity
7. Propose expected IRR

PAUL CAN HELP WITH PORTFOLIO COMPANIES IN:

- **Business and Product Development**

- Leads strategy and execution of the first NFT campaign for one of the world's bestselling artists on Binance's DeFi NFT platform
- Completed 3 Partnership Agreements with companies in AI, Big Data, semiconductor and healthcare as part of Alibaba's investments
- Co-led the business agreement with data Artisans to create Realtime Compute for Apache Flink, a major product feature for Alibaba Cloud's \$10bn business



- **Corporate Development and Finance**

- Extensive skills in finance, M&A and investments. Selected transactions include:
 - At Alibaba, completed several investments and one acquisition in AI, Big Data, healthcare, robotics, autonomous cars, and other deep tech. Led Alibaba's acquisition of the open-source big data company data Artisans in Berlin, Alibaba's first acquisition in Europe.
 - At Goldman, completed \$20bn of transactions across North America, Europe, South America, and Asia



- **Government Relations**

- Worked with American and European regulators pertaining to Alibaba's investments
- Received Masters of Public Administration from Harvard's Kennedy School of Government
- A member of Council on Foreign Relations, the premier policy think tank in the US. My membership was nominated by ex-US Secretary of State Dr. Condi Rice





SAMPLE INVESTMENT MEMO ON TABLEAU

Tableau (NYSE: DATA)

LONG INVESTMENT IDEA
JANUARY 5, 2017

Investment Recommendation:

As the world gets even more saturated with data, technologies that harness this massive amount of data simply and usefully will be invaluable.

Tableau, the leading business intelligence and analytics company, is trading significantly lower than its fundamental value. I believe Tableau's stock should be worth 80-120% higher than what it is today.

In a downside scenario, the stock will be \$38 in two years, a decrease of 15% from the current price (assume current EV / Sales).

Agenda

- List of People Interviewed During Original Research
- Product Overview
- Industry Overview and Competitive Landscape
- Investment Thesis
- Valuation
- Deal Structuring
- Investment Concerns
- Key Questions for Additional DD

Original Research

I have tried to seek value add, original research on my investment thesis on Tableau. I used Tableau products myself, talked with people who regularly use smart BI products as well as employees of Tableau and its competitors

You will see these blue bubbles throughout the deck. These are quotes/paraphrases from people with whom I talked, or my own reflections as a user.

- I have personally tested Tableau, Qlik and Microsoft products
- Two VPs of Technology Division in charge of driving greater adoption of BI products like Tableau at a major financial institution
- Data specialist at a New York investment bank
- Tableau Enterprise Salesperson for Mid-Atlantic Region
- Two Qlik sales people, one of which is a specialist salesperson for SMBs
- Microsoft Power BI salesperson
- Global growth strategist at a major cloud company

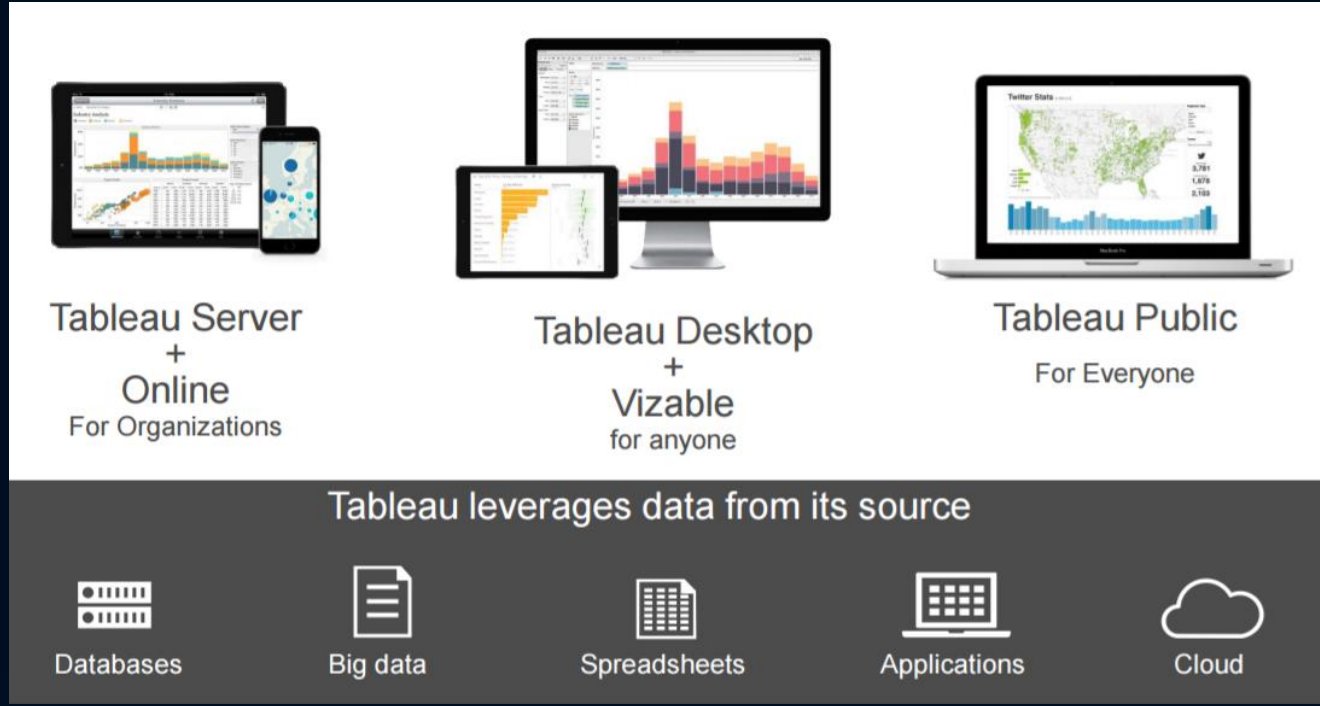
Intro to Tableau

Tableau is the Premier Big Data Visualization Software

“Tableau’s greatest strengths include 1) turning data into intuitive visuals, 2) compatibility with a diverse database, 3) easy to use for business people who do not know coding, 4) easy to share on the enterprise server.”

“On the flip side, since Tableau created a new product category, it requires new users to invest 1 or 2 hours to learn the interface. I recognize people like to stick to what they know. Additionally, since Tableau products are being updated rapidly, there are some technical difficulties including delayed processing.”

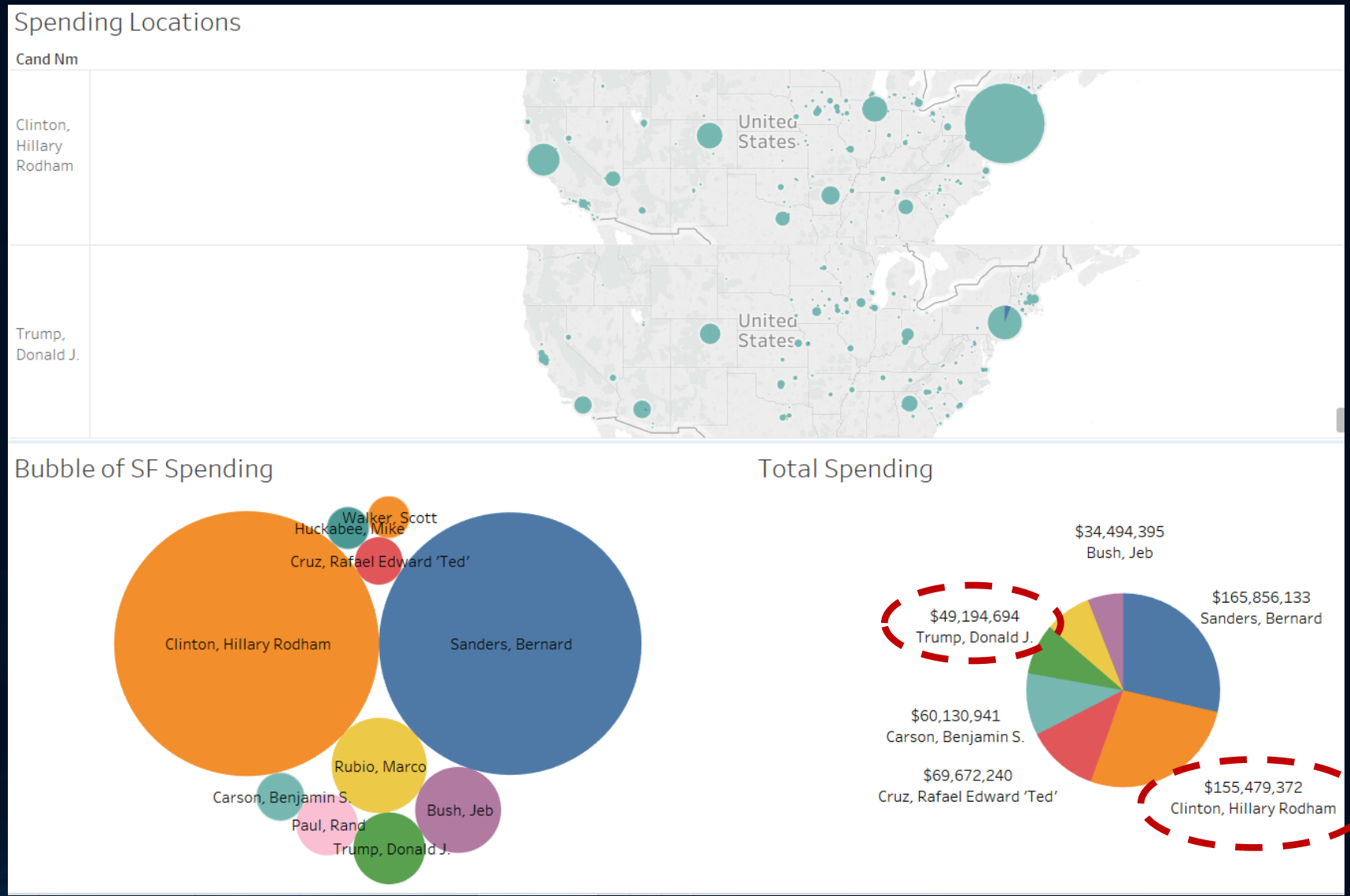
– VP of Technology at a Major Wall Street Firm



Tableau's Data Visuals are Intuitive and Powerful

2016 US PRESIDENTIAL SPENDING

Using Tableau, I can quickly create complex graphics that were either impossible or would have taken hours to do in Excel.



Global Business Intelligence Market is Fast Growing

GLOBAL BI AND ANALYTICS MARKET (\$BN)



• [Click here to see an interactive Tableau dashboard on BI market](#)

DRIVERS OF GROWTH

- Proliferation of data across all industries
- Modern BI as new normal
- Transition into cloud
- Ubiquity of analytics
- Collaborative analytics becomes core
- Self-service analytics extends to data prep
- User interface becoming more intuitive
- Data literacy becoming a fundamental skill

KEY FACTORS IMPACTING THE INDUSTRY



MAGIC QUAD - BI & ANALYTICS PLATFORMS














Competitive BI Landscape




"I would rank the top three BI software in this order: Tableau, Qlik and Microsoft." – VP of Technology Division at a Major Wall Street Firm

Modern BI

Traditional BI

BI Vendors											
Products & Services	<ul style="list-style-type: none"> Easy to use visualization software designed for regular business users Versatility in deployment options (cloud vs. on-premises) and use cases Diverse data source connectivity Very expensive 	<ul style="list-style-type: none"> The most competitive product offering to DATA Targeting more sophisticated users with the most advanced analytics Less intuitive visualization than DATA Complement to existing solutions rather than replacement 	<ul style="list-style-type: none"> Wide range of BI capabilities including specialty tools for data scientists and interactive dashboards for business users Advanced analytics including forecasting and decision trees Solutions for diverse industries Very expensive 	<ul style="list-style-type: none"> Drag-and-drop interactive dashboards similar to DATA Limited front-office analytics application Integrated into Salesforce security and collaboration Early stage of product development 	<ul style="list-style-type: none"> Cloud-based AWS QuickSight Lower-end analytics Meeting basic user needs at a fraction of DATA's costs Help gain traction with AWS users 	<ul style="list-style-type: none"> Spotfire: leading data discovery and visualization product Jaspersoft: embedded analytics in applications 	<ul style="list-style-type: none"> Fast transitioning to modern BI Cortana Analytics suite: Power BI, machine learning and cloud Strong business benefits for users Cloud-based delivery and lower cost Easy to use but limited advanced functionality Poor sales experience 	<ul style="list-style-type: none"> Legacy BI products Main advantage is existing ERP customer base No meaningful next-gen offering 	<ul style="list-style-type: none"> Legacy Cognos losing shares to modern BI vendors Strong software capability but limited customer reach given complex user interface Next-gen offering of Watson Analytics warrants monitoring 	<ul style="list-style-type: none"> Early BI vendor with legacy on-premise tools Enterprise-grade platform with strong governance and security features 	<ul style="list-style-type: none"> Vast array of BI tools including SaaS, complex IT department analytics, big data appliance Typically used for large-scale enterprise deployments Lacking unified product vision and advanced analytics Complexity of use
Brand Mindshare	<ul style="list-style-type: none"> Strong reputation among passionate users Developing enterprise level relationships 	<ul style="list-style-type: none"> Strong position in next-gen BI market Great salesforce Great global brand recognition Costly (though cheaper than DATA) 	<ul style="list-style-type: none"> Expensive Poor sales experience Difficult to implement and administer 	<ul style="list-style-type: none"> Very limited brand awareness 	<ul style="list-style-type: none"> Solid enterprise relationships through AWS platform 	<ul style="list-style-type: none"> Customers welcomed flexible pricing Concerned about long term product roadmap 	<ul style="list-style-type: none"> Strong existing enterprise relationships Cost efficient 	<ul style="list-style-type: none"> Perceived as legacy BI vendor No meaningful presence in modern BI 	<ul style="list-style-type: none"> Cognos sold in >130 IBM apps Perceived as legacy BI vendor 	<ul style="list-style-type: none"> Despite inroads in new BI, still perceived to be a legacy BI vendor 	<ul style="list-style-type: none"> Offers too many products Difficult to compete with more streamlined brands
Econ. of Scale	<ul style="list-style-type: none"> Developing scale High cost can be a barrier for rapid expansion 	<ul style="list-style-type: none"> Growing scale Thoma Bravo's take private of Qlik will drive greater operational efficiency 	<ul style="list-style-type: none"> Server-based analytics enable significant scalability 	<ul style="list-style-type: none"> Very limited scale 	<ul style="list-style-type: none"> Still an early product but can be leveraged via AWS to increase scale 	<ul style="list-style-type: none"> Moderate scale 	<ul style="list-style-type: none"> Potentially strong leverage via Microsoft's enterprise relationships 	<ul style="list-style-type: none"> Broader business-user adoption is limited 	<ul style="list-style-type: none"> Achieved scale in legacy BI applications such as record reporting centrally managed by IT departments 	<ul style="list-style-type: none"> Limited scale in new BI Potential to leverage legacy BI client base 	<ul style="list-style-type: none"> Suitable for large-scale enterprise deployments but lacking unified product offering
Annual Cost / Enterprise User	\$1,999	\$1,500 (min of 5 users)	>\$100,000	Higher than DATA (BI is packaged into cloud offerings)	\$216	Server prices range from 6 to 7 figures	\$120	Server prices range from 6 to 7 figures	Server prices range from 6 to 7 figures	Server prices range from 6 to 7 figures	Server prices range from 6 to 7 figures

Zoom In On the Top Three Providers

			
User Mindshare ¹	<ul style="list-style-type: none"> 146,173 views 7,762 followers 90 reviews 	<ul style="list-style-type: none"> 90,113 views 7,698 followers 76 reviews 	<ul style="list-style-type: none"> 79,120 views 7,330 followers 9 reviews
Top Industries of User Reviews ¹	<ul style="list-style-type: none"> Financial Services 14% Healthcare 11% University 10% Manufacturing 7% 	<ul style="list-style-type: none"> Financial Services 18% Manufacturing 8% Insurance 7% Communications 6% 	<ul style="list-style-type: none"> Energy/Utilities 38% Manufacturing 13% Financial Services 13% University 13%
Company Size of User Reviews ¹	<ul style="list-style-type: none"> SMEs 50% Large Enterprise 51% 	<ul style="list-style-type: none"> SMEs 64% Large Enterprise 36% 	<ul style="list-style-type: none"> SMEs 66% Large Enterprise 34%
Positive User Reviews	<ul style="list-style-type: none"> “Without doubt Tableau [...] set the pace for easy-to-use data visualization and exploration software. In practical terms this means business users can get to their data, typically without assistance from IT, and create graphs, charts and dashboards in a way that is most meaningful to them.” “Visualization attributes: Marks – Color, Size, Label, etc.. Easily Accessible and Intuitive” “Very good Geo/Mapping capabilities” “Adaptive sizing based on display resolution. [...] Something Qlikview does not do - you must develop for particular display size/dimensions.” “Tableau ease-of-use is almost legendary. [...] The platform is also very scalable and supports some very large implementations” 	<ul style="list-style-type: none"> “If needs are straightforward [...] then either [Tableau or Qlik] will satisfy needs. But a more prudent approach would assume that future needs are unknown, and that would definitely give more weighting to Qlik Sense.” [Qlik] “brings with it a mature environment for extension and developer support - absolutely crucial in a real-world business intelligence environment. ” “QlikView and QlikSense are powerful tools that require IT and BI expertise to take full advantage of. True BI utilization [...] requires deep knowledge of data utilization and visualization. Qlik can provide that, BUT at the cost of additional IT or BI expertise.” 	<ul style="list-style-type: none"> “user-friendly [and] very stable” “The ease of implementation and reliability of SQL Server Reporting Services far exceeded the solution originally implemented with [SAP] Crystal Report.” “It’s been stable for over eight years, and all the latest products/versions have backwards compatibility, or an upgrade facility. It has helped to fetch many projects, and to deliver them on time, as well as helping to resolve complex business challenges. The product has continual updates so we can stay on top of the market.” “a great level of customer service.” “not costly when compared with other competitor products”
Critical User Reviews	<ul style="list-style-type: none"> “Tableau is hobbled to some extent by its poor extensibility - an issue that should not be underestimated in significance.” “anyone can do a Google search or look on various forums to find that [Tableau] users are often frustrated by its lack of extensibility.” “Heavy data prep needed. Blending within the tool is clunky and causes performance hit.” 	<ul style="list-style-type: none"> “I was very underwhelmed by its charting ability- it feels like the defaults and the tutorial regard graphic representation as an afterthought.” “Their marketing department is heavy-handed[...]. This can turn companies off when they get too aggressive.” 	<ul style="list-style-type: none"> “Reporting or SharePoint needs a lot of learning so you can build reports” “The build in Report Builder for end users needs improvement.”

Source: IT Central Station, Butler Analytics
¹ IT Central Station user reviews

Investment Thesis

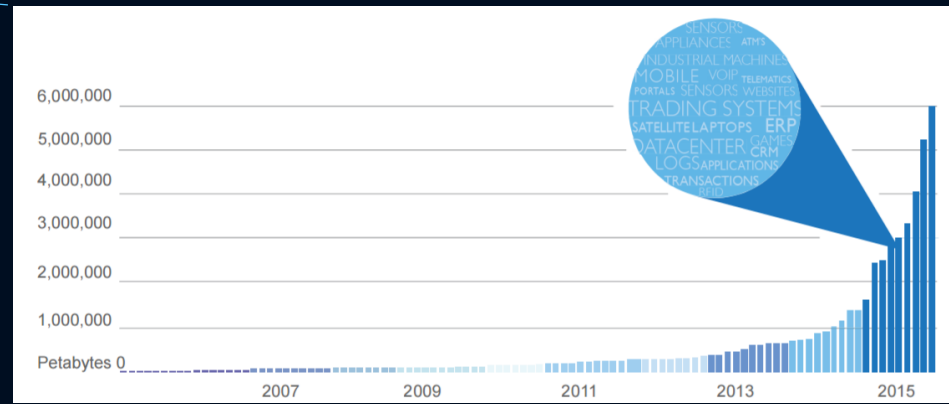
- 1 BIG DATA, BIG MARKET
- 2 TABLEAU BREAKING OUT AS THE MARKET LEADER
- 3 NEW MANAGEMENT TEAM TO INVENT TABLEAU'S FUTURE
- 4 NEW SALES STRATEGY TO FOCUS ON LARGE ENTERPRISES
- 5 TABLEAU TAPPING INTO THE MASSIVE GLOBAL BI MARKET

1 Advanced Data Visualization is Critical as Big Data Increasingly Drives Business Decisions

DRIVERS OF GROWTH

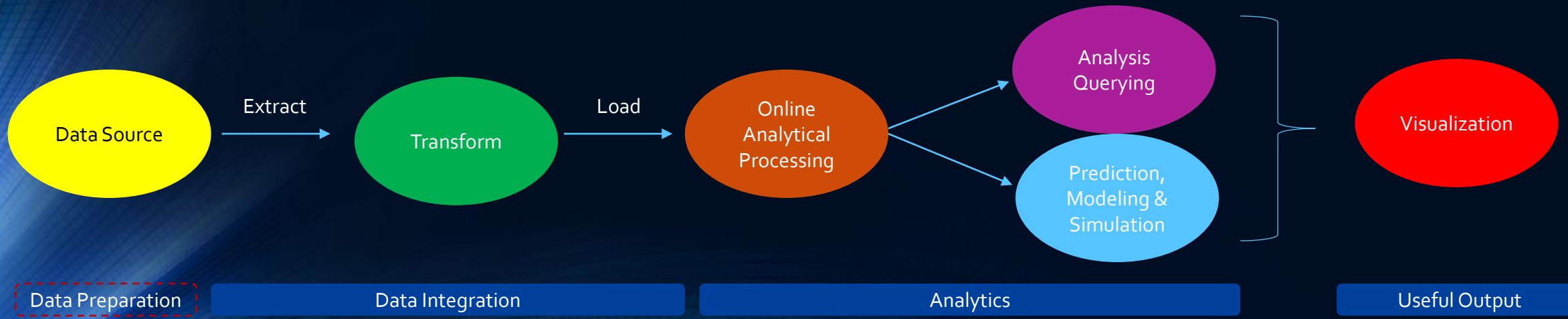
- Proliferation of data across all industries
- Modern BI as new normal
- Transition into cloud
- Ubiquity of analytics
- Collaborative analytics becomes core
- Self-service analytics extends to data prep
- User interface becoming more intuitive
- Data literacy becoming a fundamental skill

NEW DIGITAL DATA TOUCHED BY BUSINESSES



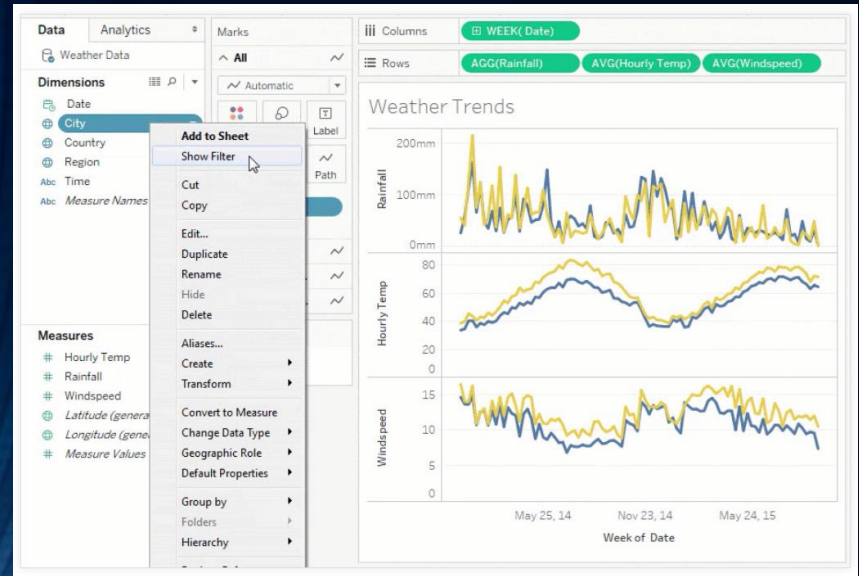
“Wall Street will hire more people like me who understand advanced data analytics and less MBAs. That’s just where the world is going.” – Data Specialist at a Major Investment Bank

USER FRIENDLY OUTPUT MAKES BIG DATA ANALYSIS USEFUL



2 The Category Creator and Breakout Leader in Modern Data Visualization with an Increasing Network Effect

POPULARIZING DRAG & DROP USER INTERFACE

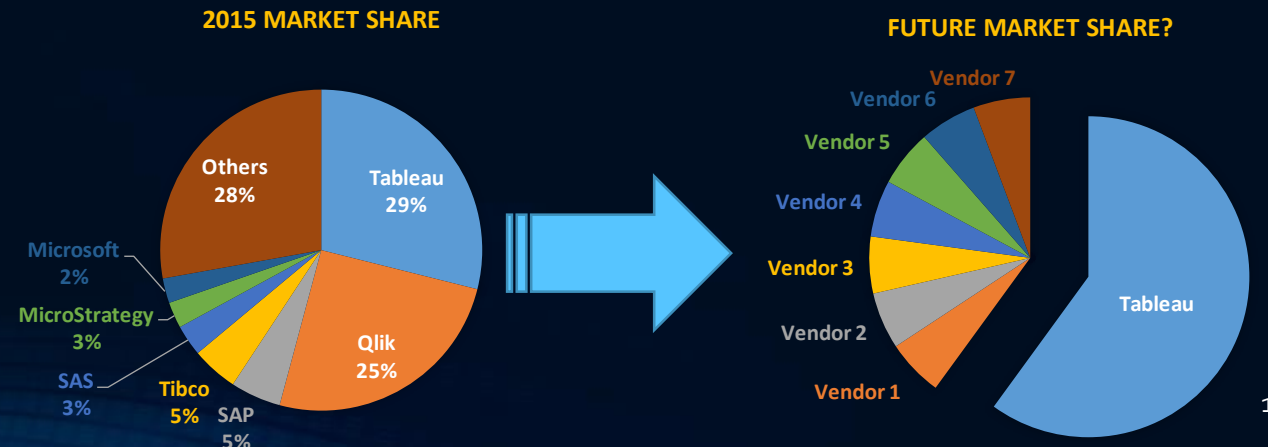


FUTURE PRODUCT VISION AT TABLEAU CONFERENCE 2016

- >13k data fanatics attended the conference
- New Data Engine
- New Data Preparation Product
- Tableau Server for Linux
- Next Leap in Analytics
- New Data Governance Capabilities
- New Collaboration Capabilities
- Machine Learning Smart Recommendations
- New Hybrid Data Connectivity for the Cloud

EMERGING LEADERSHIP IN MODERN BI

“Live editing, customization, intuitive user interface are the biggest differentiators for Tableau from its competitors. However, you have to invest upfront a bit of time learning how to use Tableau, which I understand can be a mental hurdle for many people. People like the familiarity of Excel.”
 – VP of Technology Division at a Major Financial Institution



Source: company website & earnings transcripts; market share data per Gartner

3 New Leadership to Invent Tableau's Future

Adam Selipsky as New CEO

PAST EXPERIENCE

- New President and CEO Adam Selipsky since summer 2016
- Selipsky led sales & marketing for AWS from 2005 to 2016, most recently as VP of Marketing, Sales and Support
- Helped grow AWS from a start-up into a multi-billion dollar business and establish it as the market leader in cloud computing
- Prior to AWS, he was an executive at RealNetworks, leading the video subscription and media player division
- Bachelor's and MBA from Harvard



TOP PRIORITIES AT TABLEAU

- 1 Executing "Act 3" of Tableau's ambition: Selipsky's experience of building a new business into a multibillion operation can help Tableau grow into a household software company
- 2 Spearheading "wide-scale deployments in the world's largest enterprises"
- 3 "10xing" Tableau's differentiated hybrid product offering (on premise / cloud)
 - ✓ Key next step is to hire a new Worldwide Head of Sales

"Adam Selipsky has been developing a sales strategy to compete with MSFT's global network of enterprise software sellers/re-sellers/system integrators/consulting partners/government relations for a decade at AWS." – **Global Growth Strategist at a Major Cloud Company**

Product Leadership Change

CHIEF DEVELOPMENT OFFICER

- Andrew Beers replaced cofounder Chris Stolte to lead product development
- Joined Tableau as one of the first developers

CHIEF PRODUCT OFFICER

- Francois Ajenstat, one of the company's long-time product leaders, was elevated to a new position as Chief Product Officer, reporting to Beers

4 Tableau's Sales Strategy Is Shifting Focus on Enterprise

OLD WAY: LAND & EXPAND



NEW WAY: ENTERPRISE AGREEMENTS



Qlik

Tableau will compete head to head with Qlik, which also has an impressive salesforce. My own experience in talking with two Qlik sales people confirmed this.

SELECTED TABLEAU CLIENTS

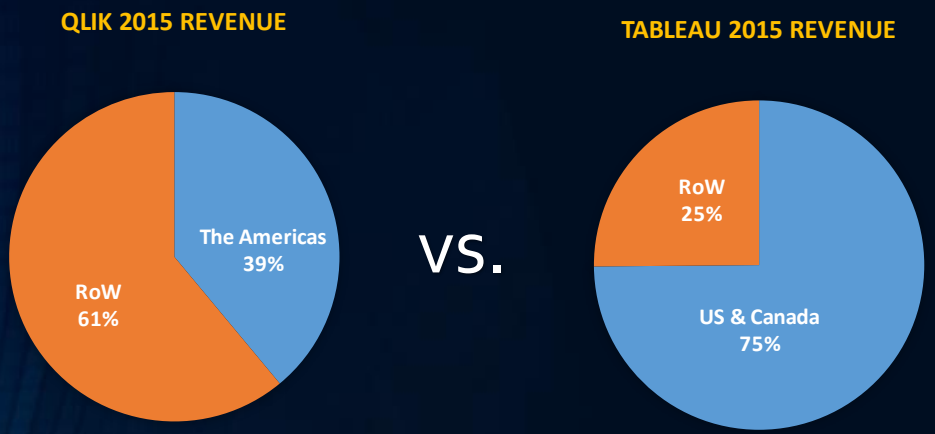
Financial	Healthcare	Government	Retail	Other
Bank of America	JOHNS HOPKINS MEDICINE	U.S. DEPARTMENT OF JUSTICE	amazon.com	accenture
Goldman Sachs	MCKESSON	FEDERAL AVIATION ADMINISTRATION	Ferrari	Audi
BARCLAYS	MERCK	NATIONAL SECURITY AGENCY	LOUIS VUITTON	CISCO
citi	Pfizer	U.S. AIR FORCE	macy's	Coca-Cola
FIFTH THIRD BANK	PROVIDENCE Health & Services	U.S. ARMY	NIKE	DOW JONES
TD Bank	Quest Diagnostics	IRS	Walmart	Google
THE WORLD BANK	sanofi aventis		zulily	Kimberly-Clark
WELLS FARGO				

"We want to get on people's calendar, instead of waiting for clients to schedule training sessions. We also want to bring Tableau people on-site so we can physically reach out to more potential users within an organization. We want to understand how we can reach the most people."

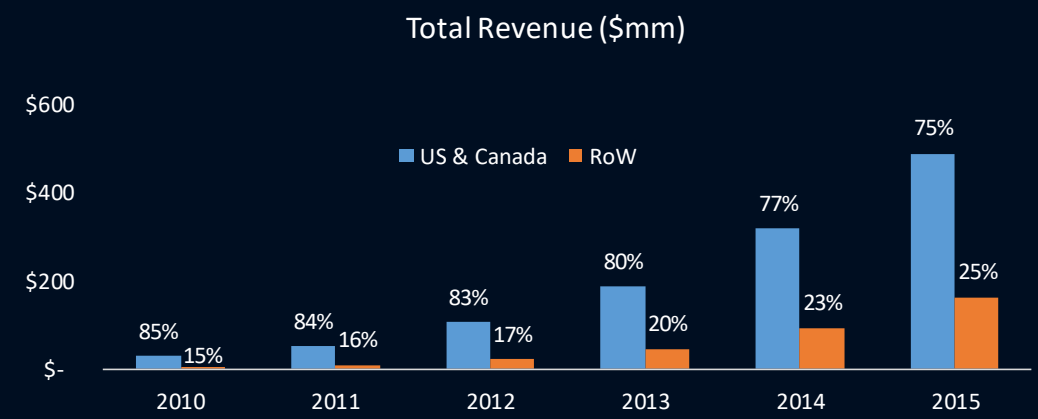
- Tableau Enterprise Sales Manager

5 Tableau is Rapidly Globalizing

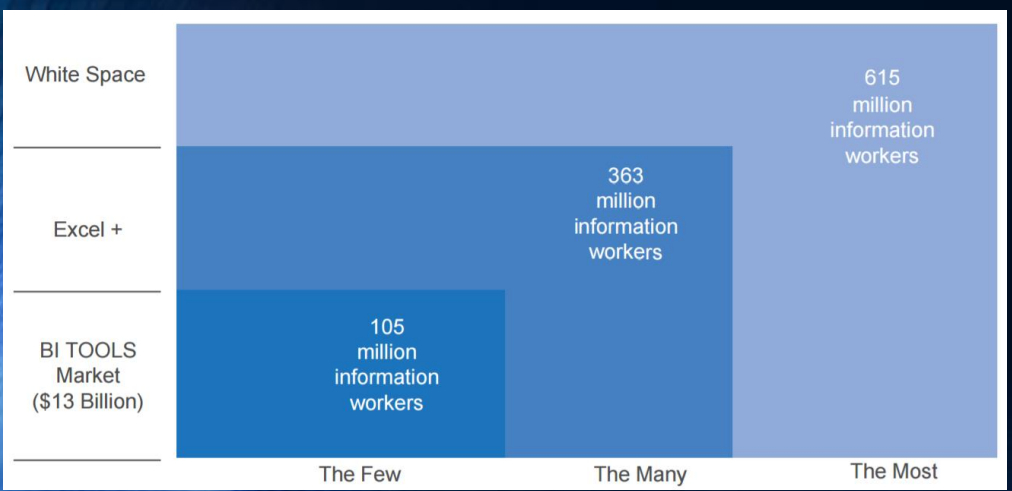
HISTORICALLY US-FOCUSED



BUT TABLEAU IS EXPANDING OVERSEAS



GLOBAL INFORMATION WORKERS



TABLEAU'S CHINA OFFICE

- Opened a Shanghai office in 2015
- "With 1.3 billion people, a quickly expanding urban economy, and exponential rates of Internet and smartphone penetration, China generates an immense amount of data annually. Tableau can help bring that data to life with rapid-fire insights." - APAC Vice President of Tableau
- China Eastern Airlines uses Tableau to analyze market research and optimize its "Origin-to-Destination" routes
 - 500 people now use Tableau
 - Reported 2% increase in sales (US\$200mm)

Source: company filings and IR presentation

5 China Case Study: China Eastern Airline

- A major Chinese airline operating international, domestic and regional routes
- China's 2nd-largest carrier by passengers and the world's 3rd-biggest carrier by market value
- NYSE: CEA
- Market cap: \$11bn

PAIN POINTS

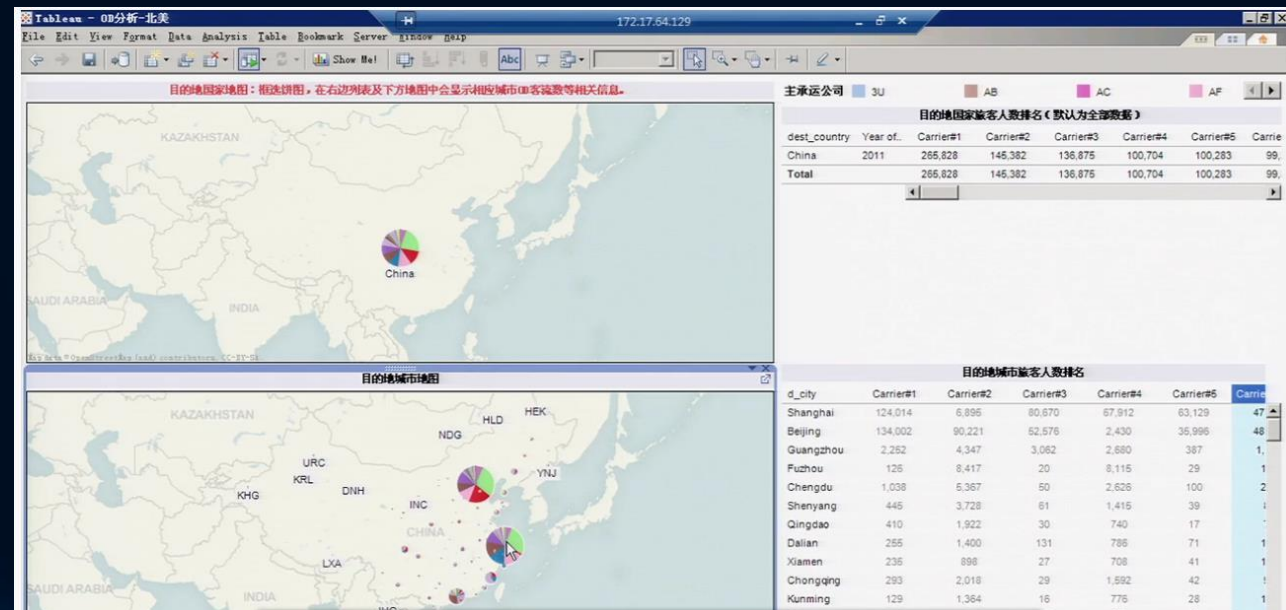
- Previously used Oracle and IE browser to show data, which was slow and difficult to use
- "Searched the world of tools"

"Using Tableau, last year we owned a 2 percent increase in revenue, that's \$200 million U.S. dollars. If you want to own the money in the aviation or transportation industry, you're using Tableau."

- James Pu, Senior Executive,
Networking & Revenue

HOW DID TABLEAU HELP?

- Developed nine dashboards for 500 people to analyze marketing, competition, other carriers, and flights-to-revenues
- Resulted in 2 % increase in annual revenue (\$200mm)
- Reports that use to take 2-4 weeks are now completed in Tableau in 30 minutes or less



Valuation

Standalone Financial Profile

	Historical			FYE Dec						15-20 CAGR
	2013	2014	2015	Projected						
				2016	2017	2018	2019	2020	2021	
Total Revenue	\$ 232	\$ 413	\$ 654	\$ 809	\$ 1,109	\$ 1,504	\$ 2,044	\$ 2,534	\$ 3,146	31%
<i>Growth</i>	82%	78%	58%	24%	37%	36%	36%	24%	24%	
Total License Revenue	\$ 160	\$ 280	\$ 424	\$ 466	\$ 629	\$ 881	\$ 1,233	\$ 1,480	\$ 1,775	28%
<i>Growth</i>	78%	75%	51%	10%	35%	40%	40%	20%	20%	1
Maintenance and Service Revenue	\$ 73	\$ 133	\$ 230	\$ 343	\$ 480	\$ 624	\$ 811	\$ 1,054	\$ 1,370	36%
<i>Growth</i>	92%	83%	73%	49%	40%	30%	30%	30%	30%	2
Implied DATA Market Share				3%	4%	5%	6%	7%	8%	3
Gross Profit (Ex. SBC)	\$ 214	\$ 378	\$ 587	\$ 723	\$ 979	\$ 1,322	\$ 1,802	\$ 2,225	\$ 2,751	31%
<i>Margin</i>	92.3%	91.6%	89.8%	89.4%	88.3%	87.8%	88.2%	87.8%	87.5%	4
Operating Income (Ex. SBC)	\$ 18	\$ 53	\$ 67	\$ 31	\$ (2)	\$ 70	\$ 102	\$ 117	\$ 134	12%
<i>Margin</i>	7.8%	12.9%	10.3%	3.8%	-0.2%	4.6%	5.0%	4.6%	4.3%	4
Adj. EBITDA	\$ 25	\$ 67	\$ 91	\$ 65	\$ 63	\$ 146	\$ 204	\$ 241	\$ 286	22%
<i>Margin</i>	10.8%	16.2%	13.9%	8.1%	5.7%	9.7%	10.0%	9.5%	9.1%	
<i>Growth</i>		167%	36%	-28%	-4%	132%	39%	19%	18%	

Comparison with Consensus

Consensus Revenue	\$ 806	\$ 872	\$ 967	\$ 1,457	\$ 1,694
<i>Growth</i>	23%	8%	11%	51%	16%
Paul Chen's Projected Revenue	\$ 809	\$ 1,109	\$ 1,504	\$ 2,044	\$ 2,534
<i>Growth</i>	24%	37%	36%	36%	24%
Delta - %	0%	27%	56%	40%	50%
Consensus EBITDA	\$ 64.8	\$ 38.3	\$ 82.6		
Paul Chen's Projected EBITDA	\$ 65.3	\$ 62.9	\$ 145.9		
Delta - %	1%	64%	77%		

ASSUMPTIONS & COMMENTS

- DATA will take shares from competitors by signing more licensing deals with large enterprises
 - The CEO has outlined efforts to push aggressively into enterprise sales
- As licensing revenue growth accelerates, service revenue will increase faster than consensus projections too
- Bottoms up TAM build¹: based on Wall Street research, there are ~865mm knowledge workers globally. 17% of them use BI tools, implying ~150mm potential Tableau customers
 - Assume \$200 run-rate ARPU (blend of free and premium Tableau products)
 - The # of modern BI users grows 5% / year
- Used Wall Street estimated expenses as % of revenue
 - 2017 Consensus OPEX spikes in light of DATA's strategy to push sales aggressively
 - Flatlining cost structure beyond 2019 because I expect Tableau to grow for several years before slowing down
- My variant perception from Consensus: DATA will have higher topline growth as it takes shares from competitors with superior products, excellent salesforce and an increasing network effect; overtime, DATA will become the industry standard for advanced visualization like how Excel is used today by millions of business users

One Tableau enterprise salesperson reached out to me via email after observing that I registered on Tableau's website. She immediately scheduled a call with me to discuss strategies to increase adoption of Tableau among my coworkers. She was very professional and attentive to my needs.

¹ This market share calculation is different from the top down estimate on page 13

Tableau Stock Price Since IPO

After failing to meet Wall Street's euphoric growth expectations in the short term, Tableau's stock fell out of favor in February 2016. Since then, many analysts also started to express concerns over Tableau's competitiveness, believing that the BI market will become commoditized. The stock is trading near all time low as of Dec-16-2016.



Summary Standalone Valuation

Current Price: \$44.02

Historical
Trading (EV
/ Sales)

\$73 \$198

- Based on 5.0-15.0x EV / 1-yr Forward Sales
- DATA's EV / 1-yr Forward Sales has been volatile since IPO
 - Median EV / 1-yr Forward Sales is ~10x; max is ~25x; min is 2.5x
- As DATA's product differentiation and proactive sales strategy separate itself from the competitors and create a network effect, the market will again appreciate DATA's growth, and assign a higher multiple appropriate for a high growth software company

Public
Comps (EV
/ Sales)

\$85 \$104

- Based on 6.0-7.5x EV / 1-yr Forward Sales. I picked the range based on ServiceNow, Workday and Splunk given their similar 16-18 sales CAGR of 27/28%
- Peers with ~30% revenue growth are trading at much higher levels than DATA (median of 6.4x)
- Overall peer median EV / Sales is 5.6x

DCF
(PGR
Method)

\$91 \$118

- WACC of 11% based on Wall Street research
- Although I am projecting a much faster revenue growth in the next few years, my estimated PGR converges close to the consensus view of 2% in the outer years
- EBITDA margins will improve by 2% / year starting in 2022 as DATA transitions from a growth-oriented software company to focus on turning its leading market position into earnings

Cash Per
Share

\$10

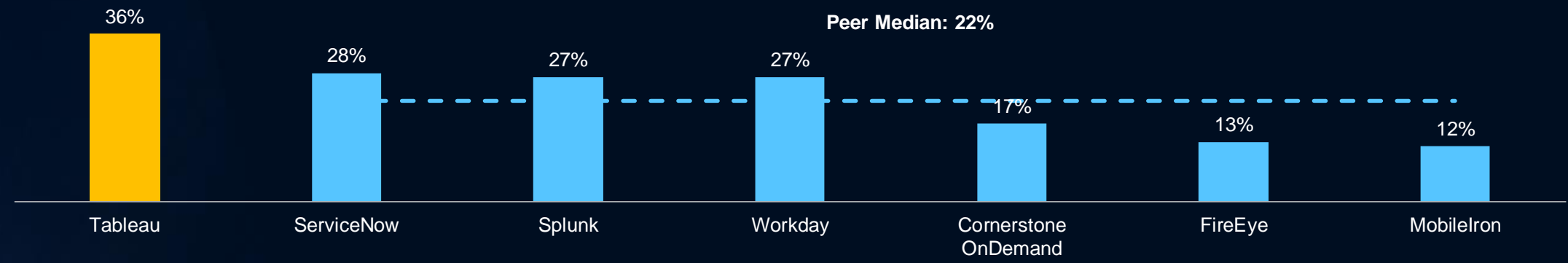
- DATA has ~\$900mm in cash currently (\$10 cash / share or 22% of current stock price) and **NO** debt
- I estimate that DATA will generate >\$1.5bn in FCF in the next 5 years
- DATA's strong cash position provides equity investors with significant margin of safety to weather through tough times

\$- \$50 \$100 \$150 \$200 \$250

- Based on my valuation analysis, Tableau's **value** should be \$80-100, representing a 82 – 127% premium to current price
- In two years, even assume that the EV / Sales stays at the current depressed level (2.7x), I expect Tableau's stock to increase to \$68, or 54% premium to today's price
- In a downside scenario, the stock will be \$38 in two years, a decrease of 15% from the current price (assume current EV / Sales)

Comparable Company Analysis – Operational Benchmarking

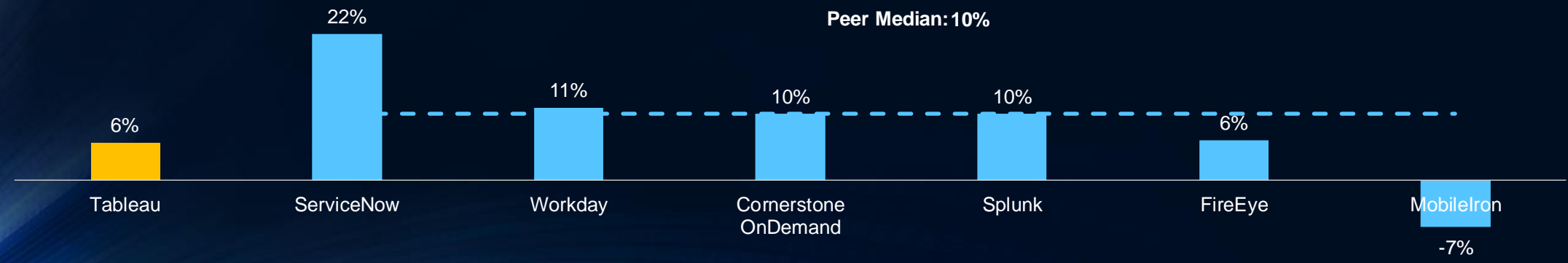
2016-2018 REVENUE CAGR



Olik's last Consensus estimates before delisting:

- 16-18 Rev CAGR of 15%
- 17 EBITDA Margin of 13%

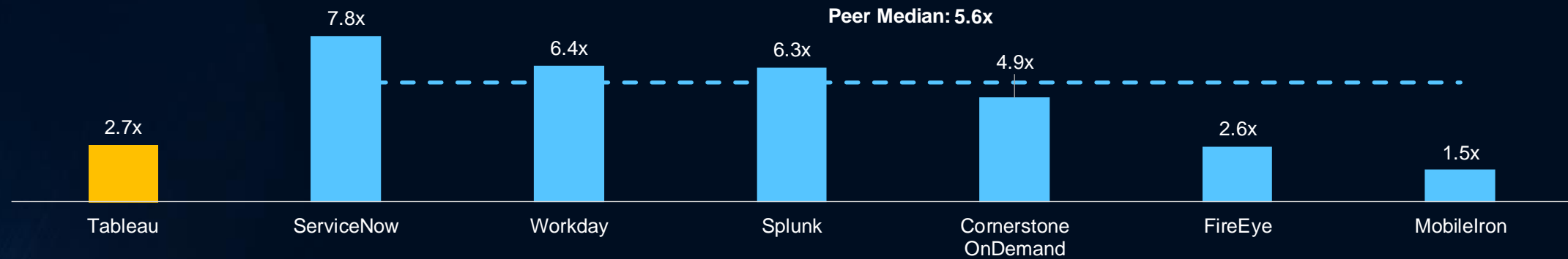
2017 EBITDA MARGIN



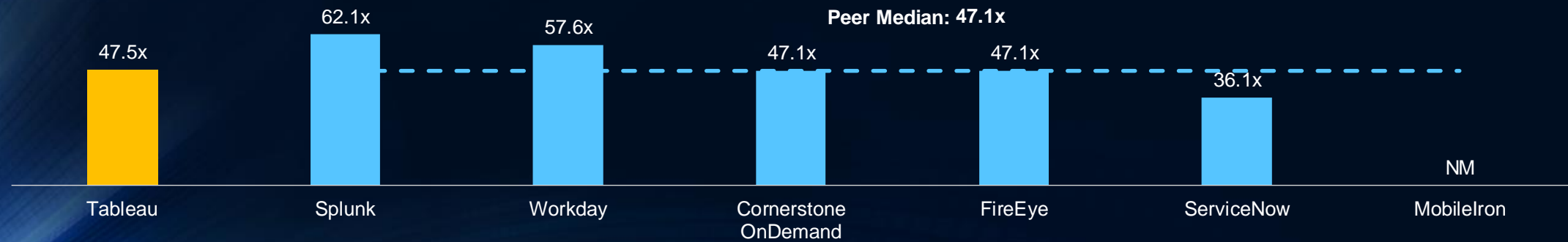
Source: peers per IBES

Comparable Company Analysis – Valuation Benchmarking

EV / 2017 REVENUE



EV / 2017 EBITDA



Note: market data as of 2016-Dec-16

DCF

(\$mm except per share)

	FYE ended Dec													Terminal Year	17-27 CAGR
	2016	2017	2018	2019	2020	Projected					2026	2027			
Total Revenue	\$ 809	\$ 1,109	\$ 1,504	\$ 2,044	\$ 2,534	\$ 3,146	\$ 3,796	\$ 4,447	\$ 5,054	\$ 5,568	\$ 5,939	\$ 6,127	\$ 6,127	19%	
<i>Growth</i>		37%	36%	36%	24%	24%	21%	17%	14%	10%	7%	3%			
Adj. EBITDA	\$ 63	\$ 146	\$ 204	\$ 241	\$ 286	\$ 421	\$ 582	\$ 762	\$ 951	\$ 1,133	\$ 1,292	\$ 1,292	\$ 1,292	35%	
<i>Margin</i>	5.7%	9.7%	10.0%	9.5%	9.1%	11.1%	13.1%	15.1%	17.1%	19.1%	21.1%	21.1%	21.1%		
EBIT	\$ (2)	\$ 70	\$ 102	\$ 117	\$ 134	\$ 240	\$ 374	\$ 530	\$ 699	\$ 869	\$ 1,023	\$ 1,076	\$ 1,076	NM	
<i>Margin</i>	-0.2%	4.6%	5.0%	4.6%	4.3%	6.3%	8.4%	10.5%	12.6%	14.6%	16.7%	17.6%	17.6%		
<i>Cash Tax Rate</i>	0%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%		
After Tax Profit	\$ (2)	\$ 49	\$ 71	\$ 82	\$ 94	\$ 168	\$ 262	\$ 371	\$ 489	\$ 608	\$ 716	\$ 753	\$ 753	NM	
(+) D&A	\$ 65	\$ 76	\$ 102	\$ 124	\$ 152	\$ 180	\$ 208	\$ 233	\$ 252	\$ 264	\$ 268	\$ 216	\$ 216	15%	
(-) Capex	\$ (53)	\$ (63)	\$ (84)	\$ (103)	\$ (125)	\$ (148)	\$ (170)	\$ (190)	\$ (205)	\$ (214)	\$ (216)	\$ (216)	\$ (216)	15%	
(+) Deferred Revenue	\$ 160	\$ 227	\$ 288	\$ 332	\$ 396	\$ 459	\$ 516	\$ 561	\$ 590	\$ 600	\$ 588	\$ 588	\$ 588	14%	
(+/-) Change in Other Net Working Capital	\$ (32)	\$ (29)	\$ (39)	\$ (48)	\$ (60)	\$ (72)	\$ (84)	\$ (96)	\$ (106)	\$ (113)	\$ (116)	\$ (116)	\$ (116)	14%	
Unlevered Free Cash Flow	\$ 137	\$ 260	\$ 338	\$ 387	\$ 457	\$ 588	\$ 731	\$ 879	\$ 1,021	\$ 1,146	\$ 1,240	\$ 1,225	\$ 1,225	25%	
<i>Growth</i>			90%	30%	15%	18%	29%	24%	20%	16%	12%	8%			
<i>Margin</i>		12%	17.3%	16.5%	15.3%	14.5%	15.5%	16.4%	17.4%	18.3%	19.3%	20.2%	20.0%		
PV of UFCF	\$ 130	\$ 223	\$ 260	\$ 269	\$ 286	\$ 331	\$ 371	\$ 402	\$ 421	\$ 425	\$ 415	\$ 415	\$ 415	12%	
Sum of PV of UFCF	\$ 3,532														
Terminal Value	\$ 13,879														
PV of Terminal Value	\$ 4,639														
<i>% of EV</i>	57%														
Implied Terminal EBITDA Multiple	10.7x														
Sum of PV of UFCF	\$ 3,532														
Implied EV	\$ 8,171														
Implied Price / Share	\$ 103														
Premium / (Discount) to Current Price	133%														
Current Price	\$ 44.02														






Sensitivity Table

		Implied Price / Share				
		PGR				
		0.0%	1.0%	2.0%	3.0%	4.0%
WACC	10.0%	\$ 103	\$ 110	\$ 117	\$ 127	\$ 141
	10.5%	\$ 98	\$ 103	\$ 110	\$ 118	\$ 129
	11.0%	\$ 92	\$ 97	\$ 103	\$ 110	\$ 119
	11.5%	\$ 87	\$ 91	\$ 96	\$ 102	\$ 110
	12.0%	\$ 83	\$ 87	\$ 91	\$ 96	\$ 103

- Mid-point WACC of 11%; PGR of 2%
- Mid-year convention for discount factor

Deal Structuring Alternatives

Private Placement in Tableau

	Commercial Arrangement	Joint Venture	Common Equity	Convertible Debt	Convertible Preferred
Description	<ul style="list-style-type: none"> Arms length agreement between buyer and DATA to roll out business partnerships in China 	<ul style="list-style-type: none"> Strategic relationship that allows buyer and DATA to share resources Revenue / profit sharing JV agreement in China 	<ul style="list-style-type: none"> DATA issues common equity at a discount to stock price Immediately dilutive to current equity holders 	<ul style="list-style-type: none"> Senior or subordinated debt of the issuer that is convertible into common stock (or cash + common) 3-10 year maturity Generally senior or subordinated unsecured Conversion price at a premium to current market Tax deductibility to issuer 	<ul style="list-style-type: none"> Company issues preferred stock that is convertible into common stock Conversion price at a premium to current market Senior in capital structure relative to common equity Not tax deductible to issuer
Benefits	<ul style="list-style-type: none"> ✓ Simple ✓ Low risk 	<ul style="list-style-type: none"> ✓ Sharing of technical know how ✓ Leveraging buyer's business relationships in China ✓ Risk sharing 	<ul style="list-style-type: none"> ✓ Simplicity ✓ Highest return if share price outperforms over life of investment 	<ul style="list-style-type: none"> ✓ More senior than equity ✓ Potential covenant restrictions with existing debt facilities ✓ Priority of claim on the assets of the Company and ability to force bankruptcy 	<ul style="list-style-type: none"> ✓ Increases yield above common stock dividend ✓ Greater ability to potentially achieve equity credit for rating agency purposes, if structured appropriately
Considerations	<ul style="list-style-type: none"> ✗ Limited integration ✗ Limited strategic collaboration 	<ul style="list-style-type: none"> ✗ Limited integration ✗ Miscommunication ✗ Concern over IP protection ✗ Imbalance in what each partner brings 	<ul style="list-style-type: none"> ✗ Less senior than convertible debt or convertible preferred in bankruptcy / default scenario ✗ No ongoing yield in excess of common stock dividend 	<ul style="list-style-type: none"> ✗ Coupon below that of equivalent straight debt rate ✗ Conversion price at a premium to current market (investor does not earn return on full equity upside) 	<ul style="list-style-type: none"> ✗ Less senior than convertible debt in bankruptcy / default scenario ✗ Conversion price at a premium to current market (investor does not earn return on full equity upside)
Precedent Deals	 (Jun-16)	 \$250mm (Sep-12)	 \$103mm (Nov-16)	 \$500mm (Feb-16)	 \$1bn (Aug-15)

Investment Concerns

- Increasing competition drives down sector profitability for all participants, including DATA, making data analytics a commodity industry
 - DATA's technology might be copied by a competitor
- Qlik is the most fierce competitor:
 - Qlik is taken private by Thoma Bravo in May 2016, which has empowered Qlik to focus on product development and sales
 - Has great products just like DATA (easy to use, intuitive, great visuals, versatility and speed)
 - Qlik is cheaper than DATA
 - All these being said, Qlik is highly levered after the LBO by Thoma Bravo
- Companies with existing enterprise solutions can more easily cross sell products (i.e. MSFT). Both Microsoft and Amazon could disrupt DATA and Qlik
 - Cheaper
 - Cloud-oriented
 - MSFT Power BI integrates well with MSFT Office
- Since BI analytics spending is discretionary, DATA has little downside protection in a market downturn
- DATA has had GAAP losses in recent quarters due to faster increase on SG&A spending
- Equity ownership dilution due to funding needs
- DATA's inability to protect IP in China or in other markets globally
- Expensive sector valuation of high growth software companies
- Perceived risk with high stock price volatility (although for long term investors, I don't think short term volatility is a risk, but an opportunity to buy)
- DATA could be in a sale process again after being rumored to be on sale in 2016

Additional Due Diligence Questions / Steps

- Interview with more users of competitors products. I only talked with users from a firm that has decided to go with Tableau from senior leadership
- What are few truths in BI and big data sectors that Tableau people believe in which few people agree on?
- How can DATA maintain its significant price premium to Qlik and Microsoft in the long run?
- How will DATA sustain its product differentiation against competition?
- How proprietary is DATA's technology? Why can't competitors copy it?
- Who are DATA's best competitors?
 - When DATA loses to competitors, why? When it wins, why?
- How effective will DATA's enterprise sales strategy be?
- What is DATA's ambition in China?
- Who can DATA target as customers in China?
- What is DATA's closest competitor in China?
- What is the biggest long term challenge DATA faces?
- How good is customer support for SMEs?
- What is DATA's long term recruiting strategy? How will DATA be able to attract great engineers to innovate?
- How will a major financial crisis like 2008 affect Tableau's business?
- How does Tableau maintain its entrepreneurial culture as it gets bigger?