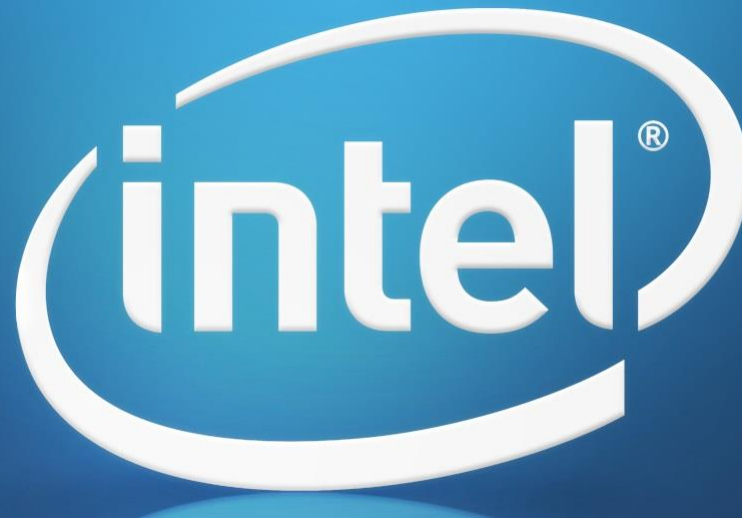


# Intel Corporation

[NASDAQ: INTC]



**Michael Wong**

Queen's School of Business

June 27, 2016

# Company Overview I



## Company Description

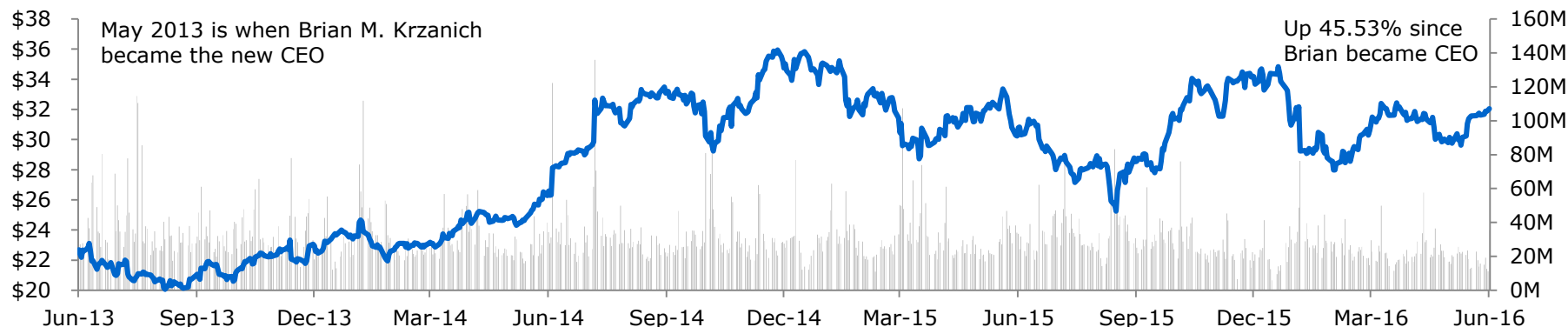
- Leader of the semiconductor industry - designing, manufacturing and selling integrated digital technology platforms worldwide
- **Client Computing Group (CCG)** – Intel’s PC and Mobile and Communications group, providing platforms that incorporate various components and technologies for notebooks, desktops, 2 in 1 systems, and other related devices
- **Data Center Group (DCG)** – Intel’s operating segment that offers products for all server, network, and storage platforms. This includes enterprise, cloud and communication infrastructures
- **Internet-of-Things (IoT)** – Intel’s highest growth segment, focused on driving innovation to smart devices for a broad range of market segments
- **Software and services (SSG)** – Software products that deliver solutions to secure computers, mobile devices, and networks
- **All Other** – Intel’s New Devices and Non-Volatile Memory Solutions Group, offers NAND flash memory products primarily used in solid-state drives

## Financial Overview

Market Data (in USD millions)

Share Price (06/24)	\$31.55
Shares Outstanding	4,722
Market Capitalization	151,293
Cash	15,287
Debt	25,604
Enterprise Value	161,610
3-Year ROIC	12.3%
EV/EBITDA	6.68x
P/E	13.5x
Dividend Yield	3.30%

## Price vs. Volume



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## Brian M. Krzanich – CEO (2013 - Present)



- Joined Intel in 1982 (30+ years with Intel)
- Mission to transform Intel from a PC company to a company that powers the cloud and billions of smart, connected computing devices
- Drove a broad transformation of Intel’s factories and supply chain, improving factory velocity by more than 60% and doubled customer responsiveness
- Involved in displaying Intel’s innovation such as the CES and active in management calls for shareholders

## Stacy J. Smith – CFO (2012 – Present)



- Joined Intel in 1988 (25+ years with Intel)
- Promoted to become the head of sales, manufacturing and operations
- Prior experience – former VP of Intel’s sales and market as well as GM of operations of EMEA

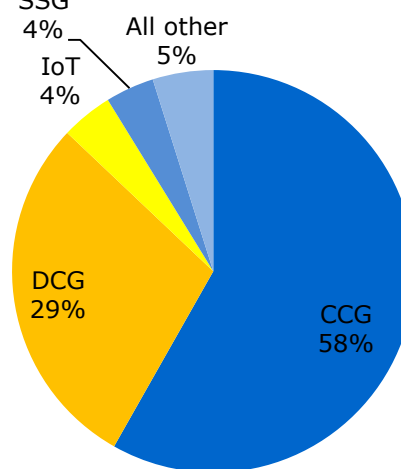
## Dr. Venkata Renduchintala - President of IoT (2015 – Present)



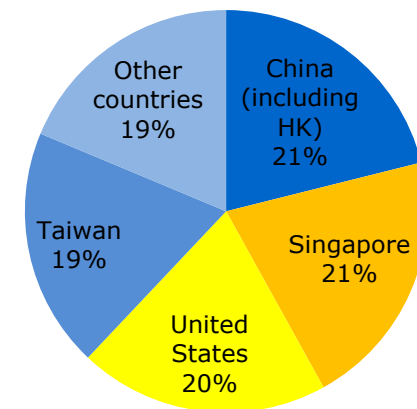
- Served as co-president of Qualcomm CDMA Technologies, its main chip unit for 3 years
- Expertise in System on Chip (SoC), mobile and IoT

## Revenue and Geographic Segmentation

**% of Revenue**



**Geographic Segmentation**



## Strong Roadmap Execution

- Reigning leader in the semiconductor industry through breaking records with product innovation
- Management’s ability to execute strategic shifts – company transformation
- Since Mr. Krzanich’s appointment of CEO, CCG represented 66% of total revenue (\$53.3b) in 2013 which has been reduced to 58% while total revenues increased to \$55.3b in 2015
- Growth driven for DCG at a CAGR of 9.5% and IoT at a CAGR of 8.5% from 2013 to 2015
- Plentiful acquisitions fuelling innovation to DCG and IoT

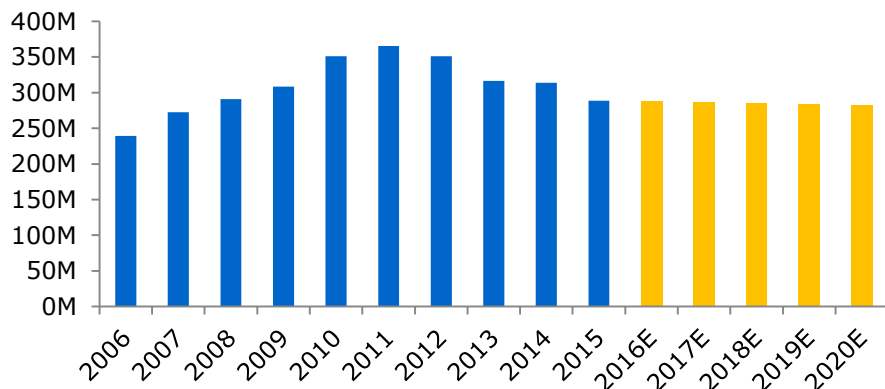
## PC Industry - Decline

- 1Q16 Global PC shipments have totalled 64.8 million, the lowest level since 2007 (9.6% decline from 1Q15)
- Major factors of decline are longer replacement cycles and mobile cannibalization
- Headwinds such as the strong dollar and depressed commodity prices are also factors to the decline

## PC Industry – Forecast

- IDC forecasts PC shipments to decline at a 0.4% CAGR from 2016-2020
- Commercial and consumer adoption of Windows 10 coupled with necessary replacement of systems will help the PC decline level out
- 4-year annual decline, forecasted to level out – decline will have minimal impact towards Intel’s CCG revenues

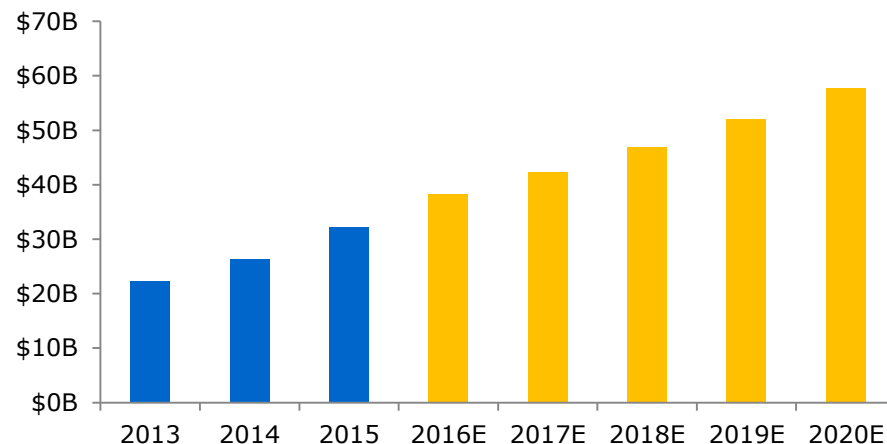
**Global PC Shipments**



## DCG Industry – Immense Growth

- Global IT Spending on Data Centers totaled \$171B in 2015 and is projected to grow to \$185B by 2020
- Key area of growth lies within the Cloud IT Infrastructure, where spending has grown 21.9% from 2014 to 2015 totalling \$29B
- Cloud IT Infrastructure projected to grow at a 12.5% 5-year CAGR to \$57.8B in 2020
- Strong shift from Traditional IT Infrastructure to Cloud
- Data processing requirements are increasing exponentially – drives the need for faster, better servers
- Growth of IoT results creates demand for data centers to connect smart devices

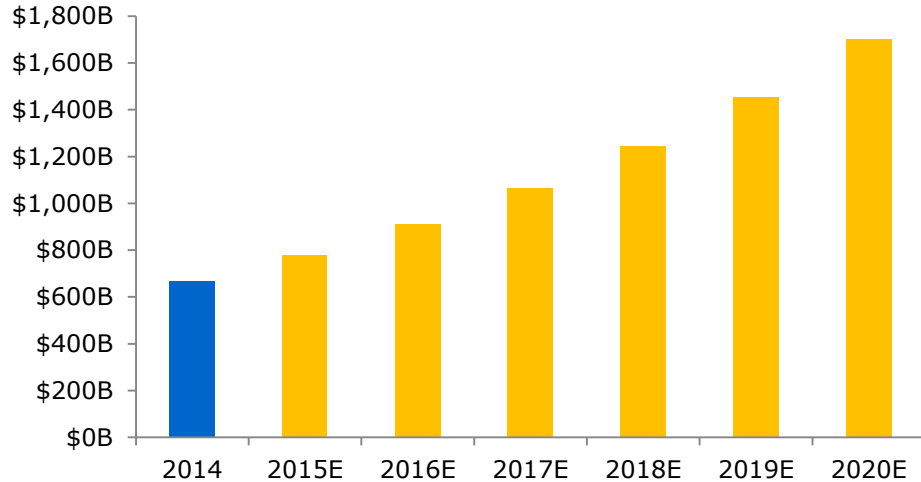
**Global Cloud IT Infrastructure Spending (USD)**



## IoT Industry – Exponential Growth

- The worldwide Internet of Things market will grow from \$655.8B in 2014 to \$1.7T in 2020 – CAGR of 16.9%
- IT services, connectivity, and devices will make up the majority of the market (account for over two-thirds)
- Devices (modules/sensors) alone will represent 31.8% of the total

### Global IoT Spending (USD)



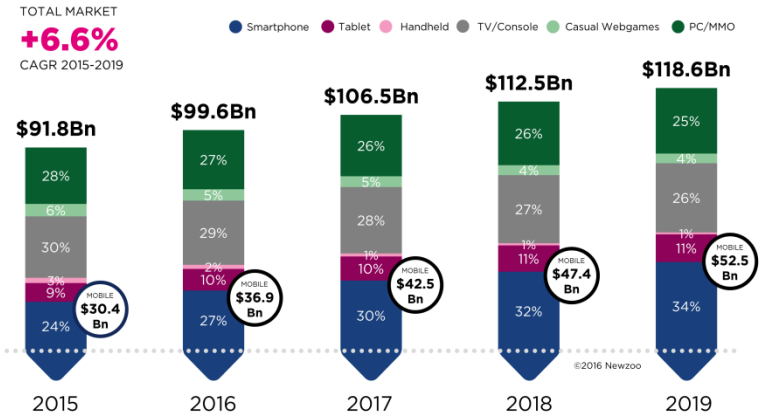
## Gaming and Virtual Reality – High Growth

- Global gaming market in 2015 totaled \$91.8B, forecasted to reach \$118.6B in 2019 – CAGR of 6.6%
- VR revenue will be absorbed into PC, TV/console and mobile
- Rising interest in gaming creates demand for semiconductors to produce better products to meet higher specifications (to handle higher resolution videos/games, video editing, etc.)



### 2015-2019 GLOBAL GAMES MARKET

FORECAST PER SEGMENT TOWARD 2019



# Investment Thesis I – Market Leadership



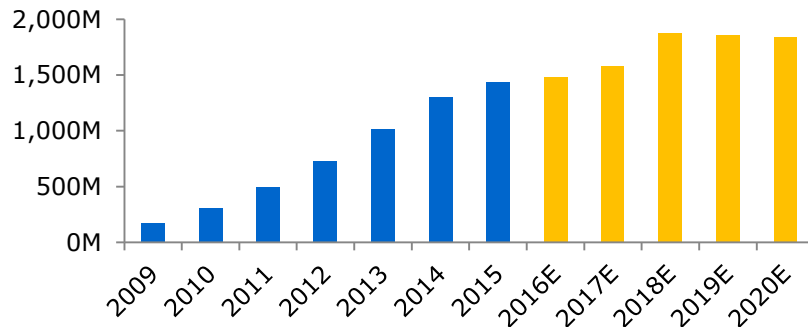
## Despite declines in the PC industry, Intel has remained resilient

- Market leader based on semiconductor revenues for 24 consecutive years (15.5% market share)
- Brian Krzanich who became CEO in 2013, has displayed his progress of transforming Intel from a PC company to one that powers smart devices with decreasing reliance on CCG and driving growth in other segments, while increasing total revenue
- Launch of 10-core chips (May 31, 2016) designed specifically for gaming and VR – milestone reached to realize growth in these industries, benefitting

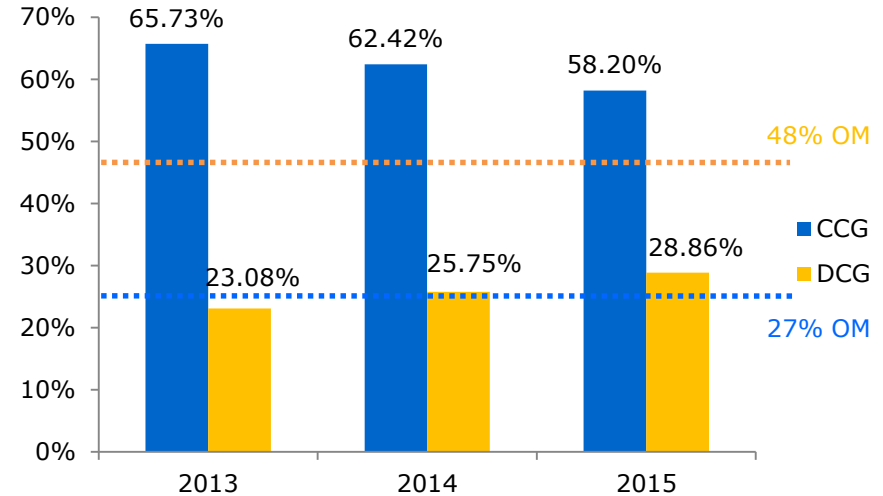
## Secured Deal with Apple

- On June 10, Intel secured a deal to provide Apple modem chips for the next iPhone (sold 231 million units in fiscal 2015)
- Foothold obtained in the smartphone market that is expected to grow to 1.84B units in 2020 – opportunity to gain significant market share in the smartphone market

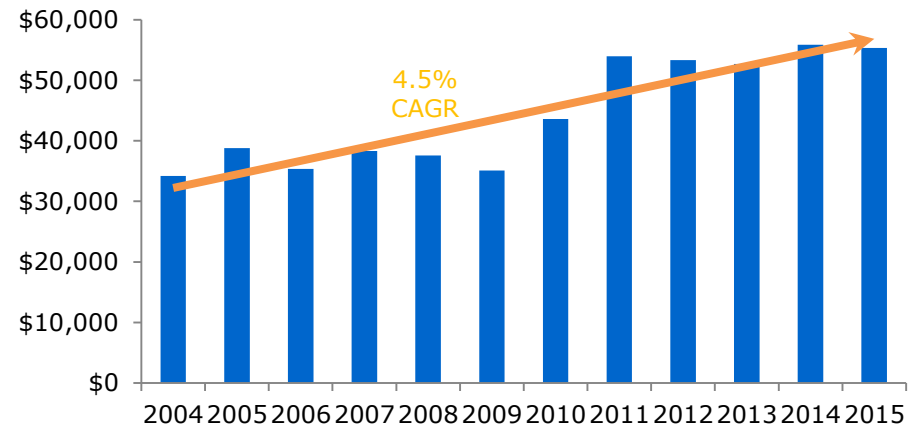
### Global Smartphone Units



### % of Revenue (CCG vs. DCG)



### Historical Revenue (USD)





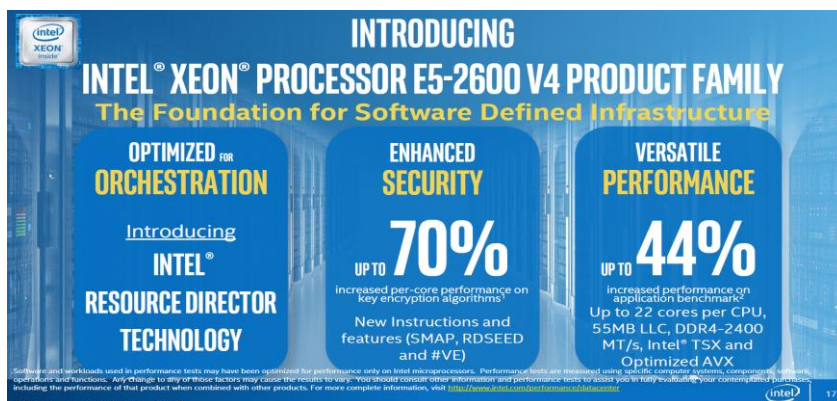
## Driving Growth in DCG and IoT

- \$16.7B acquisition of Altera (Dec 2015) – a leader in field-programmable gate array (FPGA) technology directly fuels DCG and IoT segment, enabling new classes of products
- Display of innovation at CES 2016 – demonstration of the Yuneec Typhoon H using Intel's RealSense camera enables the drone to sense what is happening around it, able to automatically avoid collisions and detect a person's blood pressure and heat
- Complete dominance in processing chips for data centers, 99% market share with DCG operating margins of 49% - segment is positioned for immense growth
- Successful launch of its 14nm Broadwell-EP Xeon E5-2600 V4 data center server family on March 31 provides 20-30% better performance for the same price point compared with prior generation Haswell-EP products
- Recent history of numerous acquisitions related to DCG and IoT such as pattern recognition, machine learning, advanced driver assistance systems, robotics, autonomous machines, 3D technology, and a cloud service provider



## Market Mispricing

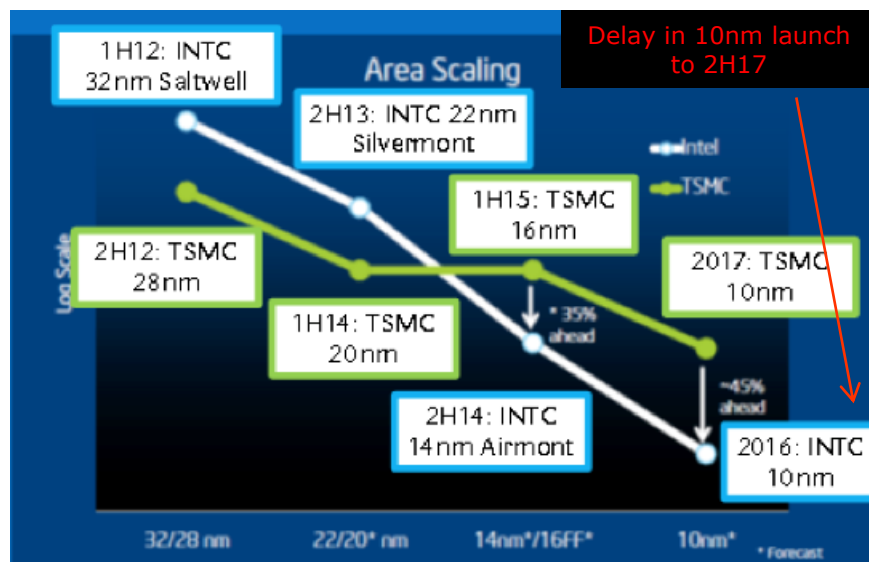
- Overly bearish perception on PC industry – strong catalysts for slow down of declines
- DCG and IoT growth potential is being overlooked , masked by negative outlooks on PC
- Uncertainty around Intel's ability to succeed in the future as it had failed in the smartphone and tablet market
- This leaves Intel trading at a 13.5x P/E, compared with the industry's average of 23.6x
- Intel's size, expertise, and new management will allow them to capture growth in DCG and IoT that the market is undervaluing



## Risks

- Highly competitive industry that is subject to rapid technological and market developments - requires management to be able to meet changes in customer needs
- Global slowdown, currency headwinds and depressed commodity prices can continue to impact revenues – concern in the Asia-Pacific countries
- Delays in processor launches provides opportunity to competitors to capture market share from Intel
- Continued decline in the PC industry
- AMD’s launch of Zen architecture

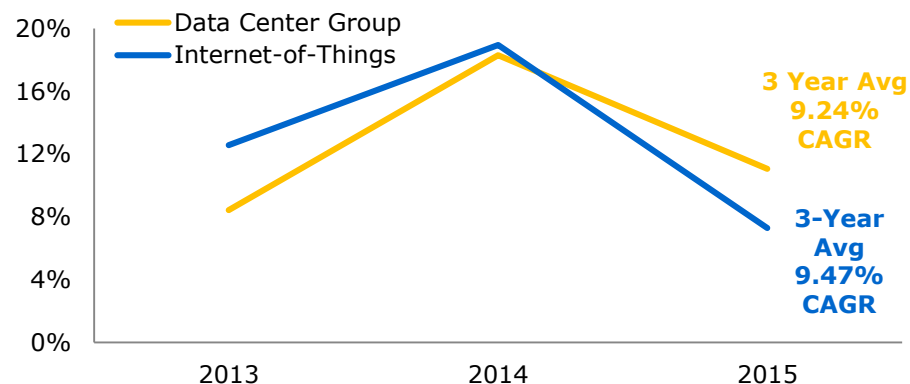
## Transistor Area Scaling: Intel vs. TSMC



## Catalysts

- Collaboration with Tsinghua University and Montage Technology Global Holdings – focus on the Data Center segment in China
- Increased interest in gaming will help stabilize Intel’s CCG revenues
- Expanding product portfolio to include supplementary products such as FPGA and discrete GPUs
- Cloud companies use FPGAs to boost server capacity – Altera, expert in FPGA, will take time to unlock growth
- Dominant market share in data centers and PC processor increase barriers of entry to competitors as markets saturate
- 3D XPoint Technology plan to become available in early 2017
- Global UAV drone market expected to reach \$5.6B by 2020 from a \$1.2B market in 2015
- Organizational restructure to focus on DCG and IoT – workforce reduction of 12,000 people, mainly in the CCG group

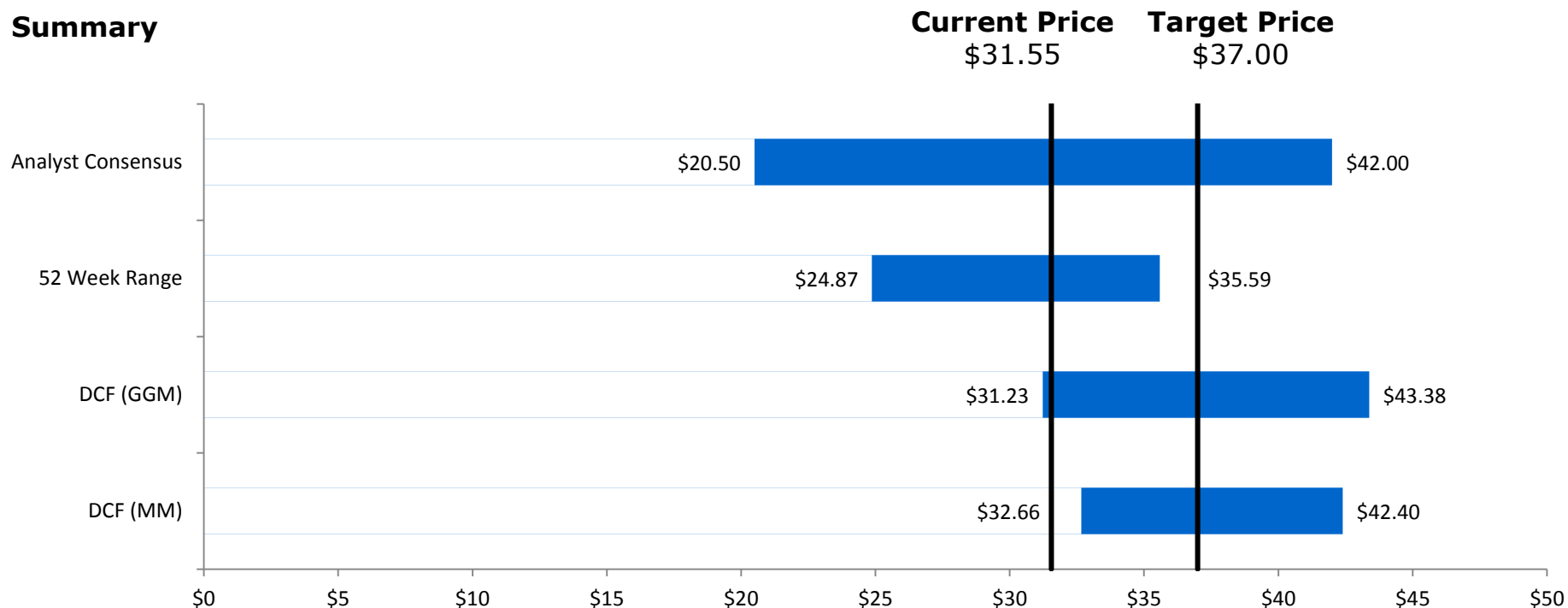
## Historical Y/Y Revenue







## Summary



Intel's current price of \$31.55 indicates a significant discount to the target price of \$37.00, implying a 20.57% return which includes a 3.30% dividend. Intel has a history of consecutively raising its quarterly dividends over the past 16 years from \$0.02 in 2000 to \$0.26 in 2016. A target price of \$37.00 was achieved through a blended DCF analysis using the Gordon Growth Method and Multiples Method. Intel is valued at a deep discount compared with its competitors based on trading multiples such as P/E and EV/EBITDA. With Intel being judged mainly on the decline of the PC industry and reduction in efforts towards the smartphone and tablet market, Intel's share price has declined 9% YTD. This presents an opportunity to capture Intel at a discount. Evidence of Intel's ability to diversify away from the PC business into much more profitable segments such as its Data Center Group, Intel does not deserve its harsh decline. Intel is positioned extremely well with a lead in two key growth segments, Data Centers and the Internet-of-Things.

# Valuation – Public Company Comparables



	Stock Price 06/15/16	Market Capitalization	Enterprise Value	P/E	NTM P/E	EV/EBITDA	EV/NTM EBITDA	EV/Revenue	EV/NTM Revenue	PEG
<b>ARM Holdings plc (LSE:ARM)</b>	\$13.84	19,473	18,274	39.9x	27.13x	28.3x	20.70x	12.7x	11.07x	2.57x
<b>Micron Technology, Inc. (NasdaqGS:MU)</b>	\$12.02	12,465	17,063	12.5x	57.47x	3.9x	4.55x	1.2x	1.36x	-0.88x
<b>NVIDIA Corporation (NasdaqGS:NVDA)</b>	\$47.36	25,290	21,974	40.4x	22.85x	18.0x	15.30x	4.3x	3.76x	4.29x
<b>NXP Semiconductors NV (NasdaqGS:NXPI)</b>	\$85.99	29,455	37,272	19.3x	14.70x	20.4x	10.71x	5.4x	4.04x	0.93x
<b>QUALCOMM Incorporated (NasdaqGS:QCOM)</b>	\$53.28	78,264	73,796	16.8x	12.52x	8.9x	8.48x	3.3x	3.31x	1.37x
<b>Taiwan Semiconductor Manufacturing Company Limited (TSEC:2330)</b>	\$5.03	130,424	117,940	14.6x	12.47x	7.2x	5.97x	4.6x	3.89x	1.17x
<b>Texas Instruments Inc. (NasdaqGS:TXN)</b>	\$61.69	61,951	63,269	21.5x	19.00x	12.0x	11.60x	4.9x	4.82x	2.15x
<b>Intel Corporation (NasdaqGS:INTC)</b>	\$31.61	149,262	159,579	13.5x	12.78x	6.9x	7.58x	2.8x	2.77x	1.44x
<b>Mean</b>	\$39.89	51,046	49,941	23.6x	23.73x	14.1x	11.04x	5.2x	4.61x	1.66x
<b>Median</b>	\$47.36	29,455	37,272	19.3x	19.00x	12.0x	10.71x	4.6x	3.89x	1.37x
<b>High</b>	\$85.99	130,424	117,940	40.4x	57.47x	28.3x	20.70x	12.7x	11.07x	4.29x
<b>Low</b>	\$5.03	12,465	17,063	12.5x	12.47x	3.9x	4.55x	1.2x	1.36x	-0.88x

	LTM Revenue	LTM Gross Margin %	LTM EBITDA Margin %	LTM EBIT Margin %	LTM Net Income Margin %	LTM Total Debt/Capital %	LTM Total Debt/EBITDA
<b>ARM Holdings plc (LSE:ARM)</b>	\$1,444	96%	45%	41%	34%	0%	0.0x
<b>Micron Technology, Inc. (NasdaqGS:MU)</b>	\$13,737	26%	31%	10%	8%	37%	1.8x
<b>NVIDIA Corporation (NasdaqGS:NVDA)</b>	\$5,164	57%	24%	20%	13%	26%	1.2x
<b>NXP Semiconductors NV (NasdaqGS:NXPI)</b>	\$6,858	48%	27%	13%	18%	44%	4.9x
<b>QUALCOMM Incorporated (NasdaqGS:QCOM)</b>	\$22,614	60%	37%	31%	22%	29%	1.4x
<b>Taiwan Semiconductor Manufacturing Company Limited (TSEC:2330)</b>	\$25,456	48%	64%	37%	35%	16%	0.5x
<b>Texas Instruments Inc. (NasdaqGS:TXN)</b>	\$12,858	59%	41%	33%	23%	30%	0.8x
<b>Intel Corporation (NasdaqGS:INTC)</b>	\$56,276	63%	41%	26%	20%	30%	1.1x
<b>Mean</b>	\$12,590	56%	38%	26%	22%	26%	1.5x
<b>Median</b>	\$12,858	57%	37%	31%	22%	29%	1.2x
<b>High</b>	\$25,456	96%	64%	41%	35%	44%	4.9x
<b>Low</b>	\$1,444	26%	24%	10%	8%	0%	0.0x

- Intel currently trades well below the industry's P/E and EV/EBITDA multiples, indicating a strong discount compared to its competitors
- With an industry P/E average of 23.6x, this indicates the market's recognition of the industry's growth potential in semiconductors
- Favourable operating statistics such as its Gross Margin and EBITDA are indicators that Intel's operations are doing well
- Higher debt structure is due to its acquisition of Altera
- Debt level do not cause concern with a 1.1x DEBT/EBITDA

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# Valuation – Discounted Cash Flow Analysis I



Intel Corporation									
USD (millions)	Historic			Forecasted Period					Historic 3-Yr Avg
	2013	2014	2015	2016E	2017E	2018E	2019E	2020E	
Client Computing Group (CCG)	34,645	34,872	32,219	30,917	30,348	29,702	29,150	28,435	
Growth Rate %	-5.0%	0.7%	-7.6%	-4.0%	-1.8%	-2.1%	-1.9%	-2.5%	-4.0%
Data Center Group (DCG)	12,163	14,387	15,977	17,985	19,811	21,736	23,832	26,029	
Growth Rate %	8.4%	18.3%	11.1%	12.6%	10.2%	9.7%	9.6%	9.2%	12.6%
Internet of Things (IoT)	1,801	2,142	2,298	2,956	3,719	4,280	4,921	5,412	
Growth Rate %	12.6%	18.9%	7.3%	28.6%	25.8%	15.1%	15.0%	10.0%	12.9%
Software and services operating segments (SSG)	2,188	2,216	2,167	2,202	2,256	2,310	2,367	2,424	
Growth Rate %	5.6%	1.3%	-2.2%	1.6%	2.5%	2.4%	2.5%	2.4%	1.6%
All other	1,911	2,253	2,694	2,782	2,923	3,065	3,221	3,377	
Growth Rate %	-3.0%	17.9%	19.6%	3.3%	5.1%	4.8%	5.1%	4.9%	11.5%
<b>Total Revenue</b>	<b>52,708</b>	<b>55,870</b>	<b>55,355</b>	<b>56,842</b>	<b>59,058</b>	<b>61,094</b>	<b>63,491</b>	<b>65,678</b>	
Growth Rate %	-1.1%	6.0%	-0.9%	2.7%	3.9%	3.4%	3.9%	3.4%	
COGS	21,187	20,261	20,676	22,623	22,678	23,216	23,809	24,301	
<b>Gross Profit</b>	<b>31,521</b>	<b>35,609</b>	<b>34,679</b>	<b>34,219</b>	<b>36,380</b>	<b>37,878</b>	<b>39,682</b>	<b>41,377</b>	
Gross Margin %	59.8%	63.7%	62.6%	60.2%	61.6%	62.0%	62.5%	63.0%	62.1%
R&D	10,611	11,537	12,128	12,278	11,753	12,035	12,381	12,676	
SG&A	8,088	8,136	7,930	8,128	7,973	7,881	8,571	8,866	
Restructuring and asset impairment charges	240	295	354	430	522	634	770	936	
Amortization of acquisition-related intangibles	291	294	265	345	340	335	330	325	
Total Operating Expenses	19,230	20,262	20,677	21,181	20,588	20,886	22,052	22,803	
<b>Operating Income</b>	<b>12,291</b>	<b>15,347</b>	<b>14,002</b>	<b>13,038</b>	<b>15,792</b>	<b>16,992</b>	<b>17,629</b>	<b>18,574</b>	
Operating Margin %	23.3%	27.5%	25.3%	22.9%	26.7%	27.8%	27.8%	28.3%	25.4%
Interest income and other, net	320	454	210	90	125	20	20	20	
Pretax Income	12,611	15,801	14,212	13,128	15,917	17,013	17,650	18,594	
Taxes	2,991	4,097	2,792	2,783	3,661	3,913	4,236	4,649	
<b>Net Income</b>	<b>9,620</b>	<b>11,704</b>	<b>11,420</b>	<b>10,345</b>	<b>12,256</b>	<b>13,100</b>	<b>13,414</b>	<b>13,946</b>	
EBIT	12,531	15,642	14,356	13,468	16,314	17,627	18,400	19,510	
Plus: Depreciation and Amortization	8,032	8,549	8,711	9,113	9,069	9,098	9,314	9,576	
EBITDA	20,563	24,191	23,067	22,581	25,383	26,725	27,714	29,086	
Less: Capex	7,326	10,105	10,711	8,258	10,889	11,130	11,622	12,453	
Less: Increase in NWC	-3,140	99	1,081	765	319.5	289	327	283	
Less: Taxes	2,991	4,097	2,792	2,783	3,661	3,913	4,236	4,649	
<b>UFCF</b>	<b>13,386</b>	<b>9,890</b>	<b>8,483</b>	<b>10,775</b>	<b>10,514</b>	<b>11,393</b>	<b>11,529</b>	<b>11,701</b>	
PV of UFCF			7,800	9,907	8,890	8,858	8,242	7,692	

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# Valuation – Discounted Cash Flow Analysis II



## Terminal Value - Multiples Method

<b>PV Sum of Cash Flows</b>	<b>43,589</b>
2020E EBITDA	29,086
WACC	8.75%
Terminal EBITDA Exit Multiple	7.5x
<b>Terminal Value (MM)</b>	<b>218,142</b>
PV of TV (MM)	143,404
Terminal Value % of EV	76.69%
<b>Implied Enterprise Value</b>	<b>186,993</b>
Plus: Cash	15,091
Less: Debt	25,369
Less: Minority Interest	0
Equity Value	176,715
Shares Outstanding	4722
<b>Implied Share Price</b>	<b>\$37.42</b>

## Terminal Value - Gordon Growth Method

<b>PV Sum of Cash Flows</b>	<b>43,589</b>
2020E UFCF	11,701
WACC	8.75%
Perpetuity Growth Rate	3.00%
<b>Terminal Value (GGM)</b>	<b>209,543</b>
PV of TV (GGM)	137,751
Terminal Value % of EV	75.96%
<b>Implied Enterprise Value</b>	<b>181,340</b>
Plus: Cash	15,091
Less: Debt	25,369
Less: Minority Interest	0
Equity Value	171,062
Shares Outstanding	4722
<b>Implied Share Price</b>	<b>\$36.23</b>

## WACC

<b>Cost of Debt</b>	<b>1.86%</b>
Tax Rate	22.79%
After-tax Cost of Debt	1.44%
Risk-free rate	1.68%
ERP	7.50%
Beta	1.06
<b>Cost of Equity</b>	<b>9.63%</b>
Weight of Equity	89.28%
Weight of Debt	10.72%
<b>WACC</b>	<b>8.75%</b>

## Summary

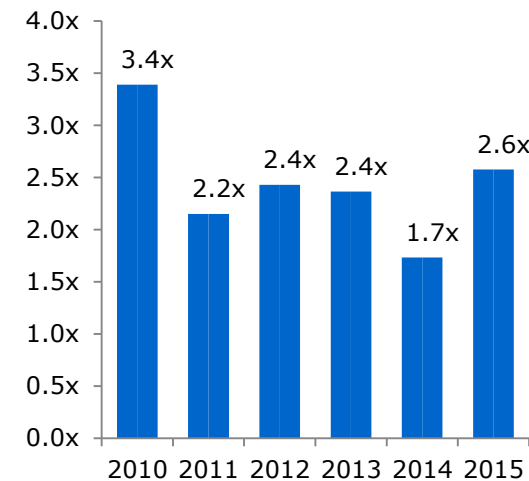
DCF Gordon Growth Price Target	\$36.23
DCF Multiples Method Price Target	\$37.42
<b>Blended average</b>	<b>\$36.83</b>
Current Price	\$31.55
Target Price	\$37.00
Capital Gains	17.05%
Div. Yield	3.30%
<b>Total Return</b>	<b>20.57%</b>

## Sensitivity Tables for DCF

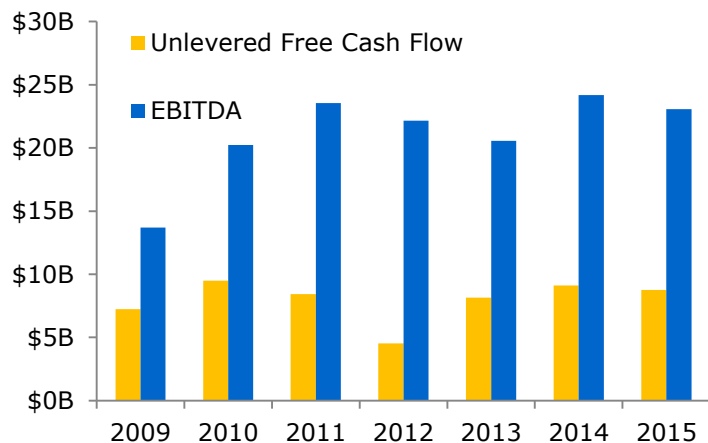
Equity Value Per Share					
WACC	Perpetual Growth Rates				
	2.50%	2.75%	3.00%	3.25%	3.50%
8.25%	\$36.77	\$38.20	\$39.76	\$41.48	\$43.38
8.50%	\$35.21	\$36.50	\$37.92	\$39.46	\$41.17
8.75%	\$33.77	\$34.95	\$36.24	\$37.64	\$39.17
9.00%	\$32.45	\$33.53	\$34.70	\$35.97	\$37.36
9.25%	\$31.23	\$32.22	\$33.29	\$34.45	\$35.71

Equity Value Per Share					
WACC	EBITDA Exit Multiples				
	6.5x	7.0x	7.5x	8.0x	8.5x
8.25%	\$34.11	\$36.19	\$38.26	\$40.33	\$42.40
8.50%	\$33.74	\$35.79	\$37.84	\$39.89	\$41.94
8.75%	\$33.38	\$35.40	\$37.43	\$39.45	\$41.48
9.00%	\$33.02	\$35.02	\$37.02	\$39.02	\$41.02
9.25%	\$32.66	\$34.64	\$36.62	\$38.60	\$40.57

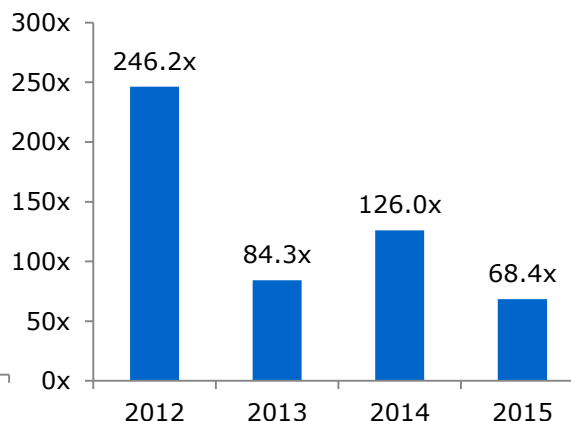
## Current Ratio



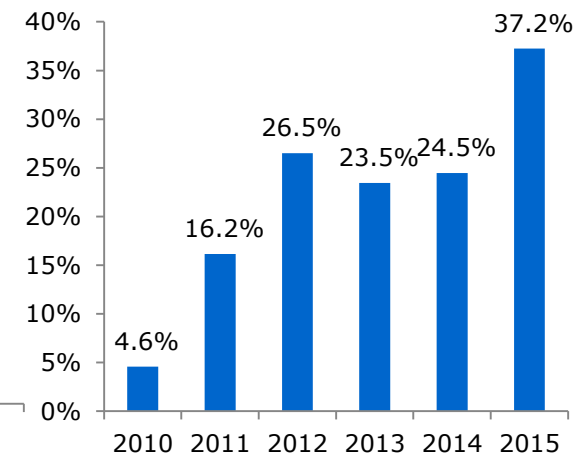
## EBITDA and FCF Growth (USD)



## EBITDA / Interest Expense



## Total Debt/Equity



## Recent Acquisitions

- **Itseez Inc** – Develops customized computer vision software & provide consulting services to the industry leaders, helping them to create next gen products (May 26, 2016)
- **Yogitech SpA** – Expert in Advanced Driver Assistance Systems (ADAS), robotics and autonomous machines for market segments that require functional safety and high performance, such as automotive and industrial (April 5, 2016)
- **Replay Technologies** – Replay’s freeD format uses high-resolution cameras and compute intensive graphics to let viewers experience sporting events from any angle (March 9, 2016)
- **Ascending Technologies** – A drone company located in Krailing, Germany, with best-in-class drone auto-pilot software and algorithms (January 4, 2016)
- **Saffron Technology** – A leading cognitive computing platform provider (October 26, 2015)
- **Basis Science** – The world’s most advanced health tracker and web and mobile service , wearables (March 25, 2014)
- **Cloudera** – Leading enterprise analytic data management software powered by Apache Hadoop (March 27, 2014)

