INVESTOR RELATIONS PRESENTATION

SEPTEMBER 2019

20190916_RESONANT_IR_Presentation_MICROCAP_v2.0

SAFE HARBOR STATEMENT

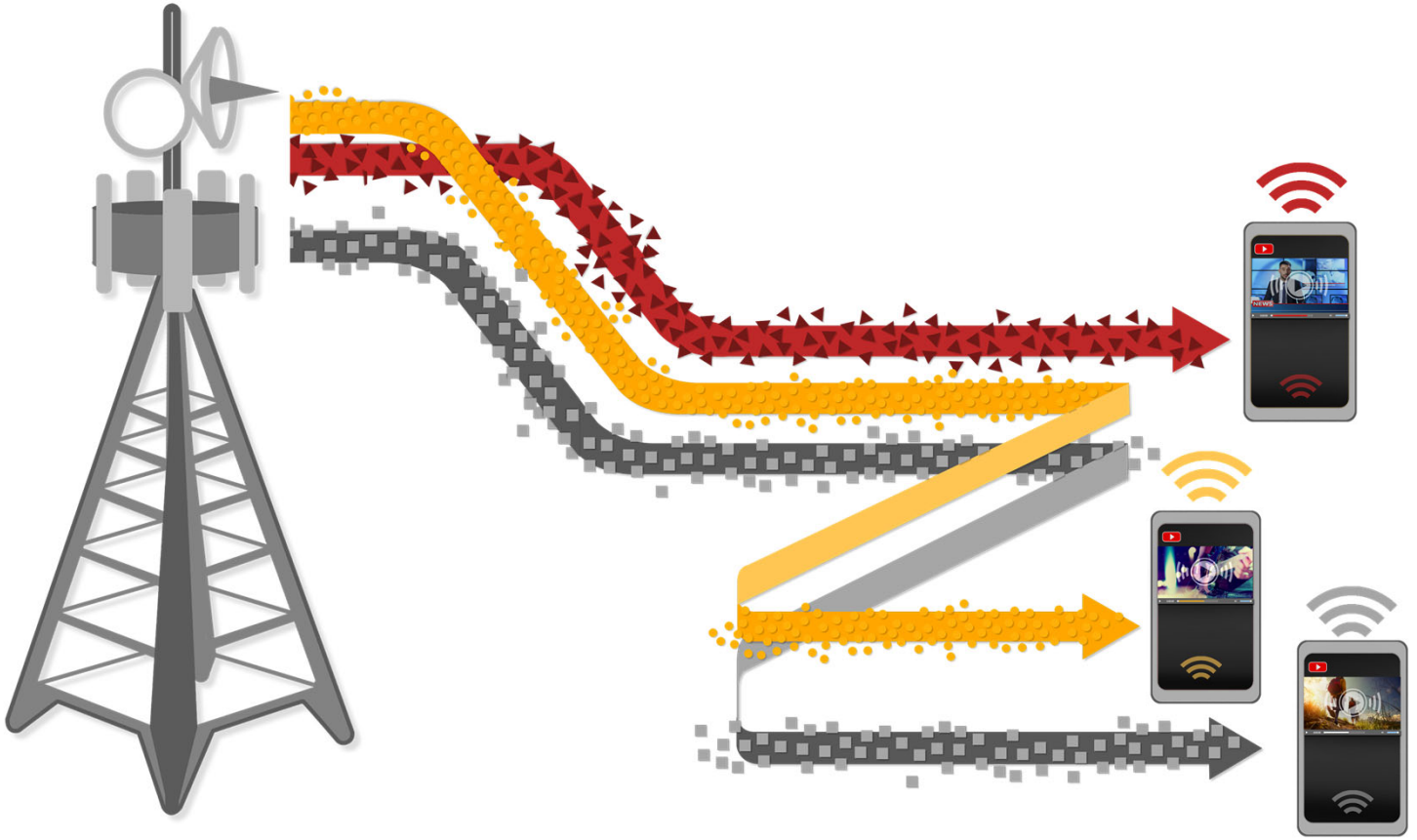
This document contains forward-looking statements. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. Forward-looking statements may address the following subjects among others: the status of filter designs under development, the prospects for licensing filter designs upon completion of development, plans for other filter designs not currently in development, potential customers for our designs, the timing and amount of future royalty streams, the expected duration of our capital resources, our hiring plans, the impact of our designs on the mobile device market, and our business strategy. Forward-looking statements are inherently subject to risks and uncertainties which could cause actual results to differ materially from those in the forward-looking statements, including, without limitation, the following: our limited operating history; our ability to complete designs that meet customer specifications; the ability of our customers (or their manufacturers) to fabricate our designs in commercial quantities; the ability of our customers to sell products incorporating our designs to OEMs; our dependence on a small number of customers; the ability of our designs to significantly lower costs as compared to other designs and solutions; the risk that the intense competition and rapid technological change in our industry renders our designs less useful or obsolete; our ability to find, recruit and retain the highly skilled personnel required for our design process in sufficient numbers to support our growth; our ability to manage growth; and general market, economic and business conditions. Additional factors that could cause actual results to differ materially from those anticipated by our forward-looking statements are under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our most recent Annual Report (Form 10-K) or Quarterly Report (Form 10-Q) filed with the Securities and Exchange Commission. Forward-looking statements are made as of the date of this document, and we expressly disclaim any obligation or undertaking to update forward-looking statements.

We may refer to information regarding potential markets for products and other industry data. We believe that all such information has been obtained from reliable sources that are customarily relied upon by companies in our industry. However, we have not independently verified any such information.

Corporate Story: Resonant Overview

View our full corporate video at https://ir.resonant.com/videos

Next Generation Phones Are Dependent upon Increasing Demand for Bandwidth



RF Front End (RFFE) Ensures Voice, Data and Video Calls Are Delivered Correctly

Resonant is transforming the way RFFEs are Designed and Delivered

Summary of Company Stats

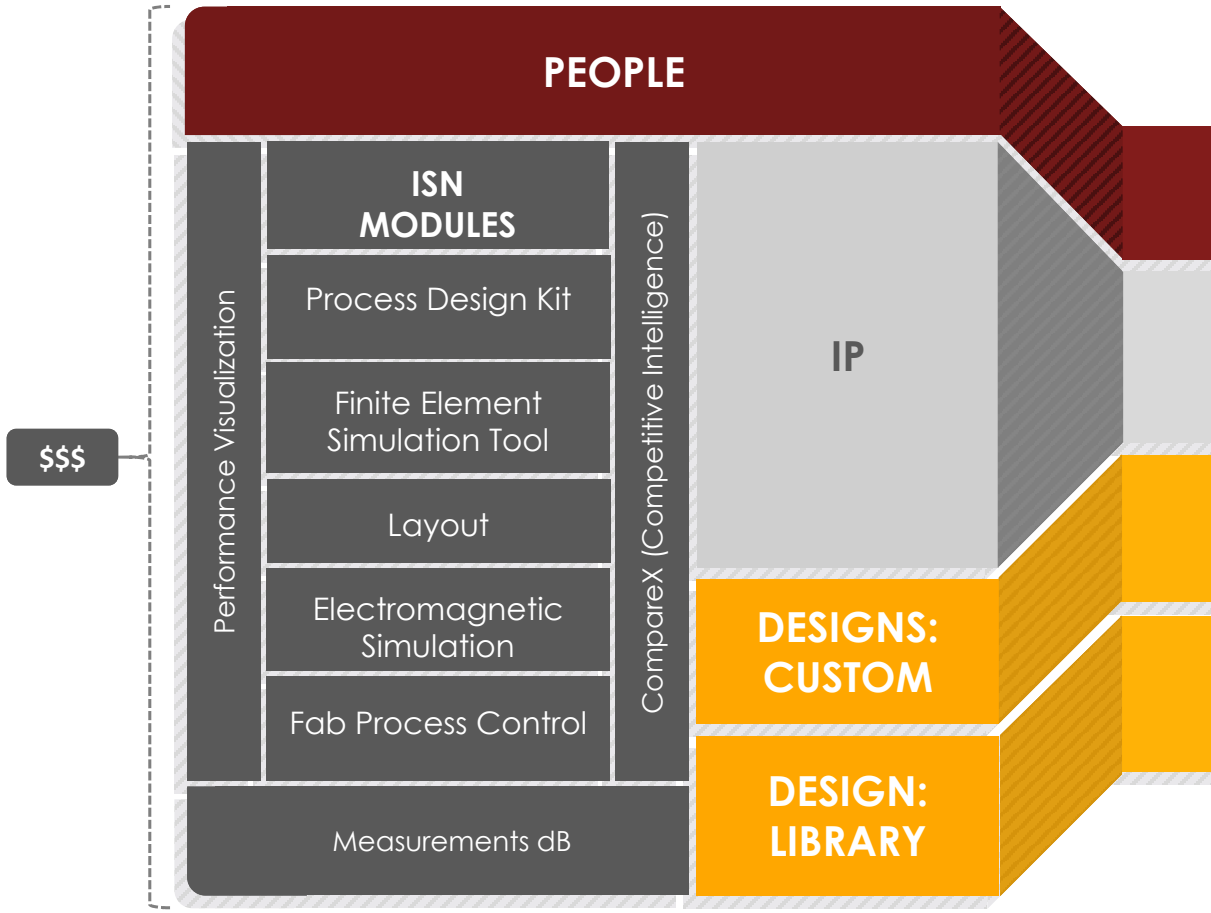
Corporate Overview

Founded:	May 2012	**Business Model:**	Licensing-Per Unit Royalty
IPO:	May 2014	**Customers:**	12 customers
Employees:	70+ employees	**Foundry Partners:**	7 partners
Cash, cash equivalents & investments[1]:	$10.5 M *as of June 30, 2019*	**Market Validation:**	80 devices contracted
		Patents:	>175 filed or issued

1. Excludes $10 million private placement announced August 6, 2019

RESONANT IS THE ONLY PURE PLAY SOFTWARE & IP GROWTH OPPORTUNITY FOCUSED ON MOBILE FILTER MARKET

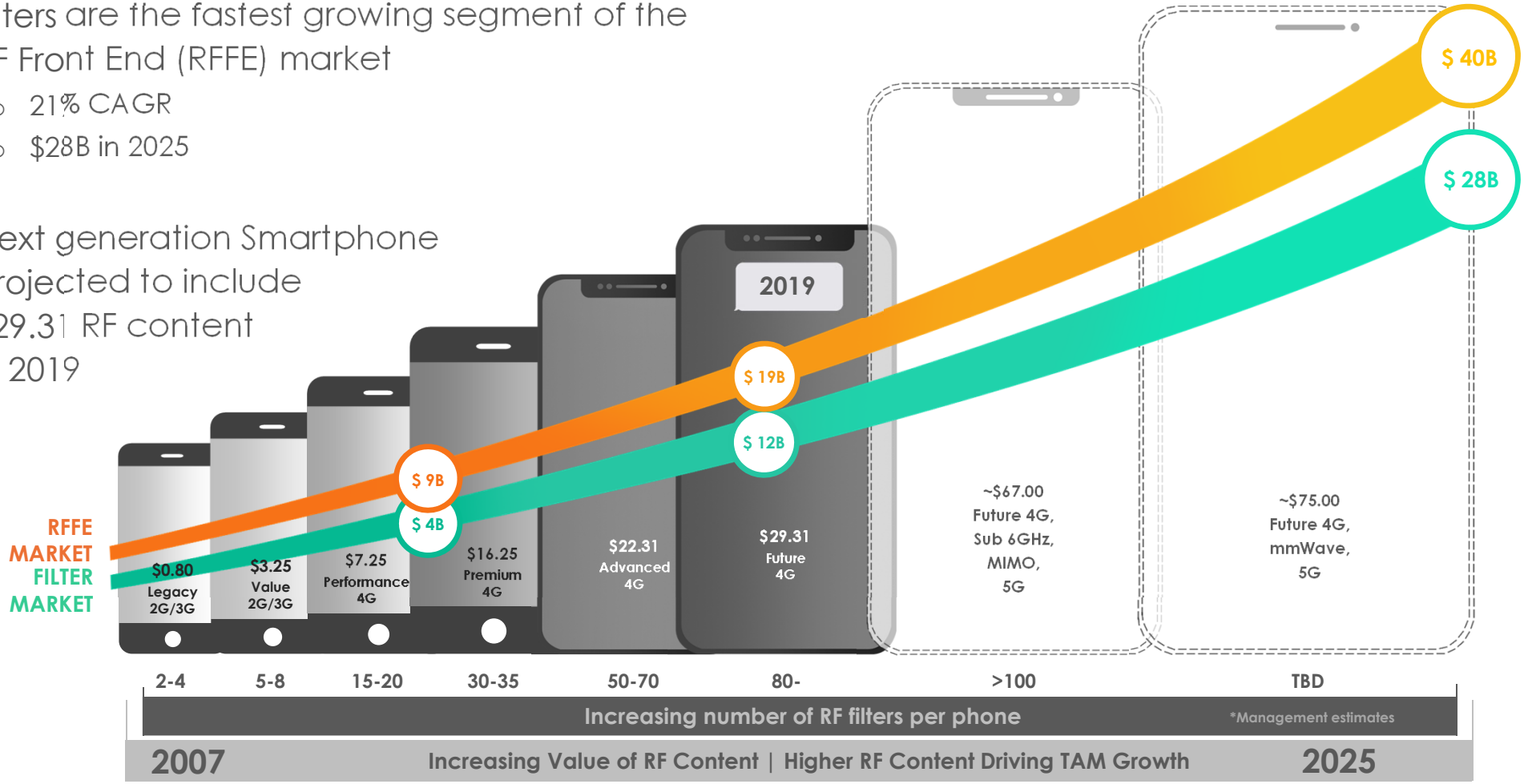
- **Filter market** is $12B today **growing to $28B** by 2025
  - Market will require **>3x number of filters**
  - **5G** is ramping
  - Filter companies are **constrained** by designer availability
- **Infinite Synthesized Networks® (ISN®) software** creates designs faster, better, and cheaper
  - Design efficiency is up to **5x greater** than other filter designers
  - Design turns **reduced** by up to **10x**
- **IP and Trade Secrets** creating core value
  - Latest development **targeting 5G**
- **Business model**
  - **Licensing** based on filter sales



Sources: Yole Developpement

RF Front End Enables Mobile Phone Growth

- Filters are the fastest growing segment of the RF Front End (RFFE) market
  - 21% CAGR
  - $28B in 2025
- Next generation Smartphone projected to include $29.31 RF content in 2019



Sources: Yole Developpement, Navian, Barclays, Management Estimates

5G's Impact on the RF Front End – Design Capacity

Design capacity must increase by up to 8x by 2025 to maintain share

Design capacity constrains market[1]

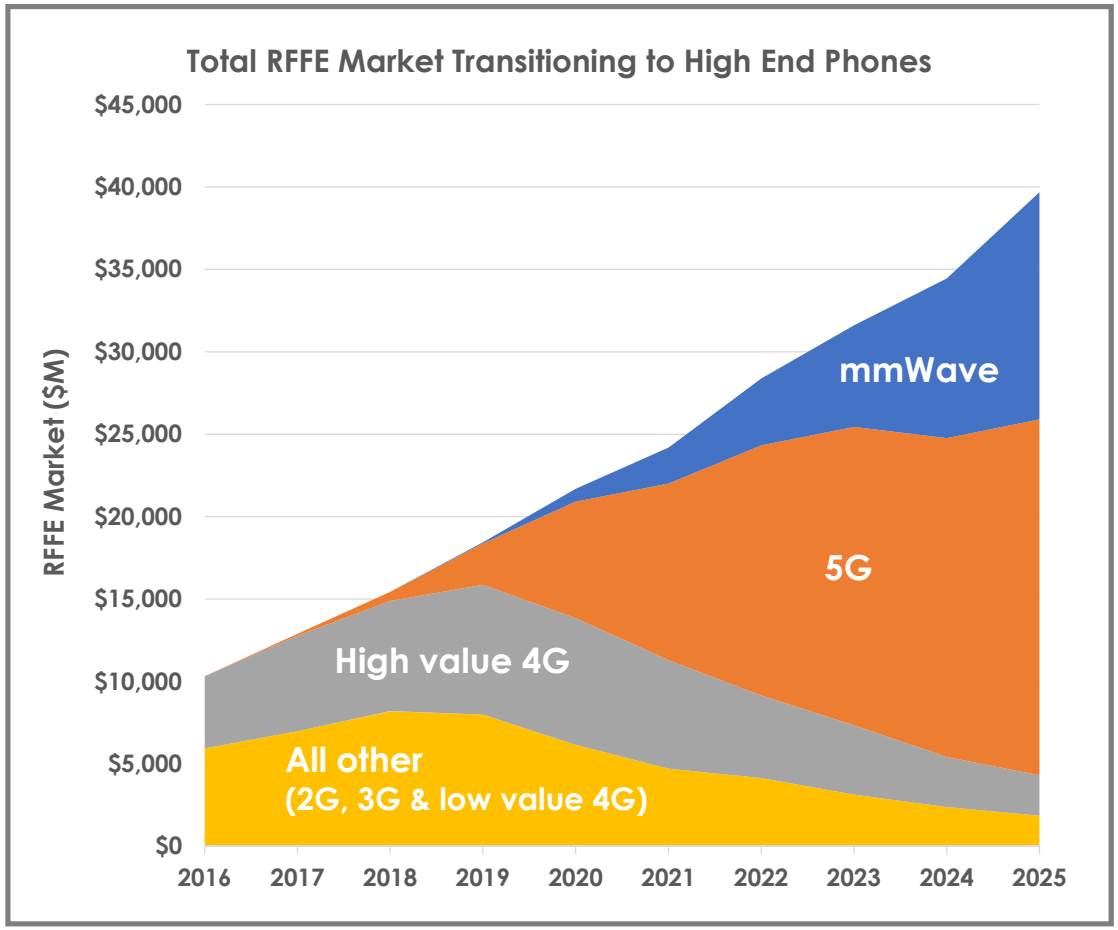
- Resonant is positioned to support entire RF spectrum with ISN platform; improving design efficiency by up to 5x

Legacy design methodology increases costs and slows development by utilizing fab turns to deliver designs

- Resonant's ISN platform enables fewer turns (up to 1-2) to deliver functional designs

High value 4G continues to be meaningful

- Resonant's Filter IP Standard Library of products enables new customer and suppliers to enter market



Sources: Yole Developpement, Management Estimates

1. Design capacity increase assumes for customer targeting current share in new phone market which has 3-4x greater filters per phone

ISN®: Next Generation Design Platform

RESONANT
FUNDAMENTAL | RIGOROUS | SCALABLE | DEFENDABLE

CURRENT FILTER DESIGN
UTILIZED BY MOST MANUFACTURERS

Image Design
Acoustic Wave Ladder

Modern Filter Theory

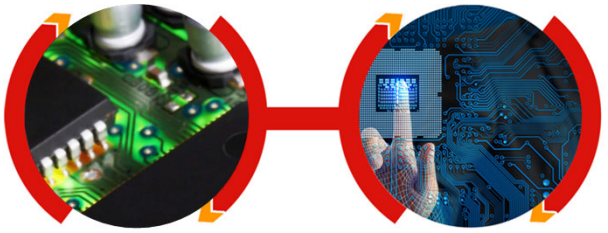
Coupling of Modes
Model | COM
Empirical Optimization & Simulation

Aggregated Physical Properties
Velocity of Surface Waves
Reflectivity of Surface Waves

1900s — 1950s — 2000s

Acoustic Wave Network Synthesis

RF Circuit Models — **Optimization**



Fundamental Physical Models — **Simulation**

RF Circuits
Inductance | Voltage
→ RF Circuit Integration

Fundamental Physical Properties
Density | Dimensions
→ Fab Integration

Today

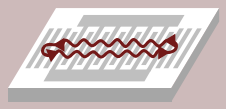
Current filter design process:
- Many iterations: long / expensive
- Limited design space: Bandwidth, power
- Limited to "captive" fab

ISN Value:
Order of Magnitude Improvement in:
- Development time
- Cost

ISN® Impacts Design Efficiencies for All Filter Technologies

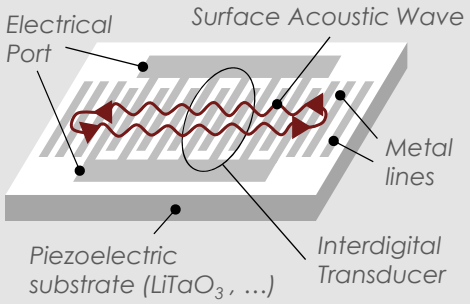
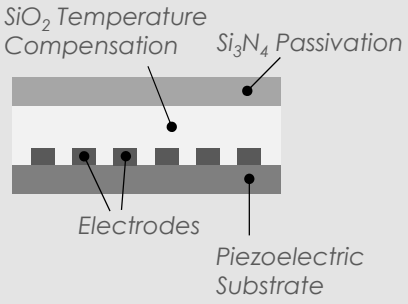
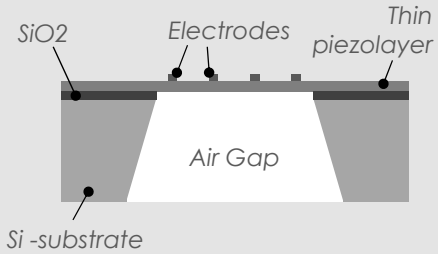
Development of Fully Integrated SaaS-based Infinite Synthesized Network

2012 — 2016 — 2017 — 2018 — 2019 — 2020 — 2021

		% of Market Today	% of Market 2025
BAW			
	**IP Blocks**: XBAR™	24%	54%
	Software Enhancements: Layers II		
TC-SAW Multi-Layer			
	**IP Blocks**: ODSR (Optimized Design Space Resonator)	3%	7%
	Software Enhancements: Layers / PMTx™		
TC-SAW Bonded Wafer			
	**IP Blocks**: Plate Mode Engineered Device		
	Software Enhancements: FEMSAW / Layers		
SAW			
	**IP Blocks**: Power Durability / Isolation	73%	37%
	Software Enhancements: FEMSAW / PMTx™		

Sources: Yole Developpement, Navian

Acoustic Wave Filter Technologies

SAW	TC-SAW	FBAR	BAW – XBAR™
Surface Acoustic Wave	***Temperature-Compensated SAW***	***Bulk Acoustic Wave***	***Bulk Acoustic Wave***
*Acoustic wave propagates in a **lateral** direction*	*Acoustic wave propagates in a **lateral** direction*	*Acoustic wave propagates in a vertical direction*	*Acoustic wave propagates in a **vertical** direction*
			
APPLICATIONS			
3G & 4G	**4G**	**4G**	**4G & 5G**
COST			
Simple, low cost	Relatively low cost process	Complex, high cost process	Leverages standard industry process
PROCESS STEPS			
			
PERFORMANCE			
Best performance requires precise process control and improved design	Improves temperature stability	Low loss and high rejection	Best in class performance Ultra-wideband

5G's Impact on the RF Front End – Technology

5G demands larger bandwidth that is only available at higher frequency

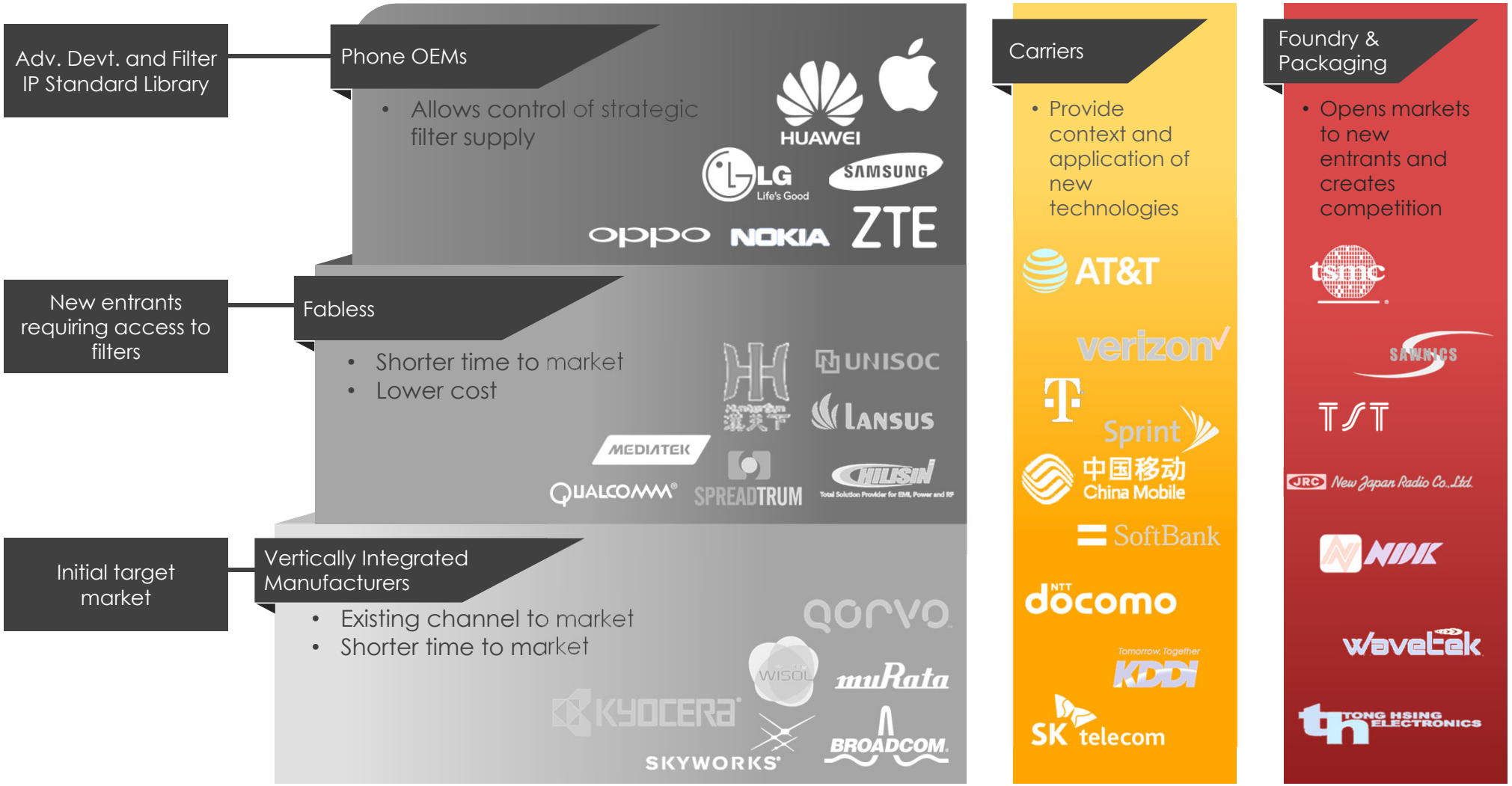
5G Requirements	XBAR
Large bandwidth *100's of MHz vs. 10's of MHz*	✓
High frequency (3GHz - 80GHz) *Only frequencies where large bandwidths are available*	✓
Power handling *High frequency = less propagation* *Overcome with higher power to increase coverage*	✓
High quality factor, Q, of resonator structure *Determines rejection and loss of the filter* *Particularly challenging at high frequency*	✓

Based upon simulation results
Initial measured verification in process

What is XBAR?

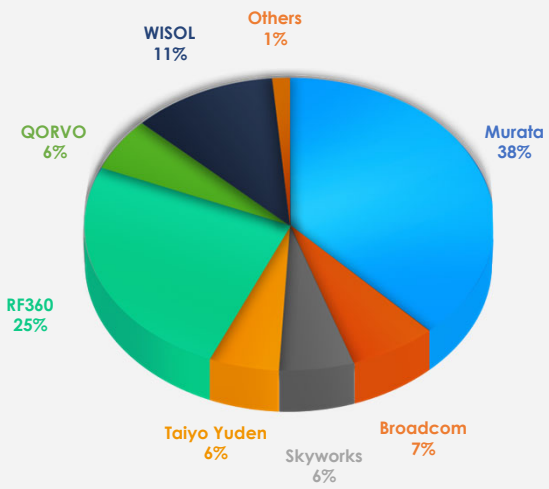
- Proprietary resonator structure based on existing process technologies developed using ISN
  - IP/ XBAR based library products for 5G

RESONANT IS TARGETING ENTIRE FILTER MARKET

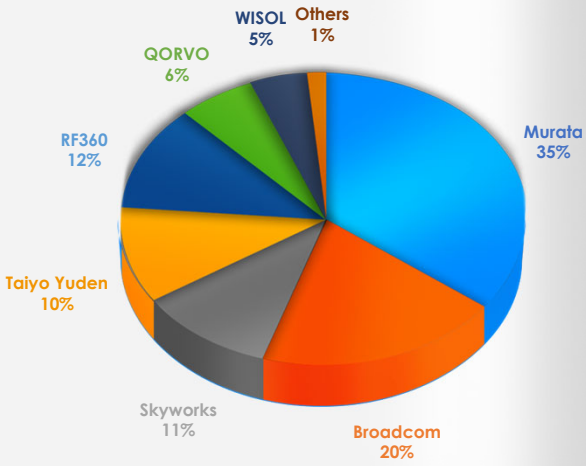


FOCUS ON THE LARGEST PLAYERS IN THE MARKET

FILTER

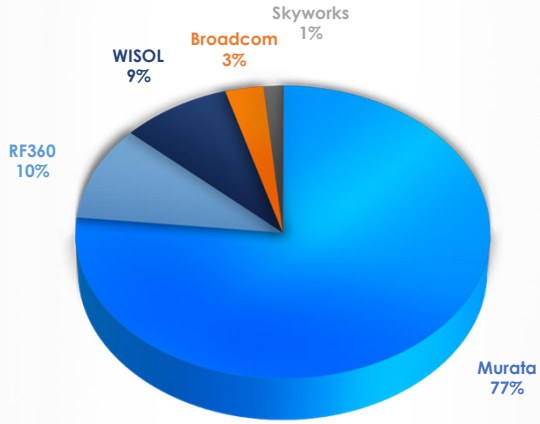


DUPLEXER



- 5 companies make up 80% of the filter and duplexer markets

FEMiD
(Front-End Module With Integrated Duplexers

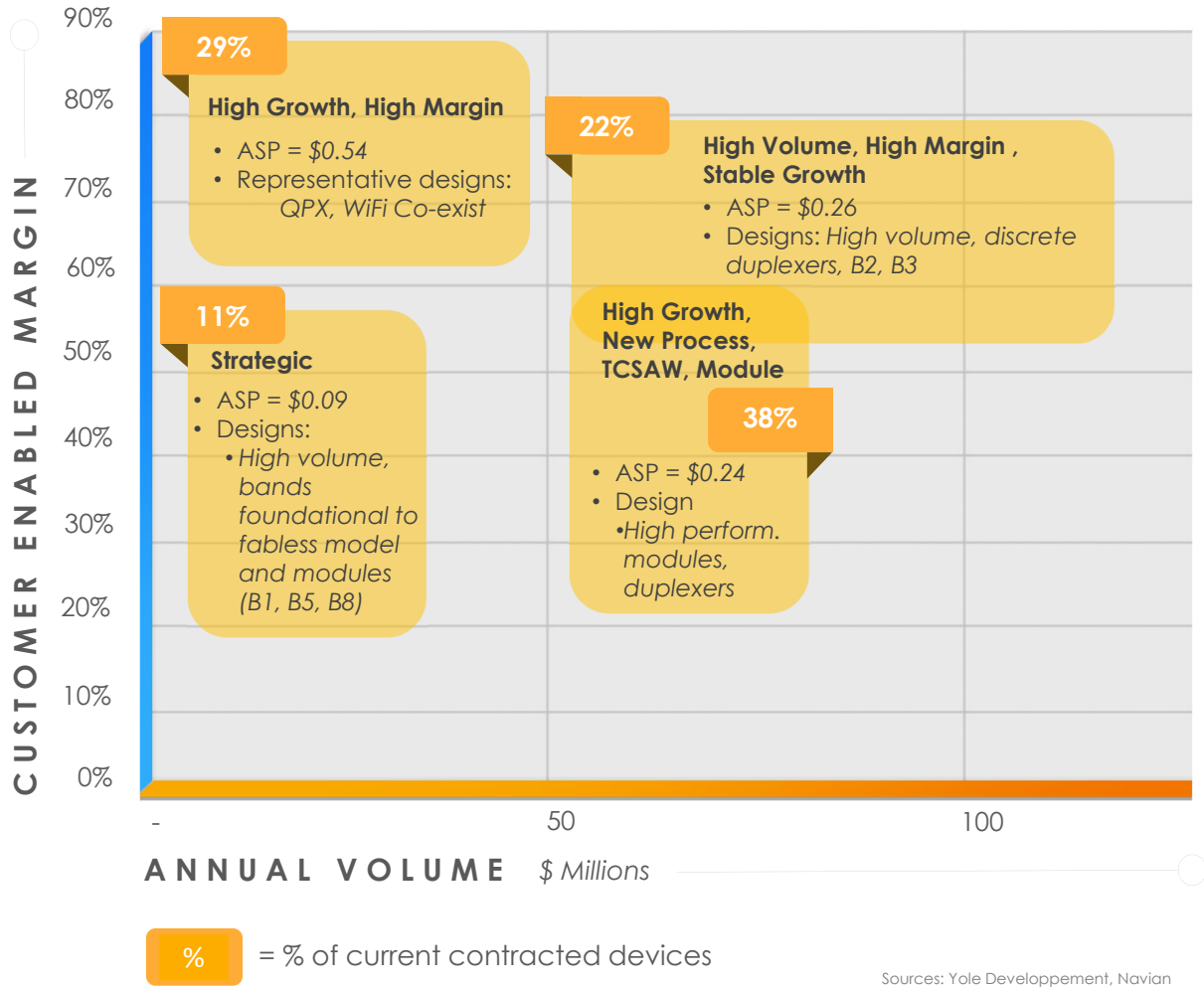


- Module growth has been shifting due to a number of macro economic events that have happened in the past year

Sources: Navian 2018

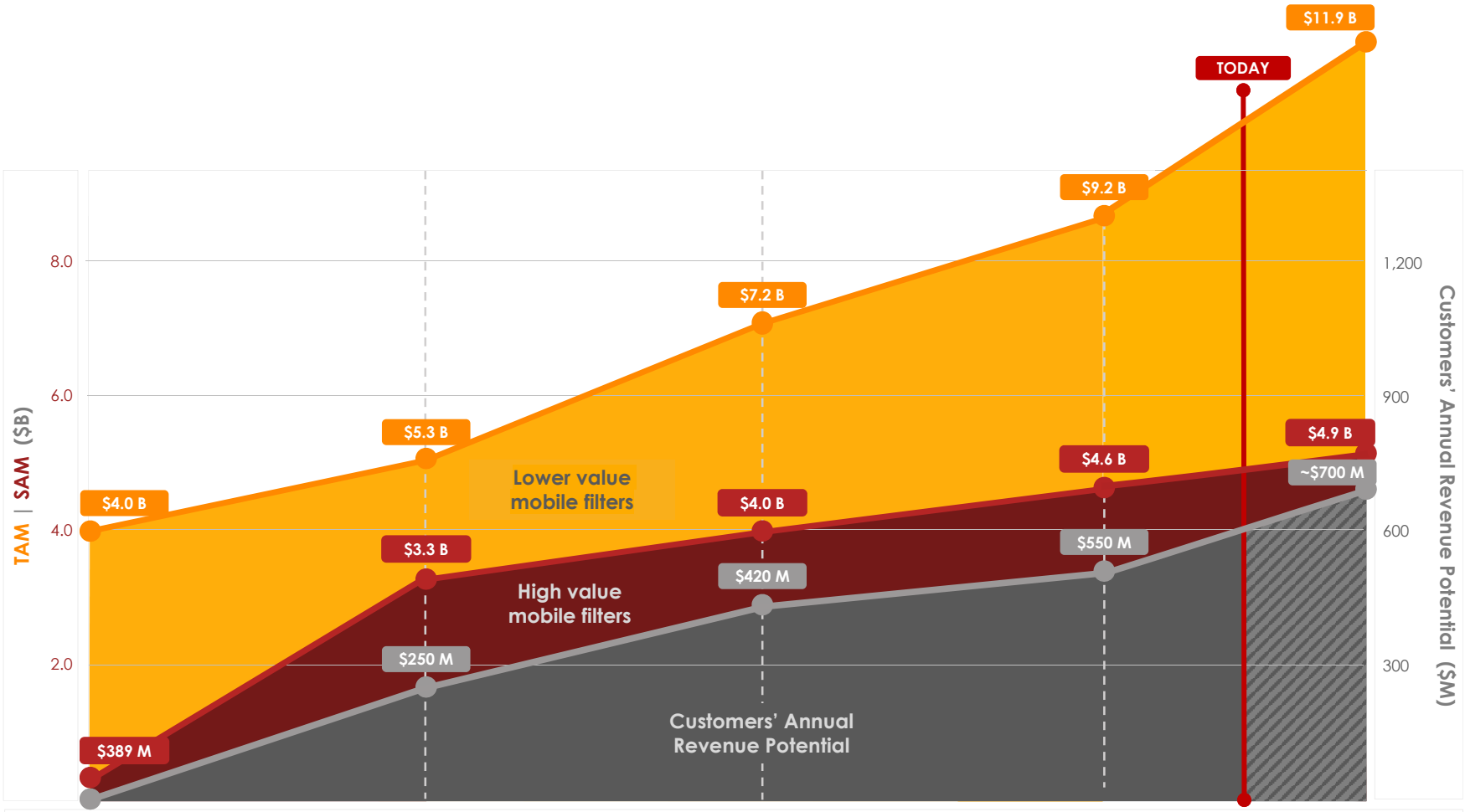
RESONANT IS TARGETING HIGH ASP & HIGH GROWTH SEGMENTS

- **>20 designs accepted** by our customers
- **>10 products shipped** generating royalty revenue
- Contracted **royalty rates** generally in the range of 8% - 15%
- Targeting 30% - 70% success rate of contracted designs resulting in royalty
- Time from contract to customer acceptance varies based on technology, ranges between 6 and 18 months



Sources: Yole Developpement, Navian

Potential Customer Annual Revenue Enabled by Resonant

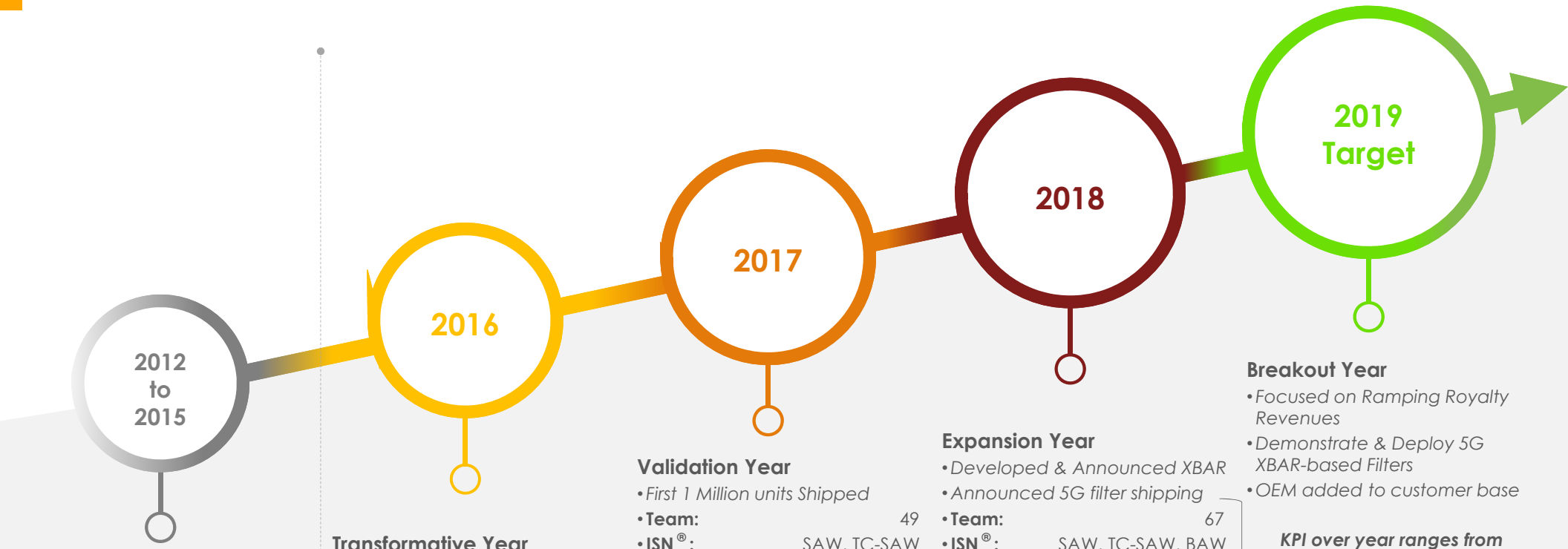


YEARS	2015 YE	2016 YE	2017 YE	2018 YE	2019 YE
DEVICES CONTRACTED		>25	>50	>70	*Average over year KPI growth >40%*
REVENUE % OF HIGH VALUE MARKET		7.5%	10.6%	12.0%	*Average over year KPI growth >40%*

Customer Revenue Potential estimated using Navian published data, adjusted to reflect contracted customer data

Source: Navian and Yole Developpement

2019 Builds on Momentum



Foundation

- *Founded - > IPO*
- **Team:** 3 - 27
- **ISN®:** Launched
- **Customers:** 1
- **Devices Contracted:** 1
- **Mkt Val Cont's:** $0

Transformative Year

- *Acquired GVR*
- **Team:** 37
- **ISN®:** SAW
- **ISN Design Efficiency[1]:** 3.0
- **Customers:** 6
- **Devices Contracted:** >25
- **Mkt Val Cont's:** $250M

Validation Year

- *First 1 Million units Shipped*
- **Team:** 49
- **ISN®:** SAW, TC-SAW
- **Design Efficiency:** 4.5
- **Customers:** 8
- **Foundry & Pack Partners:** 5
- **Devices Contracted:** >50
- **Mkt Val Cont's:** $420M
- **Dev Shipped for RR:** 4
- **Dev Acc by Customers[2]:** >10

Expansion Year

- *Developed & Announced XBAR*
- *Announced 5G filter shipping*
- **Team:** 67
- **ISN®:** SAW, TC-SAW, BAW
- **Design Efficiency:** 6.8
- **Customers:** 11
- **Foundry & Pack Partners:** 7
- **Devices Contracted:** >70
- **Mkt Val Cont's:** $550M
- **Dev Shipped for RR:** >10
- **Dev Acc by Customers:** >20

Breakout Year

- *Focused on Ramping Royalty Revenues*
- *Demonstrate & Deploy 5G XBAR-based Filters*
- *OEM added to customer base*

KPI over year ranges from 14-100%

Average over year growth >40%

Sources: Yole Developpement, Navian

1. Design efficiency is the number ISN ready designs one designer can produce in a year. ISN ready designs use a qualified FAB process with industry competitive performance. A qualified FAB process includes confirmed performance with the FAB in the band
2. Device accepted by customer defined as customer has passed device handset testing

Executive Team

George B. Holmes

Chairman
& CEO

30+ years leadership in sales & marketing and management

energous
agere systems
ORTEL A DIVISION OF EMCORE
SOLARBRIDGE TECHNOLOGIES
Symmetricom

Marty McDermut

CFO

30+ years in financial and accounting management; CPA

applied micro
VITESSE

Bob Hammond

CTO
& Co-founder

20+ years as Founder and CTO of STI;
Physics Ph.D. Caltech

STI SUPERCONDUCTOR TECHNOLOGIES INC.
Los Alamos NATIONAL LABORATORY
Caltech

Neal Fenzi

Executive Vice President of Engineering
& Co-Founder

20+ years in engineering, operations and marketing positions at STI; BSEE

STI SUPERCONDUCTOR TECHNOLOGIES INC.
HUGHES SPACE & COMMUNICATIONS

Independent Board Members

Michael Fox	Rubén Caballero	Alan Howe	Jack Jacobs	Josh Jacobs	Jean Rankin	Bob Tirva
Lead Independent Director	Independent Director	Independent Director	Independent Director	Independent Director	Independent Director	Independent Director
Financial expertise in capital markets, shareholder interests and strategy	Extensive expertise and leadership in R&D, prototyping, designing, integrating, testing, manufacturing and shipping millions of world class consumer electronics products and technologies	Operational, corporate finance, business devt. and leadership exp. Strategic in-depth knowledge of the wireless, telecom, high technology and software industries	Public company, corporate governance and leadership experience	Extensive experience commercializing technologies	Governance, compliance, regulatory and licensing expertise within the semiconductor industry	Extensive corporate and managerial finance experience in IT & services and semiconductor industries
PARK CITY CAPITAL J.P.Morgan	TROPIAN	BROADBAND Initiatives, LLC COVAD TELETRAC NAVMAN Sprint	MSNBC FITZROY BankersTrust.	MAVEN kik· OmnicomMediaGroup INVOCA	Lucent Technologies LSI	INTERMEDIA Dropbox BROADCOM.

Summary Financial Information

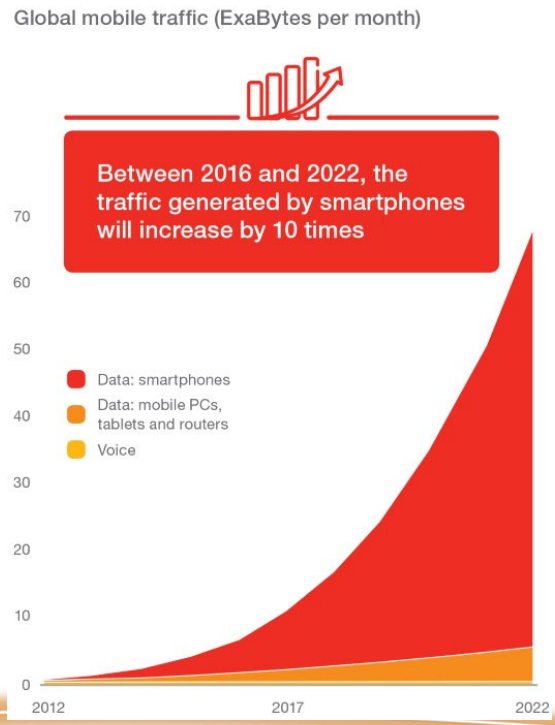
Jun 30, 2019		
		($ in M)
Cash, cash equivalents & investments[1]	$	10.5
Other current assets		0.4
Long-term assets		7.1
Total assets	$	18.0
Liabilities	$	2.9
Operating lease liabilities		3.0
Stockholders' equity		12.1
Total liabilities and stockholders' equity	$	18.0
Shares outstanding		28.2 M

no debt

1. Excludes $10 million private placement announced August 6, 2019

SUMMARY

- 2019 Momentum
  - Cash, cash equivalents & investments $10.5M[1] *(Jun 30, 2019)*
  - More than 10 devices have shipped for royalty revenue; devices are in distribution and sampling to OEM's
  - Greater than 20 devices accepted by customers; acceptance criteria include handset testing
  - Complete ISN software suite: ISN supports SAW, TC-SAW & BAW with new cutting-edge IP focused on 5G – XBAR resonators
- Market continues to grow, 21% CAGR; RF front-end industry is undergoing dramatic increases in filter demand and complexity for bandwidth driven by:
  - Band Proliferation
  - Carrier Aggregation
  - 5G
- Resonant is a strategically positioned pure play equipped to take advantage of 5G
  - As the market continues to commoditize, working with Resonant and its industry-changing ISN platform will enable companies to maintain market share and remain competitive
  - Resonant's new BAW / XBAR technology for ultra-wide, instantaneous bandwidth has the potential to become the technology standard against which all others are measured



Sources: Yole Developpement, Cisco

1. Excludes $10 million private placement announced August 6, 2019


RESONANT®