



The Global Specialty Foundry Leader

Business Overview

Russell Ellwanger, CEO

January 2019



Safe Harbor

This presentation contains forward-looking statements within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. These statements are based on management’s current expectations and beliefs and are subject to a number of risks, uncertainties and assumptions that could cause actual results to differ materially from those described in the forward-looking statements. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. For example, statements regarding expected (i) customer demand, (ii) utilization and cross utilization of our Fabs, (iii) growth in our end markets, (iv) market and technology trends, and (v) growth in revenues, cash flow, margins and net profits are all forward-looking statements. Actual results may differ materially from those projected or implied by such forward-looking statements due to various risks and uncertainties applicable to TowerJazz’s business as described in the reports filed by Tower Semiconductor Ltd. (“Tower”) with the Securities and Exchange Commission (the “SEC”) and the Israel Securities Authority (“ISA”), including the risks identified under the heading "Risk Factors" in Tower’s most recent filings on Forms 20-F and 6-K. No assurances can be given that any of the events anticipated by the forward-looking statements will transpire or occur, or if any of them do, what impact they will have on the results of operations or financial condition of TowerJazz.

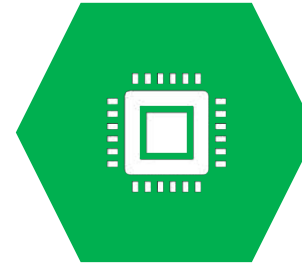
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TowerJazz: Full Circle Value Creation



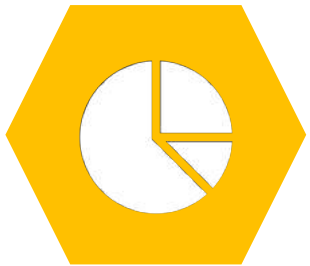
Analog Business and Financial Model

Strong financial position; focus on **profitable growth** with **margins expansion** and **cash generation** by driving **innovation within silicon** in proven technologies rather than solely by technological node shrinkage.



Leading Technology Offering

Provide wide range of **customized analog solutions** and **leading edge specialty process technologies** including Radio Frequency (RF), High Performance Analog (HPA), Power Management, CMOS Image Sensors, Mixed-Signal/CMOS, and MEMS.



Strong Market Position

Providing **cutting edge market solutions**, aligned with **leading customers'** technology roadmaps in **growing markets** such as automotive, consumer, medical and industrial. Ensuring long-term business relationships.



Global Operations

High manufacturing capabilities with seven worldwide manufacturing facilities, providing **capacity assurance** and **operational flexibility**.

High Quality and Flexibility of Worldwide Manufacturing Capabilities

Over 2.3 million wafers per year!



Migdal HaEmek, Israel

- 6", 150mm
- CMOS, CIS, Power, Power Discrete
- 1 μ m to 0.35 μ m
- Planarized BEOL,
- W and Oxide CMP



Migdal HaEmek, Israel

- 8", 200mm
- CMOS, CIS, Power, Power Discrete, RF Analog, MEMS
- 0.18 μ m to 0.13 μ m
- Cu and Al BEOL, EPI
- 193nm Scanner



Newport Beach, USA

- 8", 200mm
- CMOS, CIS, MEMS, RF Analog
- 0.18 μ m to 0.13 μ m
- Al BEOL, SiGe, EPI



San Antonio, USA

- 8" (200mm)
- Power, RF Analog
- 0.18 μ m
- Al BEOL



Arai, Japan

- 8", 200mm
- Analog, CIS
- 0.13 μ m to 0.11 μ m



Tonami, Japan

- 8", 200mm
- Analog, Power, Discrete, NVM, CCD
- 0.35 μ m to 0.15 μ m



Uozu, Japan

- 12", 300mm
- Analog, CMOS, CIS, RFSMOS/SOI
- 65nm to 45nm

Financial Focuses and Targets



Increase margins by:

- Improved mix and ASP increase
- Cross qualification and capacity flexibility



Reducing operating expenses:

- Minimization of central group activities, driving business unit ownership and ROI per employee/ project
- Optimizing cost structure
- Worldwide synergies and efficiency mindset

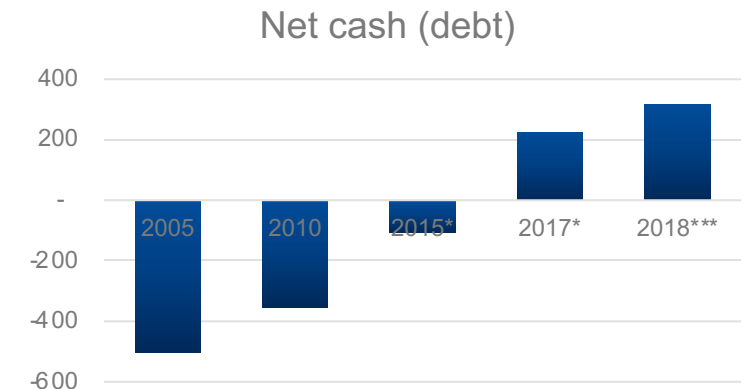
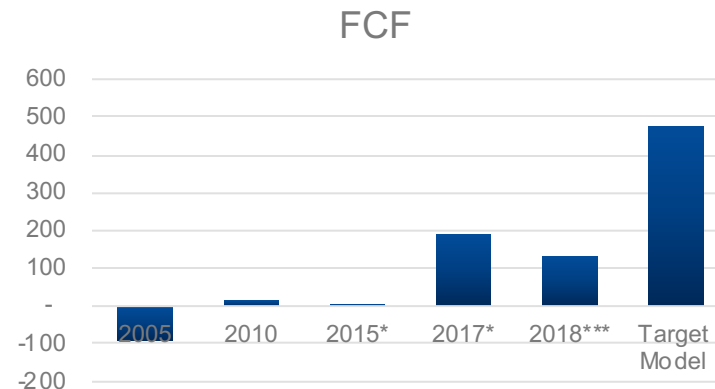
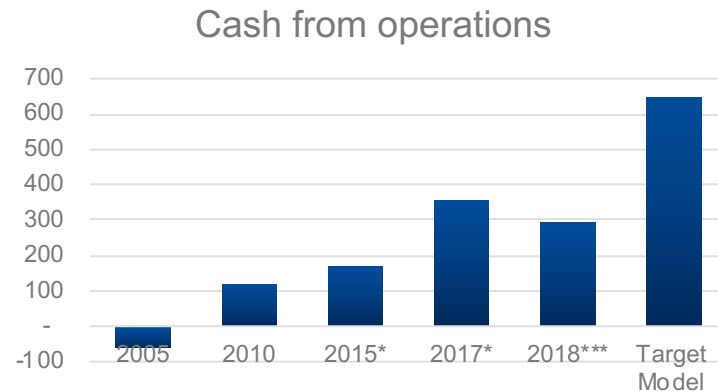
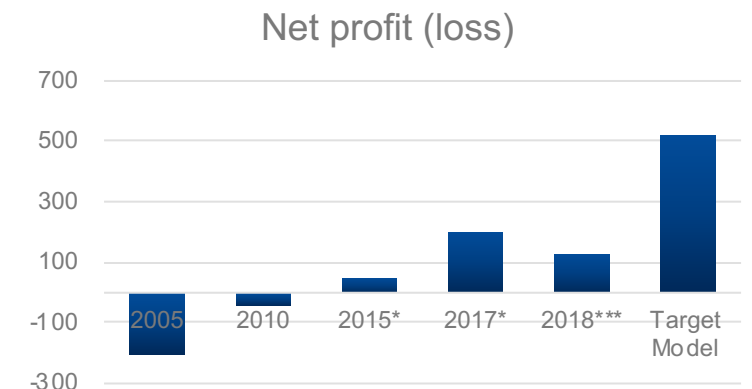
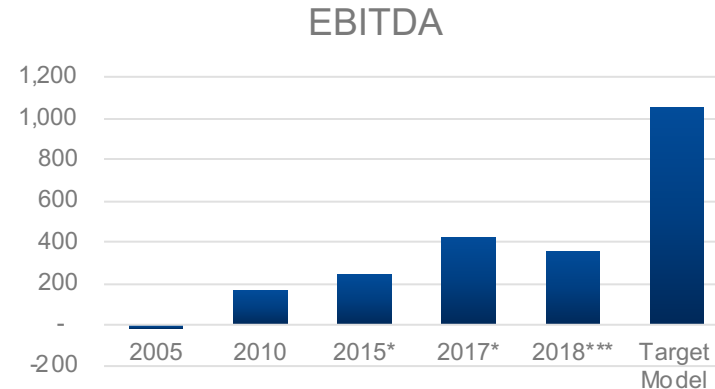
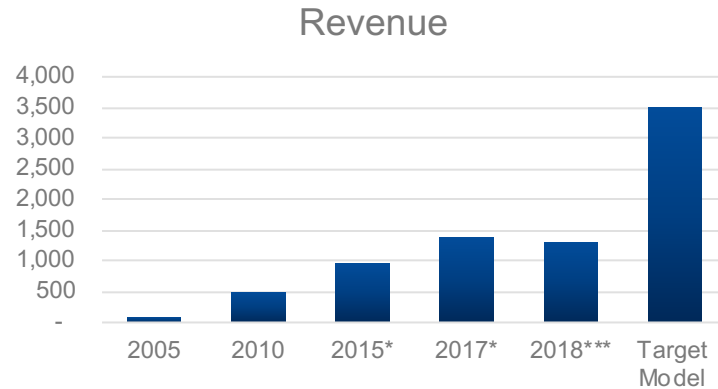


Free cash flow growth:

- Analog predominant CapEx re-use model
- New capability Cap-Ex to support additional growth drivers often shared with lead customer partners.

Long Term Target Model | Financial Performance (\$M)

Profitable growth and cash generation



(*) 2015 Net profit as presented above excludes \$81M non-cash financing expenses related with the accelerated conversion of CD series F

(**) 2017 Net profit as presented above excludes \$82M income tax benefit resulted from Israeli deferred tax asset realization following valuation allowance release and \$13M income tax benefit related to U.S. tax reform.

(***) 2018 revenues based on Q4 mid-range guidance; all other metrics based on YTD Q3'18 run rate

2018 Highlights

Business Highlights

Improved Mix and Added Leading Edge Offering
(NPB SiGe repurposing; increased 300mm activities)

Utilization Management
(cross qualification and manufacturing flexibility;
building new capabilities)

Solid base for 2019
(Rapid changes with required adjustments; focusing on
market drivers and capabilities)

Financial Highlights

Driving Improved Margins

Cash Generation and FCF
(Sustain CapEx model)

Strong Balance Sheet
(net cash to enable and support near-term growth)

Specialized Analog Solutions Answering Market Mega Trends

Wireless Everything
Seamless Connectivity



Green Everything
Energy Efficiency



Smart Everything
Interactive Smart Systems



**Radio Frequency and
High Precision Analog**

~30%
of 2017 corporate revenues

Power

~30%
of 2017 corporate revenues

Sensors

~15%
of 2017 corporate revenues

Protecting and growing high-end share of presently served markets

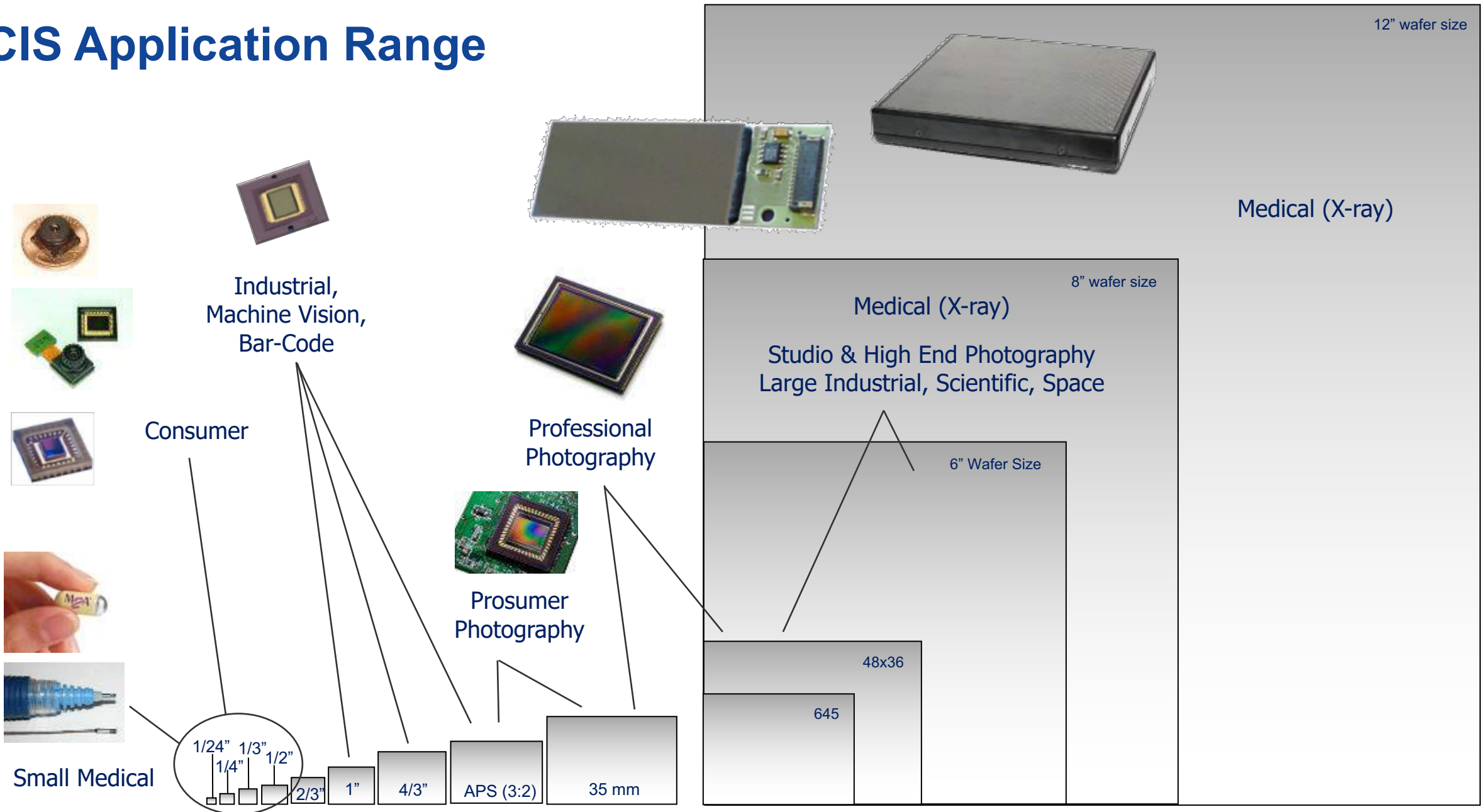
– Power discrete:

- Strong partnerships with leading IDMs – where we run and/ or co-develop flows which are kept behind a firewall on long-term, captive agreements
- CAGR 9,5,3 years: 17%, 19%, 21%

– Image sensors:

- 200mm smallest global shutter pixel in the world for high growth industrial sensors
- 200mm BSI partnership in China as a bridge to next generation family of sensors
- Continued growth in our 200mm major market share dental x-ray activities
- Ramping 300mm single die per wafer medical sensors to augment already high market share 200mm larger area dental
- Protecting high market share of studio cameras with transition to 300mm
- DSLR and large sensor mirrorless: partnering with tier-1 for next generation camera (evolutionary) and a specific G+2 revolutionary performance
- CAGR 9,5,3 years: 19%, 19%, 23%

CIS Application Range



TowerJazz Addressed CIS Markets

Automotive



ADAS and
Autonomous
driving

Industrial / Machine Vision



2D barcode reader
Traffic control
Industrial QA
Food automation

Medical



Intra-oral
Extra Oral
Mammography
Surgery
C-Arm and Flouro

High end photography and Cinematography



Cinematography
High end DSLR
Mirror less (ILC)

3D, Gesture control, AR/VR



Gesture control
Augmented
Reality
Virtual Reality

Security



City safety
Borders camera
House safety

CIS markets for 300mm

■ High end Cinematography and DSLR

- Driven by the need for high sensitivity and very low noise
- Excellent pixel performance
- Next generation Stacked Wafers BSI for the DSLR market

■ Next generation Industrial Machine Vision

- Smallest pixel in the world (half the size of the leading IDM)
 - Allows for either much smaller and lower cost camera or double the resolution
 - Analog AI to be embedded in the sensor for decision making

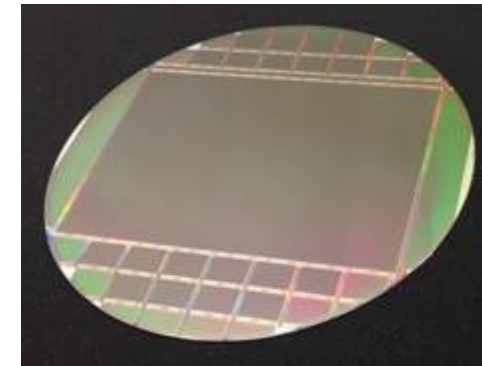
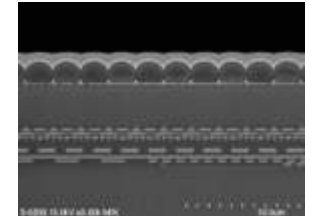
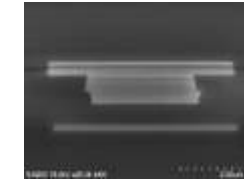
■ One-die-per wafer on 300mm for medical X-Ray tube replacement



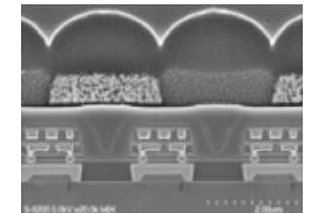
DSLR camera



Cinema digital camera



1-DPW medical X-Ray sensor



Best in class
global shutter
pixel

**Substantial market share due to 300mm advanced CIS capabilities
is a major growth driver**

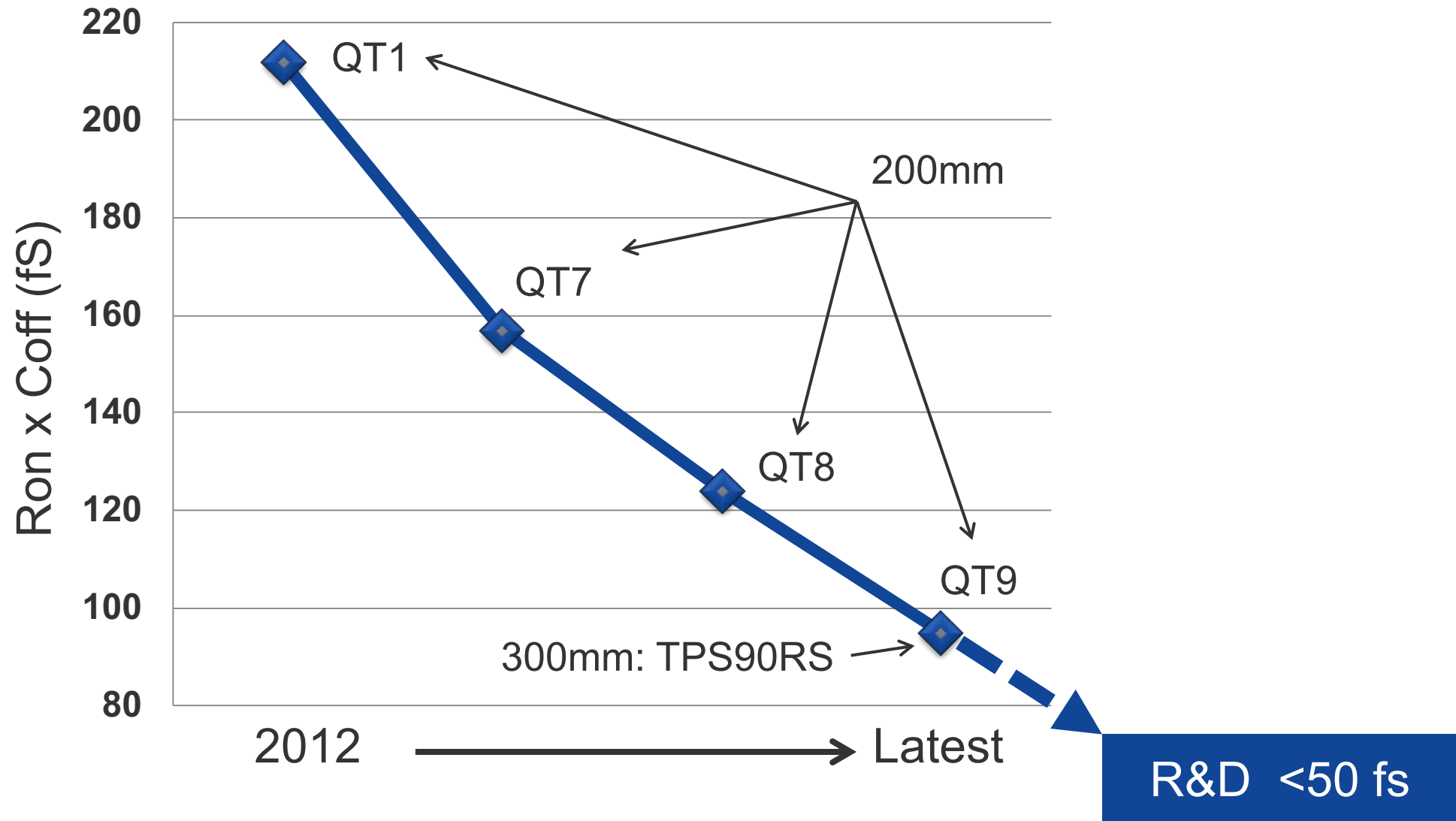
Protecting and growing high-end share of presently served markets

– RF mobile

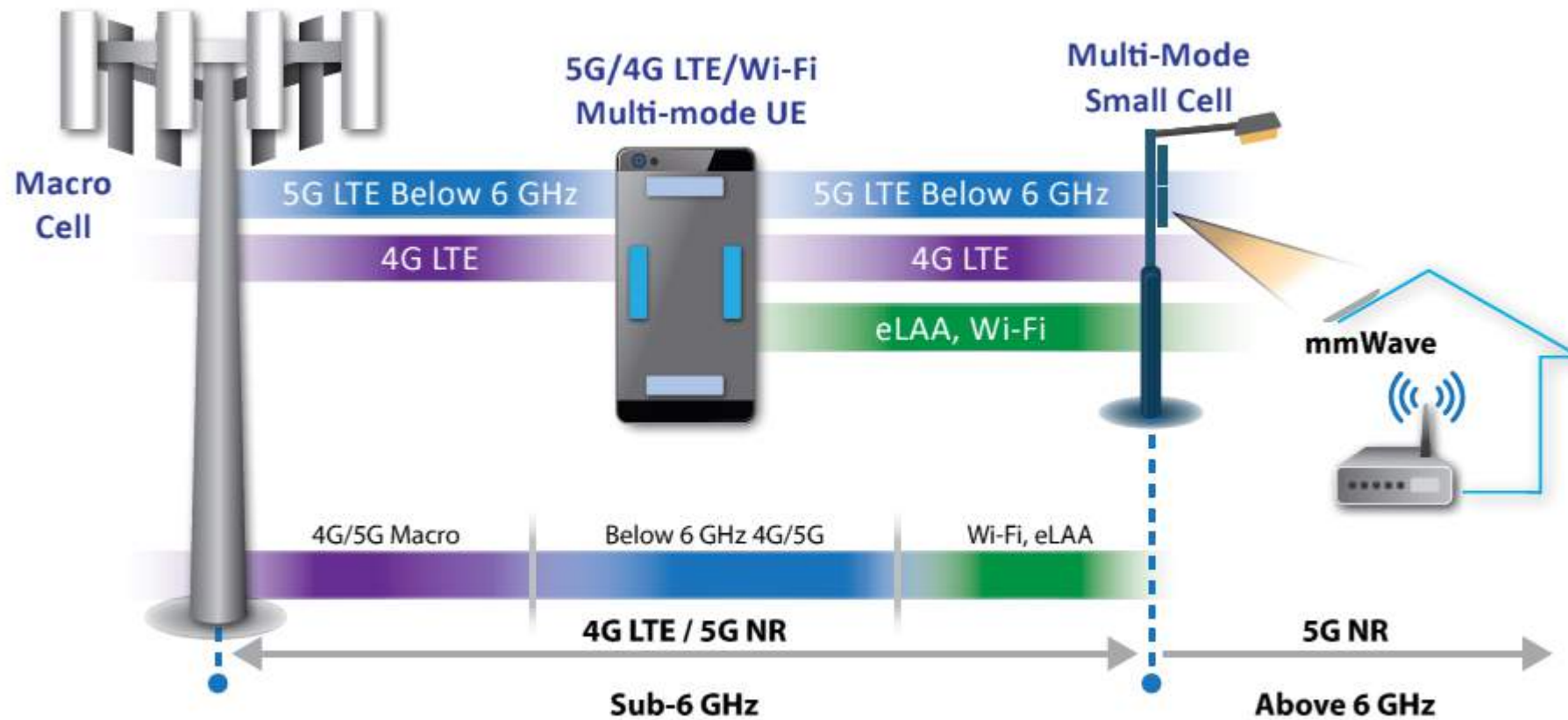
- Continue high end RF SOI roadmap
 - 300mm 65nm sub 95fsec RonCoff with high digital capability (e.g. switch LNA combo): ramping presently
 - 200mm QT8 and QT9 high power: multiple tier-1 engagements
- Breakthrough RonCoff MEMS switch
- New materials with game changing RonCoff
- CAGR 9,5,3 years: 12%, 34%, 3%



RF SOI RF Switch Performance: Best-in-Class RonCoff



5G Vision



Source: Skyworks Solutions

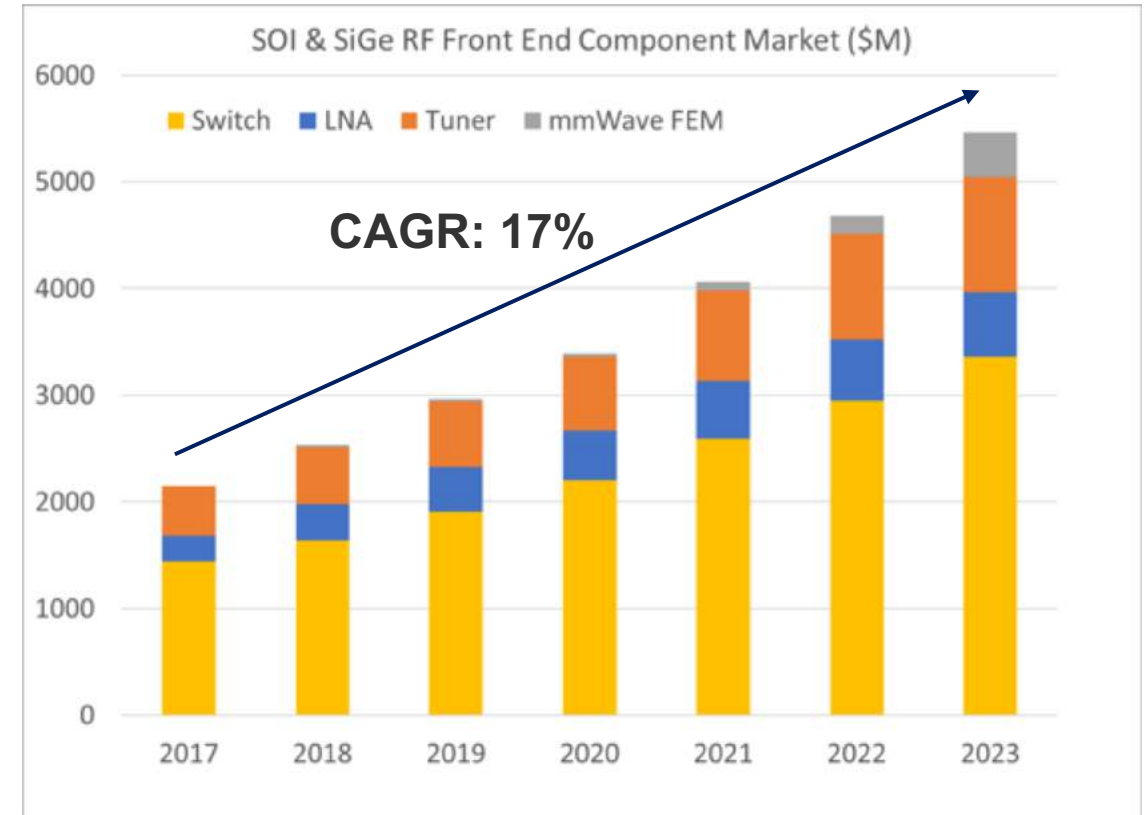
- Low Ron-Coff Switch (**SOI, CMOS, MEMS**)
- Low Noise Amplifier (**SOI & SiGe**)
- Integrated Power Amplifier Platform (**SiGe**)

- Low Ron-Coff Switch (**MEMS, New Material**)
- mm-wave Low Noise Amplifier (**SiGe**)
- mm-wave Power Amplifier (**SiGe**)

TowerJazz Solutions

Rapid Growth for SOI and SiGe based RF Front-End Components

- Broader adoption of 5G NR coexisting with LTE-A and LTE-A-Pro will drive RF Front-End complexity and therefore steady content growth
- RF Content Growth Drivers
 - 4 x 4 MIMO
 - Carrier Aggregation
 - Complex modulation schemes
 - Introduction of new 5G NR Bands (sub-6 GHz and mm-wave)



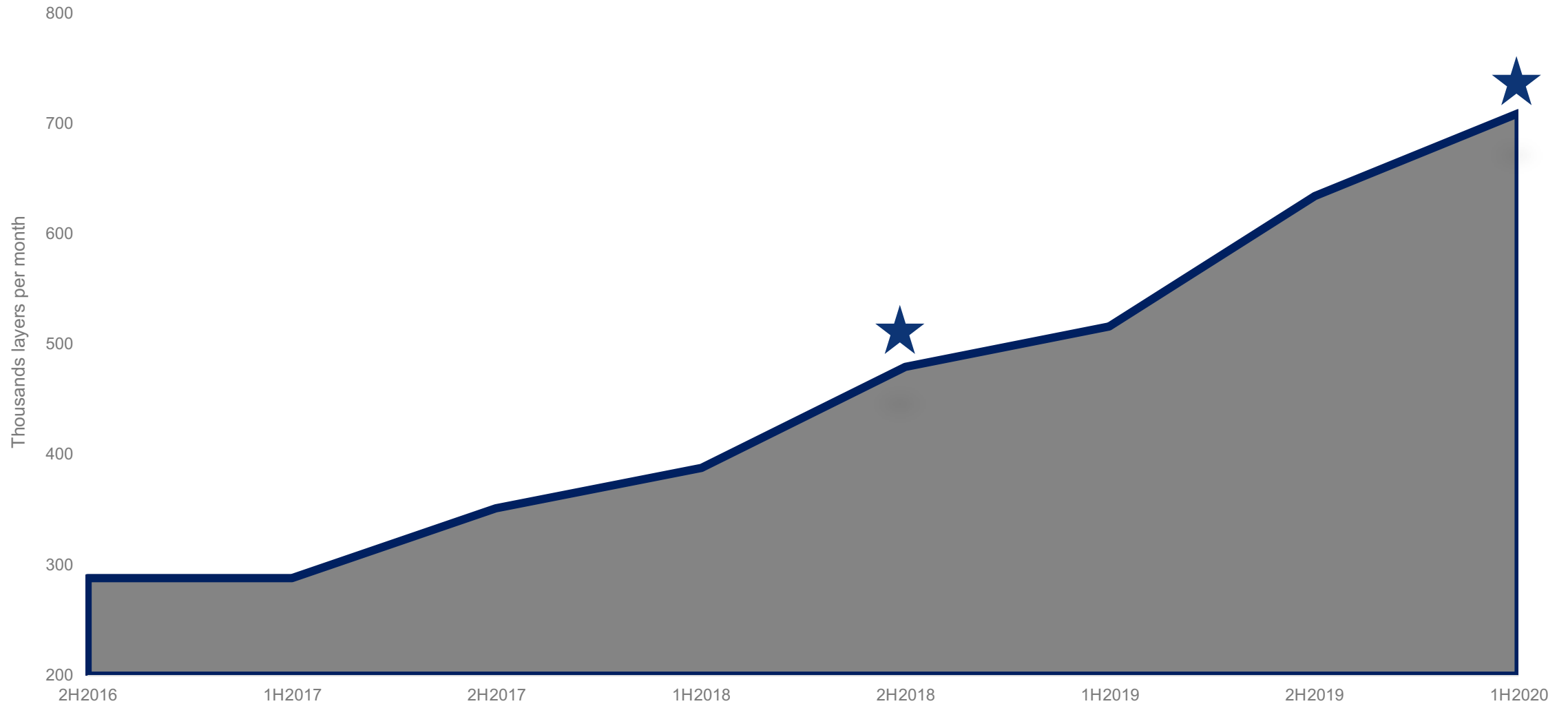
Yole 2018

Protecting and growing high-end share of presently served markets

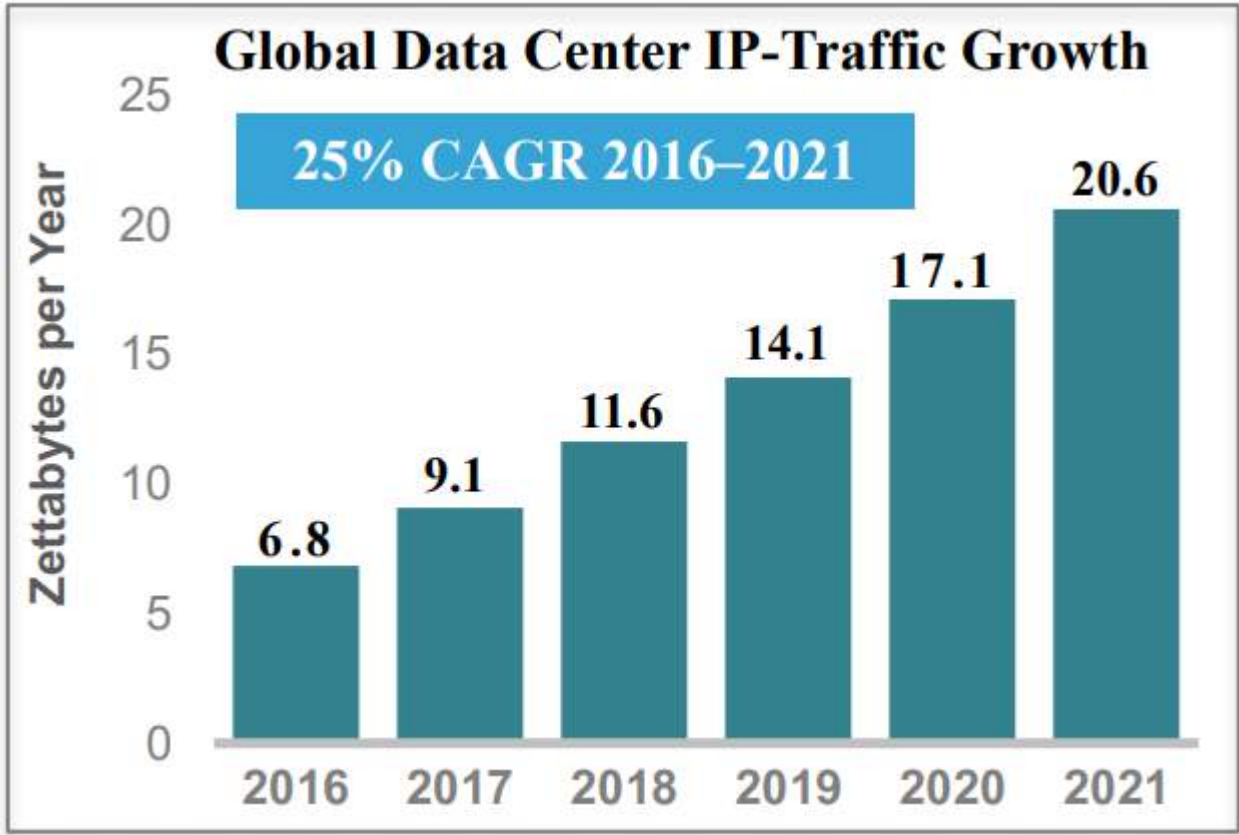
– RF Infrastructure

- SiGe multi generations capacity increase
- CAGR 9,5,3 years: 11%, 12%, 18%
- 2018 – 70% growth, tied to capacity increase

Adding SiGe Capacity

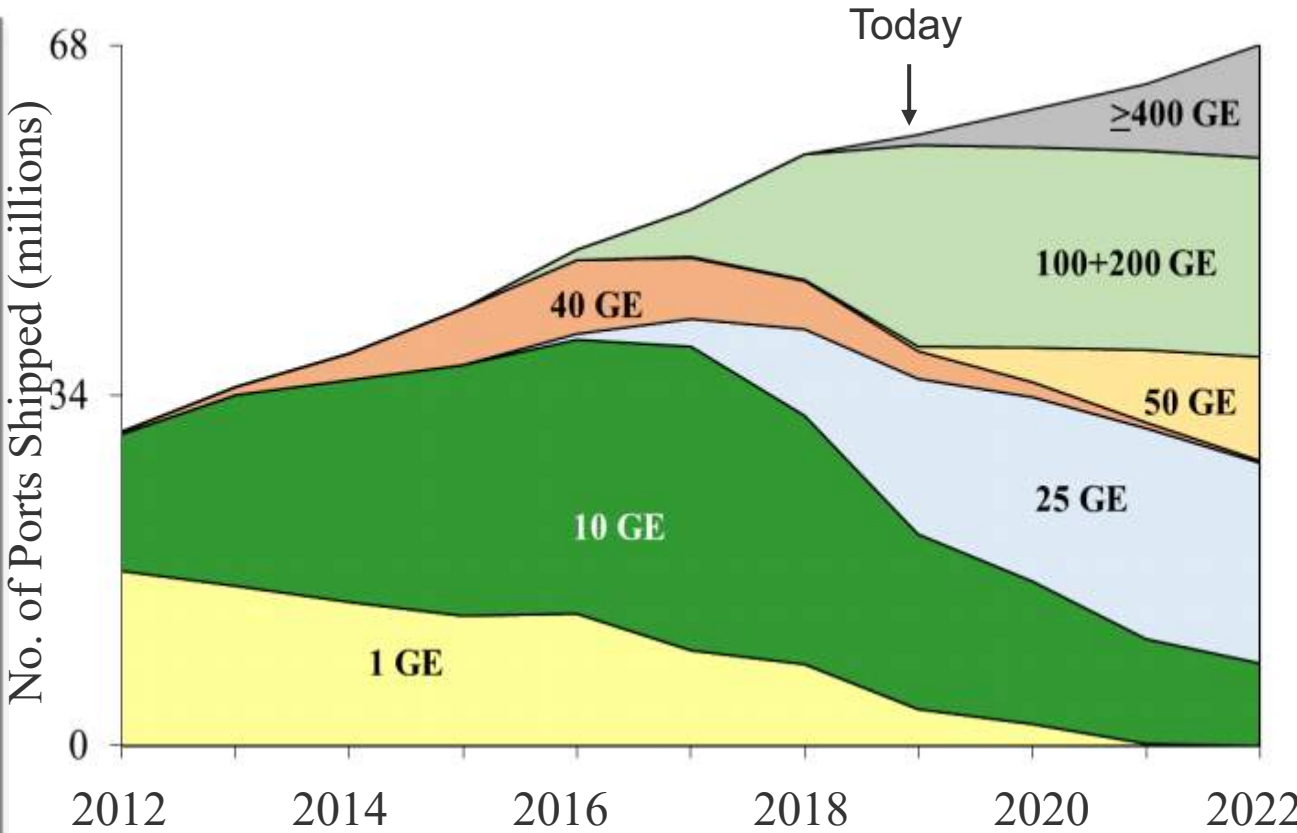


Rapid Internet Traffic Growth is Fueling Demand for Faster Ethernet Speeds



Zettabyte = 10^{21} Bytes

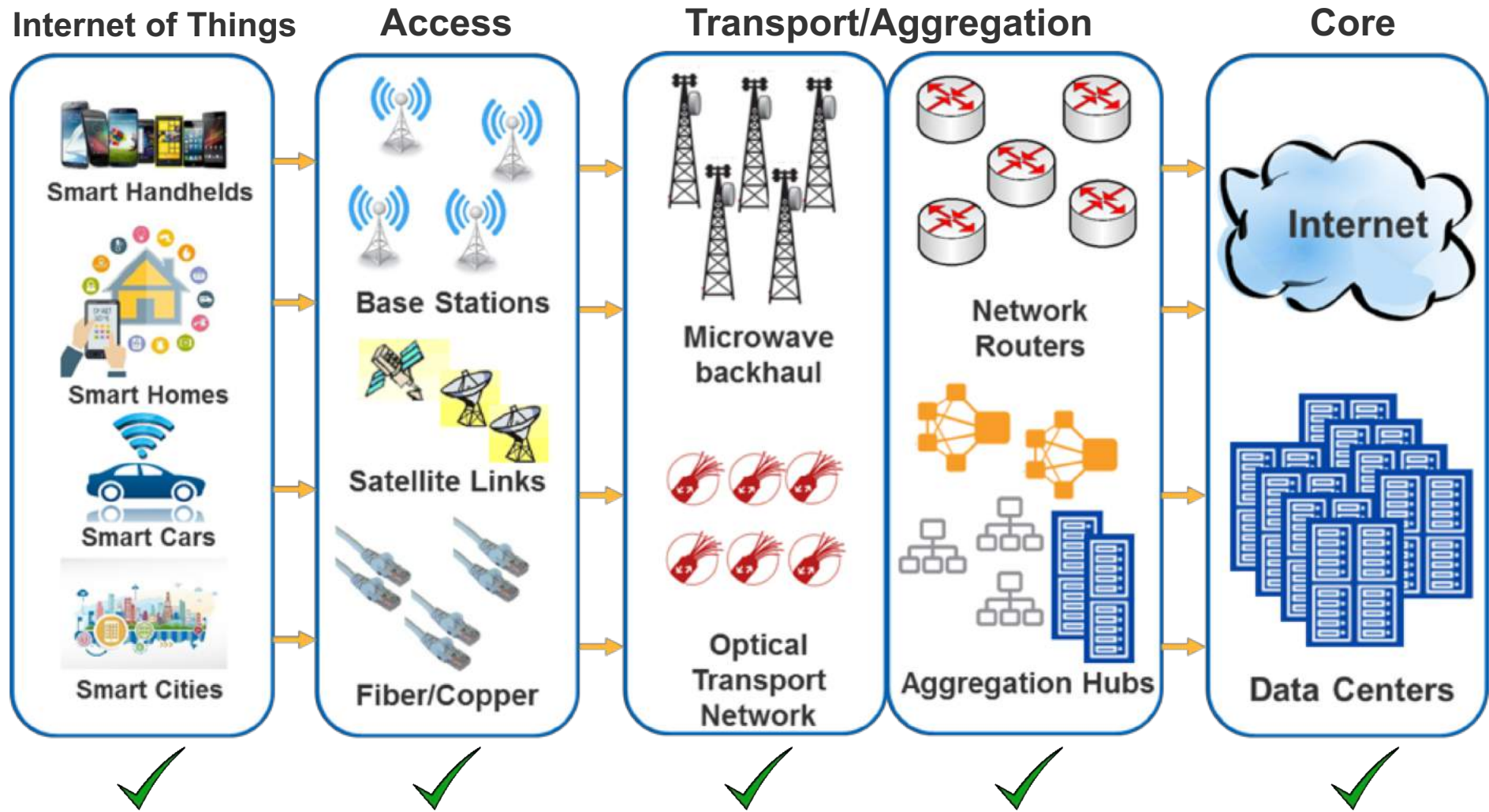
Source: Cisco



Source: Dell'Oro

TowerJazz Solutions: Terabit SiGe BiCMOS and Silicon Photonics Platforms

End-to-End View of Networking Applications Markets



Analog / RF Market opportunity for TowerJazz Across the Entire Networking Value-chain

RF HPA Applications and Technology



Wireline Front-Ends High Performance SiGe

- Optical Fiber Networks
- TIA, LA, Laser Drivers, CDRs
- Photodetectors, Photonics



mmWave High Performance SiGe

- Automotive Radar
- 5G Wireless
- 60GHz WiFi and Backhaul



Wireless Front-Ends RF SOI and SiGe

- Power Amplifiers
- Antenna Switch
- Low Noise Amplifiers



High Performance Analog Complementary BiCMOS

- DSL Line Drivers
- HDD PreAmp for the Cloud
- OpAmps, DAC, ADC

Protecting and growing high-end share of presently served markets

– Power Management

- Best in world up to 16V 300mm 65nm BCD platform
- Incorporating 1.2V to enable high gate count logic to the otherwise best in the world flow
- Adding high voltage offering of up to 140V breakdown to the 0.18um BCD platform
- Adding advanced reprogrammable NVM to our 0.18um BCD platform
- CAGR 9,5,3 years: 29%, 16%, 8%

Computers & Servers



Consumer



Automotive



Industrial



300mm: New Frontier for Advanced RF and Power Management Technologies

- 65nm → 45 nm CMOS platform capabilities enable best-in-class figures-of-merits for next generation technologies
- RFCMOS and SOI platforms
 - High Ft/Fmax
 - Lowest switch Ron-Coff
 - Lowest LNA Noise Figure
 - Advanced passives
 - Dense digital libraries
- Power Management platform
 - Lowest Rdson, Qgd
 - Advanced passives
 - Dense digital libraries
- Best performance at optimal total die cost

TowerJazz Announces RF SOI 65nm Ramp in its 300mm Fab with Best-in-Class Metrics

Secures tens of thousands of wafers per year under long-term partnership with SOITEC, providing guaranteed SOI substrates to support ramp



MIGDAL HAEMEK, Israel and UOZU, Japan, June 27, 2018 — TowerJazz, the global specialty foundry leader, today announced a ramp for its radio frequency silicon-on-insulator (RF SOI) 65nm process in its 300mm Uozu, Japan fab. TowerJazz has signed a contract with long-term partner, SOITEC, a leading semiconductor materials supplier to guarantee a supply of tens of thousands of 300mm SOI silicon wafers, securing wafer prices for the next years and ensuring supply to its customers, despite a very tight SOI wafer market.

With best in class metrics, TowerJazz's 65nm RF SOI process enables the combination of low insertion loss and high power handling RF switches with options for high-performance low-noise amplifiers as well as digital integration. The process can reduce losses in an RF switch improving battery life and boosting data rates in handsets and IoT terminals.



TowerJazz Announces Release of Advanced 300mm 65nm BCD Power Management Platform Addressing the Massive Power Products Market Operating up to 16V

This absolute best-in-class platform creates breakthrough performance and cost advantages in the multi-billion dollar <16V application power management IC market

MIGDAL HAEMEK, Israel, May 2, 2018 — TowerJazz, the global specialty foundry leader, today announced the release of its 300mm 65nm BCD (Bipolar-CMOS-DMOS) process, the most advanced power management platform for up to 16V operation and 24V maximum voltage. This technology is manufactured in TowerJazz's Uozu, Japan facility, with best-in-class quality and cycle time, and is based on the Company's 300mm 65nm automotive qualified flows.

This platform provides significant material competitive advantages for any type of power management chip up to 16V regardless of application, including a wide variety of products such as: PMICs, load switches, DC-DC converters, LED drivers, motor drivers, battery management, analog and digital controllers, and more. IHS Markit Power IC Analyst, Kevin Anderson forecasts a \$9.4 billion available market, which this technology addresses, in 2018 with continual growth.



Automotive

Future: Connected Automated Vehicle



Source: DKS

Autonomous Vehicle

Operates in isolation from other vehicles by using internal sensors



Source: DKS

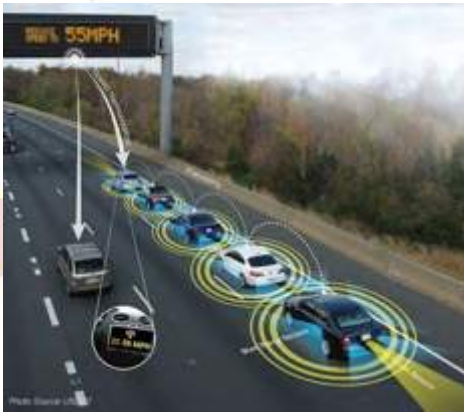
Connected Vehicle

Communicates with nearby vehicles and infrastructure



Connected Automated Vehicle

Leverages autonomous and connected vehicle capabilities



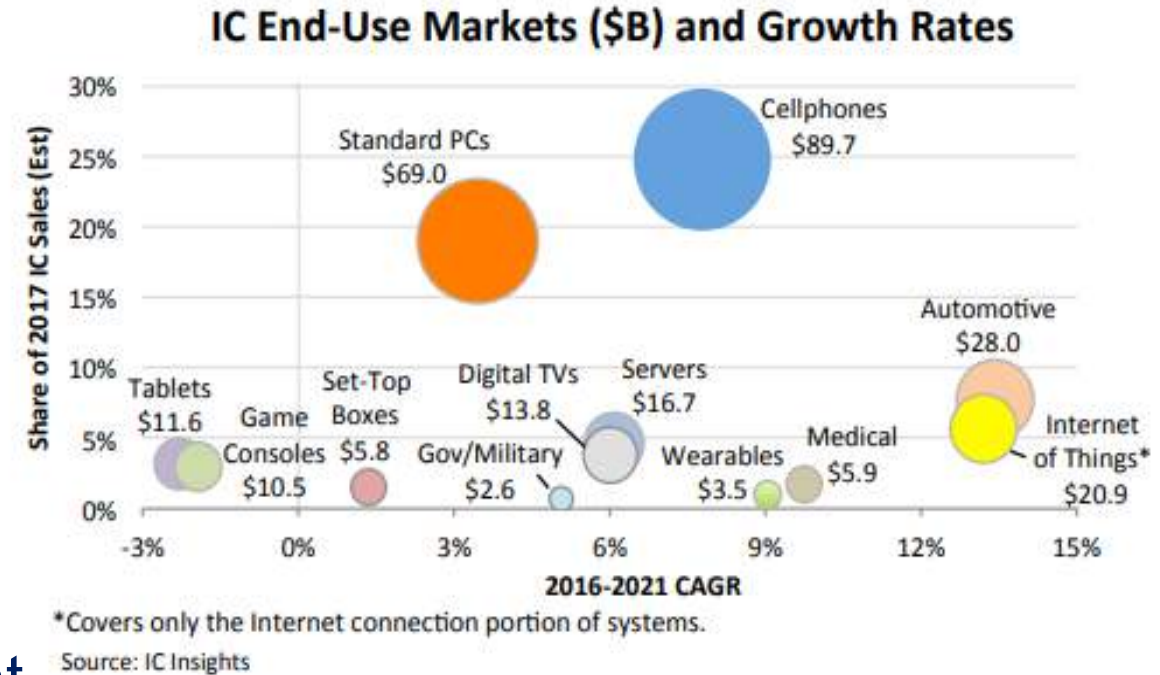
Source: DKS

the source : US DOT ITS-JPO

The Automotive Opportunity

- Automotive is the **fastest growing** and the **third largest** end-use IC market
- Nearly **70%** of Automotive IC content is **Analog***, well aligned to TowerJazz Specialty Analog technologies
 - ✓ **Power** for EV/Hybrid battery management
 - ✓ **RF** for connectivity and Radar
 - ✓ **Sensors** for ADAS
- **Accelerating** pace of innovation is increasing **outsourcing to Foundry**

* Markets and Markets – including in “Analog” Power, RF, Sensors, MCUs and other Analog (excluding Processors, Memory)



Specialty Analog Technologies for Connected Automated Vehicles

Served by TowerJazz

Application

ADAS: Radar, V2X
Automotive Ethernet



Technology

RF & HPA

- RF-SOI
- RF CMOS
- SiGe BiCMOS
- III-V
- MEMS
- Silicon Photonics

ADAS: LiDAR,
Camera



Light Sensing

- CMOS image sensors
- CCDs
- PIN
- ToF: SPADs (LiDAR)
- SWIR image sensors
- Thermal (IR) imaging

Diagnostic, Dynamics,
Comfort & Convenience



Multi-Stimuli Sensing

- Magnetic TMR
- Biometric
- Inertial
- Temperature, Pressure
- Gas/Fluid
- Load, Torque, Speed

EV Battery Management
& Powertrain



HV Power

- BCD (bulk, SOI)
- NVM
- MOSFETs
- IGBT
- GaN
- SiC

Examples of Successful Partnerships with Market Leaders

TowerJazz Announces DENSO Corporation utilized its Advanced 0.18um SiGe Technology to Develop a 24GHz Rear and Side Radar Sensor

Automotive radar market estimated to grow from \$1.4B in 2014 to \$5B by 2023



MIGDAL HAEMEK, Israel, August 14, 2017 — TowerJazz, the global specialty foundry leader, announced today that its 0.18um advanced SiGe technology was used to develop a 24-GHz rear and side radar sensor for DENSO Corporation, a leading supplier of advanced automotive technology, systems and components for major automakers. This sensor, using TowerJazz's submillimeter-wave technology, is used in the Toyota Camry that was released in North America in July and it will help enhance the vehicle safety system.

DENSO's rear and side radar sensor system offers SRR (short range radar), enabled by TowerJazz's advanced SiGe process, which helps alert the driver of vehicles approaching from behind when changing lanes and when reversing. It also helps perform automatic braking when reversing. According to Global Market Insights, the global automotive radar market size is estimated to exceed \$5 billion by 2023. The advent of self-driven cars is anticipated to drive industry growth over the forecast period.



TowerJazz and Crocus Expand Presence in Magnetic Sensors Market through Successful Licensing of Crocus' IP and Volume Manufacturing by TowerJazz

Crocus TMR sensors offer important advantages for multiple applications in IoT, consumer, automotive, industrial and medical sectors



MIGDAL HAEMEK, Israel and SANTA CLARA, Calif., September 27, 2017 — TowerJazz, the global specialty foundry leader, and Crocus, a leading developer of TMR magnetic sensor technology and embedded MRAM, today announce volume manufacturing of Crocus TMR (Tunnel MagnetoResistance) sensors, using TowerJazz's 0.13um CMOS process with a dedicated magnetic module in the Cu BEOL. With Crocus' magnetic process, know-how and IP, and TowerJazz's process technology and integration expertise, Crocus has successfully licensed the TMR technology to an automotive Tier 1 customer, bringing increased business to both companies.

According to a 2016 MarketsandMarkets report, the overall magnetic field sensors market was valued at USD \$2.25 billion in 2015 and is expected to reach \$4.16 billion by 2022, at a CAGR of 8.87% between 2016 and 2022. The growth of this market is driven by the rising demand for MEMS-based sensors across industry verticals, surge in the automotive industry, increasing demand for high-quality sensing devices, and continuous growth in consumer electronics applications.



TowerJazz and Aisin Seiki Announce Mass Production of New Generation Automotive Body Products

Aisin chips produced for car manufacturers using TowerJazz advanced power management technology



MIGDAL HAEMEK, Israel, and KARIYA, Japan, April 12, 2017 — TowerJazz, the global specialty foundry leader, and Aisin Seiki, Co., Ltd., one of the largest worldwide automotive component suppliers, today announce volume production of Aisin's new generation automotive devices for automotive body products for car manufacturers using TowerJazz's power management technology platform.

TowerJazz's power management platform enables industry leading performance for automotive chips by providing: scalable LDMOS and ESD devices for area efficiency, its patented highly-reliable Y-Flash OTP/MTP solutions, as well as buried Zener diode, Schottky diode and other advanced features.

TowerJazz is expanding its power technology availability to its TowerJazz Panasonic Semiconductor Company's (TPSCo's) Japan fab. TowerJazz and Aisin plan to ramp products also in TPSCo's 200mm automotive grade Japan fab, gaining multi-fab manufacturing flexibility.



BrightWay Vision Chooses TowerJazz for the production of its Gated Sensor for Automotive Imaging Applications



Rapidly growing vehicle cameras market expected to reach over US \$1B in 2020, expanding at a CAGR of 11.3% from 2014 to 2020

MIGDAL HAEMEK and HAIFA, Israel, June 22, 2015 — TowerJazz, the global specialty foundry leader, today announced that BrightWay Vision, a provider of groundbreaking vision technology for vehicles, has chosen its TS18IS CMOS image sensor (CIS) technology to manufacture image sensors for its patented automotive cameras, specifically forward looking cameras in vehicles, to allow visibility in all weather conditions. BrightWay Vision has developed BrightEye™, an Advanced Driver Assistance Systems (ADAS) camera for day and night-time forward facing driver assistance functions based on patented gated imaging technology.

According to a new market report published by Transparency Market Research entitled, "Vehicle Cameras Market - Global Industry Analysis, Size, Share, Growth, Trends and Forecast 2014 - 2020," the market was valued at US\$ 595.3 million in 2013 and is expected to reach US\$1.2 billion by 2020, expanding at a CAGR of 11.3% from 2014 to 2020.

Summary

- Strong financial base with continued good net profit and free cash flow, and growing net cash to support organic and in-organic growth initiative and long term financial model.
- We believe to be in the right markets with very strong offerings, aligned to 1st-tier customer partner requirements.

The image features a stylized globe with a grid pattern, set against a deep blue space background with stars. Several white orbital lines with bright star-like nodes at their intersections are visible. The TowerJazz logo is prominently displayed in the upper center, with the website URL below it.

TOWERjazz

www.towerjazz.com