INTEGRATED DEVICE TECHNOLOGY, INC.

NASDAQ: IDTI

WESLEY LAU
SUMMER ANALYST

AGENDA

INDUSTRY OVERVIEW	• Industry Overview • Investment Thesis
MARKET OVERVIEW	• Economic Drivers • Strategic Positioning
COMPANY ANALYSIS	• SWOT • Comparable Co.

INDUSTRY OVERVIEW

INVESTMENT THESIS

INDUSTRY OVERVIEW: SEMICONDUCTORS

What are Semiconductors:

- A wide range of essential electronic inputs that are a core component of electronics and a vital input of products ranging from devices and systems to solutions and services.
- Includes memory chips, silicon wafers, and solid-state devices that are used in computers, cell phones, internet providers, and IoTs.

Specifically for IDT, What are Analog Chips?:

- Analog Chips are the nervous system of electronic devices. They take a real-world signal, such as sound, light, heat or pressure, and turns it into a digital signal.
- IDT primarily deals with Radio Frequency Chips, Clocks, Sensors, and Application-Specific Integrated Circuits.

Major Players:

NVIDIA
NASDAQ: NVDA
Market Cap: 160.2B

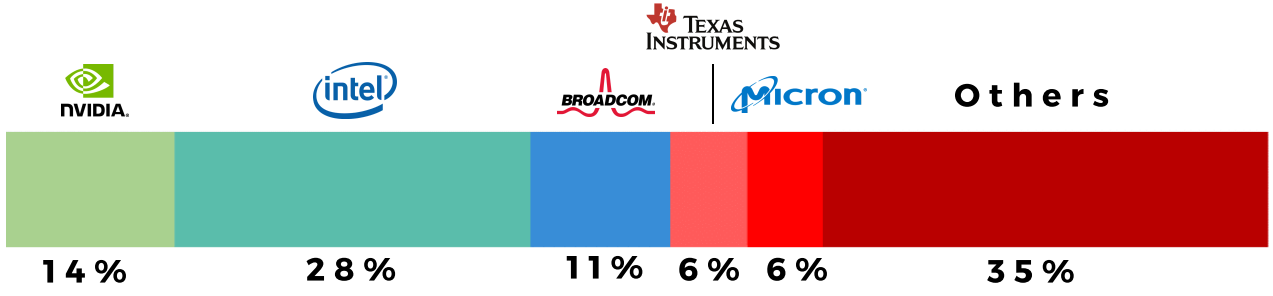
intel
NASDAQ: INTC
Market Cap: 247.2B

BROADCOM
NASDAQ: AVGO
Market Cap: 116.7B

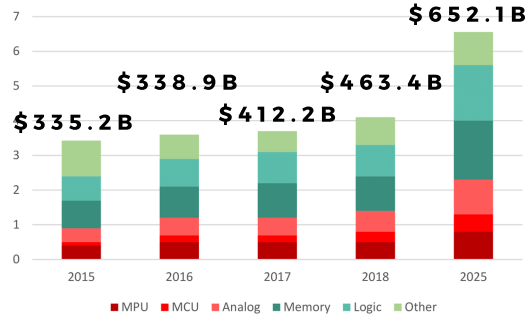
Texas Instruments
NASDAQ: TXN
Market Cap: 111.9B

Micron
NASDAQ: MU
Market Cap: 67.53B

Market Share:



Historical & Projected Revenue ($100b):



The semiconductor industry is highly diversified with companies specializing in their own product and market. Thus, they do not compete directly with each other.

BOSTON UNIVERSITY

Bloomberg, Semi.org, IBISWorld

BU FINANCE & INVESTMENT CLUB

INVESTMENT THESIS

- IDT is an analog/mixed-signal company with strong technology foundation that creates high barriers to entry in many of its business segments (RF, power management, timing, wireless charging, automotive sensors, etc.). Moreover, its revenue base is well diversified across multiple end markets including mobile, automotive, communications, and data center/enterprise.

- Similar to other analog leaders such as Texas Instruments, Maxum Integrated Products, and Analog Devices, IDT carries high gross (over 60%) and operating margins (near 30%). Despite its strong margin profile, it is currently trading below peers at ~35x the annualized CY2018 PE ratio, compared to peers that trade near or above 75x. I believe IDT will trade at a multiple closer to its peers as the company grows.

- In light of the recent consolidation wave in the sector, I would view IDT as having attractive characteristics given its growth businesses, strong technology profile, and relatively low trading multiple.

MARKET OVERVIEW

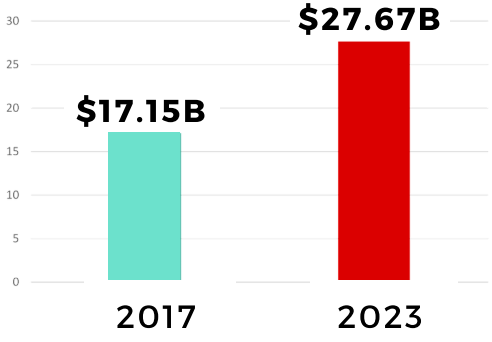
ECONOMIC DRIVERS

STRATEGIC POSITIONING

ECONOMIC DRIVERS

DATA CENTERS

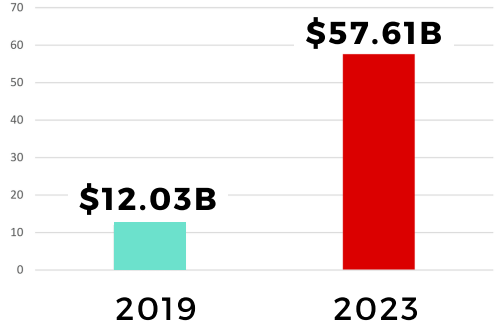
Data Center Industry Projected to Grow by **8.21% CAGR by 2023**



- There is an ever-increasing demand for quicker speeds and higher computational power.
- The increasing investment in data centers across the globe is expected to increase by 13.35% entering 2019.
- Furthermore, the demand for capital investments and new technological innovations in the field of data storage and transfer is likely to propel the data center services market growth.

ARTIFICIAL INTELLIGENCE

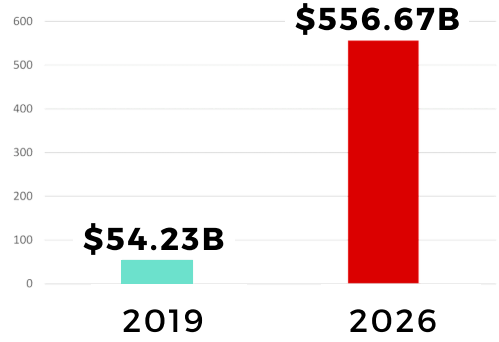
AI Industry Projected to Grow by **48.02% CAGR by 2023**



- Analysts expect companies in nearly every sector to integrate cognitive technologies.
- The semiconductor industry, every 2 years, unveils new chips with double the parts count of the previous model. Artificial intelligence manufacturers continuously update their semiconductors, like GPUs and analog chips, to be able to process the increasing amount of information.
- Over $6 billion has been into over 1,000 AI start-ups in the last three years,

AUTONOMOUS DRIVING

Autonomous Driving Industry Projected to Grow by **39.47% CAGR**



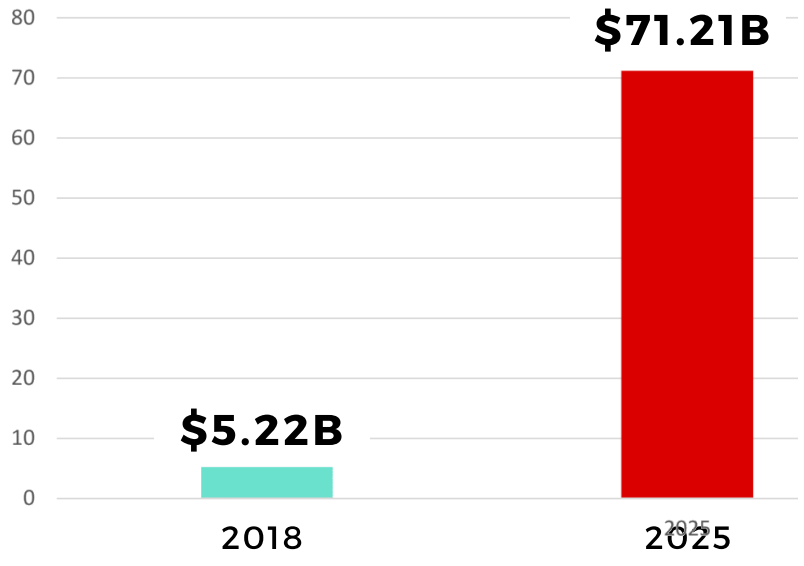
- Growth is driven by supportive regulations, government funding, and investments in digital infrastructure.
- Other forms of assisted driving include lighting adjustment that alerts drivers of potential issues such as lane departure warning, blind spot detection, and also pedestrian presence. According to independent research firm IDC, the worldwide the assisted driving market is expected to grow 26.9% in 2018 and increase at a 5-year CAGR of 33.3% from 2015 to 2020.

Reuters, Delliote, Allied Market Research, IDC

STRATEGIC POSITIONING

Entering High Growth Markets

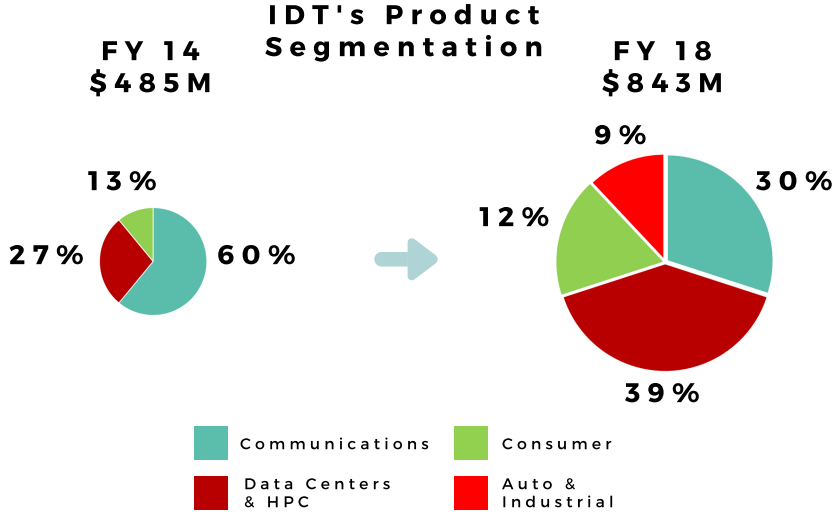
Value of the Wireless Charging Industry Projected to Grow by **45.54% CAGR by 2025**



- Ability to target & become a leader in a niche market that has the potential to grow exponentially beyond analyst projections like the Bluetooth Industry did.
- For 2018 and 2019, CFRA predicts the wireless charging market will grow by 47% and 44% respectively, reaching 550 million shipments in 2018 and almost 800 million by 2019.

Leaving Declining Markets

- IDT's exposure to the sales cycles of the semiconductor industry is primarily due to its reliance on a few big communications customers and its volatile earnings performance over the past decade.



- IDT has been slowly removing their investments in their communication segment.
- They are expanding their product line to multiple high growth markets with CFRA forecasting the automotive study to grow at 15% over the next 3 years.

S W
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SWOT
ANALYSIS

COMPARABLE
CO. ANALYSIS

SWOT ANALYSIS

Strengths

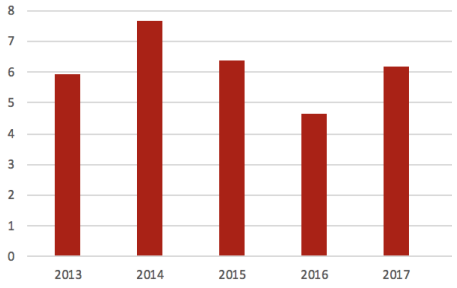
Liquidity Position:

- IDT had a strong liquidity position at the end of FY2017 which is needed to quickly enter new markets.

R&D Spending:

- Strong R&D helps the commercialization of sophisticated analog semiconductor products.
- In FY2018, the company spent US$165.1 million on R&D operations, 22.7% of revenue.

Historical Current Ratios



Weaknesses

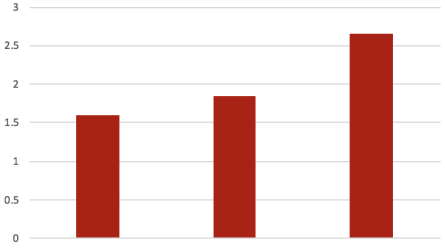
Increasing Debt:

- If IDT fails to comply with any of the debt service requirements, the debt could become due and payable prior to its scheduled maturity.

Few Suppliers:

- IDT replies on a very few raw material suppliers. The company's operations would be adversely affected if they are unable to obtain adequate supplies of raw materials in a timely manner to enter emerging markets.

Historical Total Debt-to-EBIT Ratios



S&P Credit Rating: BB-

Opportunities

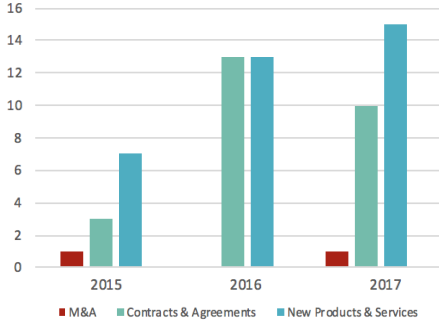
Product Launches:

- With strong insight into the requirements of its clients, IDT is well positioned to deliver innovative products and solutions and other initiatives.

Competitive Position:

- According to World Semiconductor Trade Statistics, the global semiconductor market was valued at $335 million with stable growth in 2015 and is expected to witness a growth of 6.5% in 2017 and further 2.3% in 2018 to reach a value of $412 billion and $463 billion, respectively.

Historical Initiatives



Threats

Rapid Advancements:

- An inability to study the evolving technological landscape may impact the company's competitive position.

Strong Competition:

- Competition could intensify with the entry of new competitors and developments. Barriers to entry are very high. Yet, if a company does manage to obtain significant market share, the intensity in the sector increases greatly.

Intellectual Property:

- Being the first to obtain compelling Intellectual Property is a race between peers and obtaining product licenses from many companies with broad portfolios is difficult which may cause litigation.

COMPARABLE COMPANY ANALYSIS

LTM data (08/15/2018)

Company	Ticker	EV	Market Cap	Revenue	EBITDA	Net Income	PE	EV/EBITDA	EV/Revenue
Integrated Device Technology	**IDTI**	**4,092.2**	**2,769.5**	**842.8**	**22.80%**	**15.17%**	**35.6x**	**21.3x**	**4.9x**
Silicon Laboratories	SLAB	3,956.9	4,150.9	822.2	17.85%	6.76%	**75.1x**	**27.0x**	**4.8x**
Monolithic Power Systems	MPWR	5,290.1	5,603.6	527.3	21.09%	15.51%	**71.2x**	**47.6x**	**10.0x**
Cypress Semicoductor	CY	7,260.4	6,481.5	2,408.5	2.89%	0.66%	**78.0x**	**15.5x**	**3.0x**
Mellanox Technologies	MLNX	3,988.8	4,271.5	982.7	15.76%	5.62%	**77.2x**	**25.8x**	**4.1x**
High							78.0x	47.6x	10.0x
Mean							75.4x	28.9x	5.5x
Median							**76.2x**	**26.4x**	**4.4x**
Low							71.2x	15.5x	3.0x

THE APPENDIX

PORTER'S 5 FORCES
MANAGEMENT TEAM
REVENUE GENERATION
PRODUCT DEFINITION
IDT'S MULTIPLES
COVER PAGE V.2

THREAT OF ENTRANTS

- High startup costs and the significant capital investments needed to develop compelling technology.
- One of the largest barriers to entry is achieving the know-how of an industry and disrupting the already established ties in each industry.
- It must also offer distinct price advantages in order to gain marginal market share.

POWER OF BUYERS

- Buyers tend to have heavy influence because they buy in heavy volumes.
- Original equipment manufacturers (OEMs) and original design manufacturers (ODMs) are the primary customers. In very few cases, do semiconductor companies sell directly to the consumer.
- Some companies, like Qualcomm, have such compelling intellectual property that their average sales price is a percentage of the end product rather than the integrated circuit.

INTENSITY OF RIVALRY

- Rivalry is high, each sub-industry may have only a few big players.
- They differentiate themselves on various parameters: performance, power consumption, life expectancy.
- They also can specialize for the needs of a specific project based on speed, reliability, features, and price.

THREAT OF SUBSTITUTES

- Currently, there are no substitutes for semiconductor chips.
- The only foreseeable dsiruption to the semicodnuctor industry is the success of quantum computing.

POWER OF SUPPLIERS

- A high number of suppliers and dominated by a small number of players.
- Pressures on their suppliers, since many suppliers may have a particular that firm as their largest client.

EXECUTIVE MANAGEMENT

Gregory Waters

- Title: CEO, Director, President
- Since: 2014

From 2006 to 2012, Waters served as Senior Vice President and General Manager, Front-End Solutions at Skyworks Solutions, Inc. Earlier, he held various positions at Skyworks including Executive Vice President; Vice President and General Manager of Cellular Systems and Vice President, Linear Products. He also served as Senior Vice President of Strategy and Business Development at Agere Systems Inc

Brian White

- Title: CFO & VP
- Since: 2013

Prior to this, White served as the Vice President of finance in February 2007 and the Treasurer in April 2009. White was promoted to the Chief Financial Officer in September 2013. Prior to joining this company, Mr. White served as financial and operational management positions with Nvidia, Hitachi GST, and IBM. He began his career in public accounting with Deloitte & Touche and Arthur Andersen.

Ken Kannappan

- Title: Chairman
- Since: 2017

Kannappan served as Director at IDT from 2015 to 2017. He served as the President and Chief Executive Officer at Plantronics, where he has been a member of the Board since 1999. Kannappan joined Plantronics in 1995 as the Vice President of sales. Prior to joining Plantronics, he served as the Senior Vice President of Investment Banking at Kidder, Peabody & Co. Incorporated. Kannappan also serves as the Chairman of the Board of Directors at Mattson Technology, Inc.

Sailesh Chittipeddi

- Title: CTO & Global VP
- Since: 2017

Chittipeddi served as the Chief Executive Officer and the President of Conexant Systems. Mr. Sailesh also served in various executive positions at Conexant Systems.

REVENUE GENERATION

NVIDIA

IDT

Micron

intel

OEMs

ODMs

Data Centers

Artificial Intelligence

Autonomous Driving

PRODUCT DEFINITION: ANALOG CHIPS

Analog Chips are the nervous system of electronic devices. It takes a real-world signal, such as sound, light, heat or pressure, and turns it into a digital signal.

Radio Frequency

Transmits and/or receive radio signals between two devices

Clocks

Oscillates between a high and a low state and is used like a metronome to coordinate actions of digital circuits

ASIC

Application-Specific Integrated Circuits are customized for a particular use, rather than intended for general-purpose use

Sensors

Sensors are used to convert changes to some physical parameter to an electrical signal

MULTIPLES

- P/Book: 6.47
- P/Tangible Book: 93.84
- P/Sale: 5.07
- P/Cash Flow: 18.39
- P/Free Cash Flow: 22.87
- EV/Sales: 5.10
- Price/Share: 32.22
- EBITDA Margin: 32.52%
- Gross Margin: 57.92%

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