A Journey Through TIme

November 13, 2014

TI Retiree Luncheon

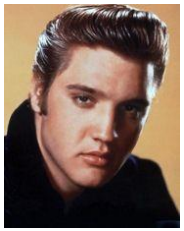
Venu Menon

Vice President, Analog Technology Development

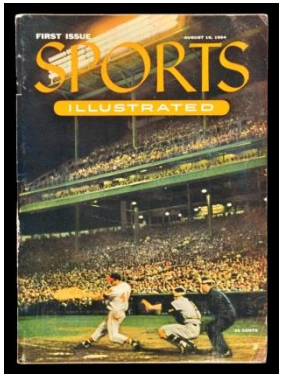
60 years ago, a milestone year

1954

1954 – A few highlights



- Elvis Presley records his debut single "That's All Right“
- Nationwide test of Salk anti-polio vaccine begins
- "CBS Morning Show" premieres with Walter Cronkite & Jack Paar
- First shopping mall opens in Southfield, Michigan
- Audrey Hepburn wins best actress at the 26th Academy Awards
- Bell Labs announces first solar battery
- Brown vs. Board of Education
- The BBC broadcasts its first television news bulletin.
- "Sports Illustrated" magazine begins publishing
- Humane Society forms



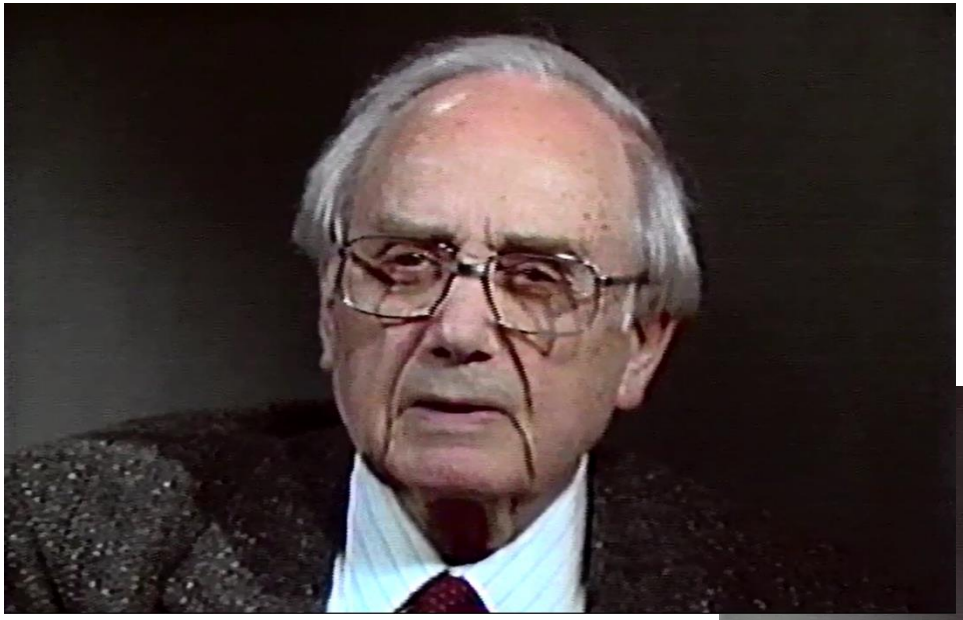
1954 was a breakout year for TI

- Production of high frequency germanium transistors begin

- Regency Transistor Radio introduced

- And, one more thing . . .

Dr. Teal and Dr. Adcock introduced the Si Transistor

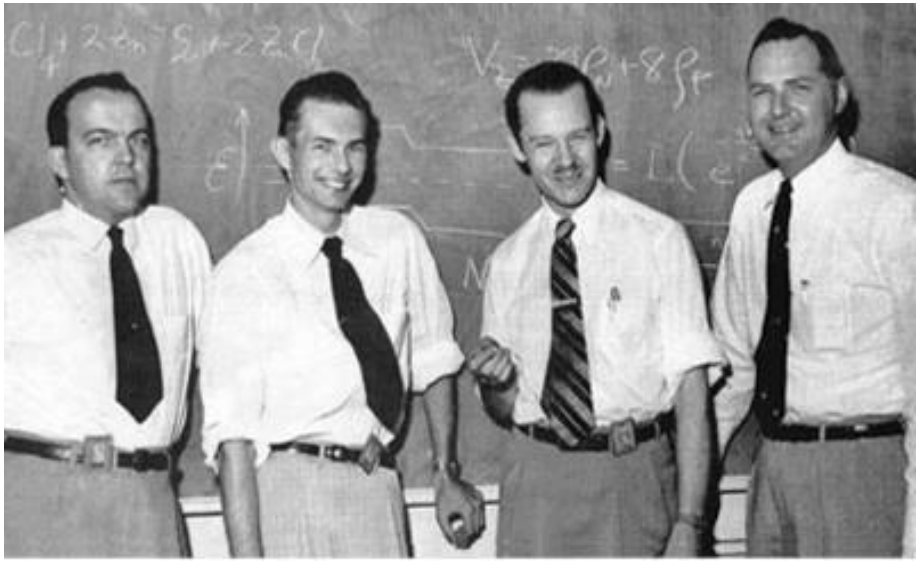


60th Anniversary of the Silicon Transistor

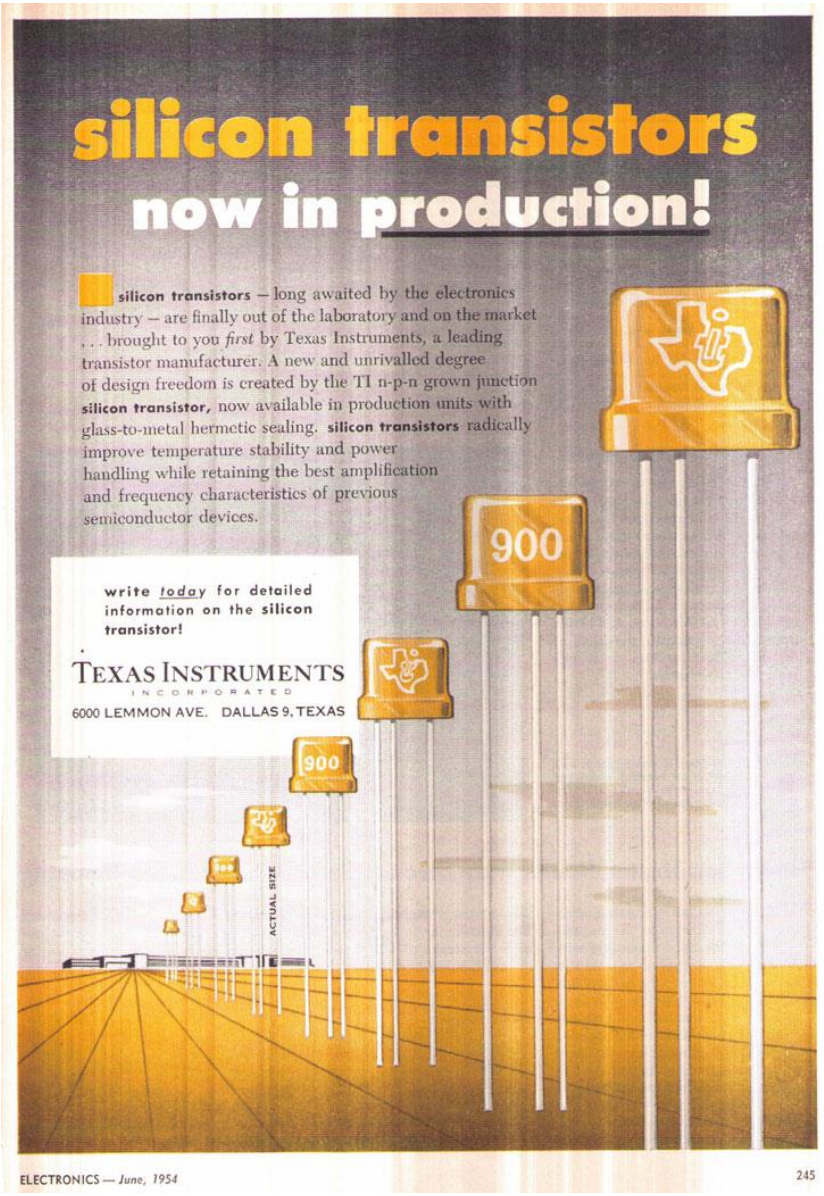
- First commercial production of the silicon transistor in 1954
  - Employing high-purity Dupont silicon, a TI team led by Gordon Teal and Willis Adcock made their first successful silicon transistor on April 14, 1954.
  - An *n-p-n* structure using the grown-junction technique

- May 10: TI beats industry to punch at Institute of Radio Engineers conference in Ohio
  - Gordon Teal announces that silicon transistors were in production and available for sale
  - "Contrary to what my colleagues have told you about the bleak prospects for silicon transistors, I happen to have a few of them here in my pocket."
  - Reporters went nuts!

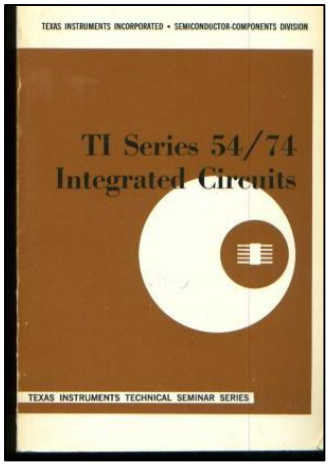
- By the end of the 1950s, silicon had become the industry's preferred semiconductor material.
  - Laid the foundation for the work of Jack Kilby and others
  - Solid-state devices now made with Silicon have better leakage currents in the "off" condition
  - More rugged: Silicon devices that function from -55 to 125°C became possible with high-purity "semiconductor-grade" material.



TI's 1954 silicon-transistor team: W. Adcock, M. Jones, E. Jackson, and J. Thornhill



Ten years later . . . in 1964



- 4 US Patents for ICs issued to TI
  - Silicon IC manufacturing becoming mainstream
- First Plastic Package ICs introduced
- Series 54/74 Transistor-Transistor-Logic (TTL) ICs introduced
- TI team begins work on calculator

- Erik Jonsson becomes Dallas mayor
- UT Dallas TI Founders Building
  - "MIT of Southwest"

texins news

TIers Aid in Birth of 'MIT of Southwest'

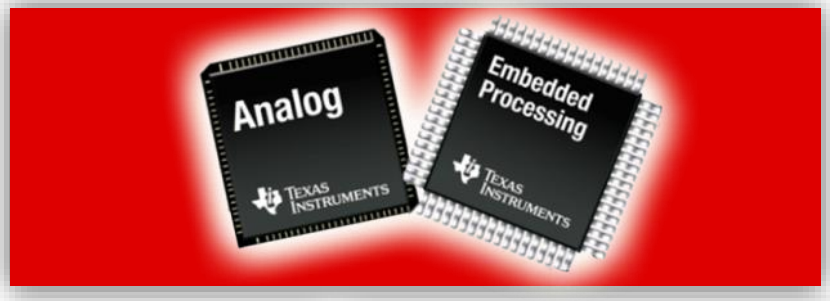
There's A Bright Future For Light Sensing Devices

Fast Forward to Today

Industrial
Bringing high tech electronics to manufacturing, chemical plants and more

HealthTech
Portable devices that monitor vital signs and send details to doctor via smartphone

Communications
Making it easier to enjoy & share information. Cloud and IoT

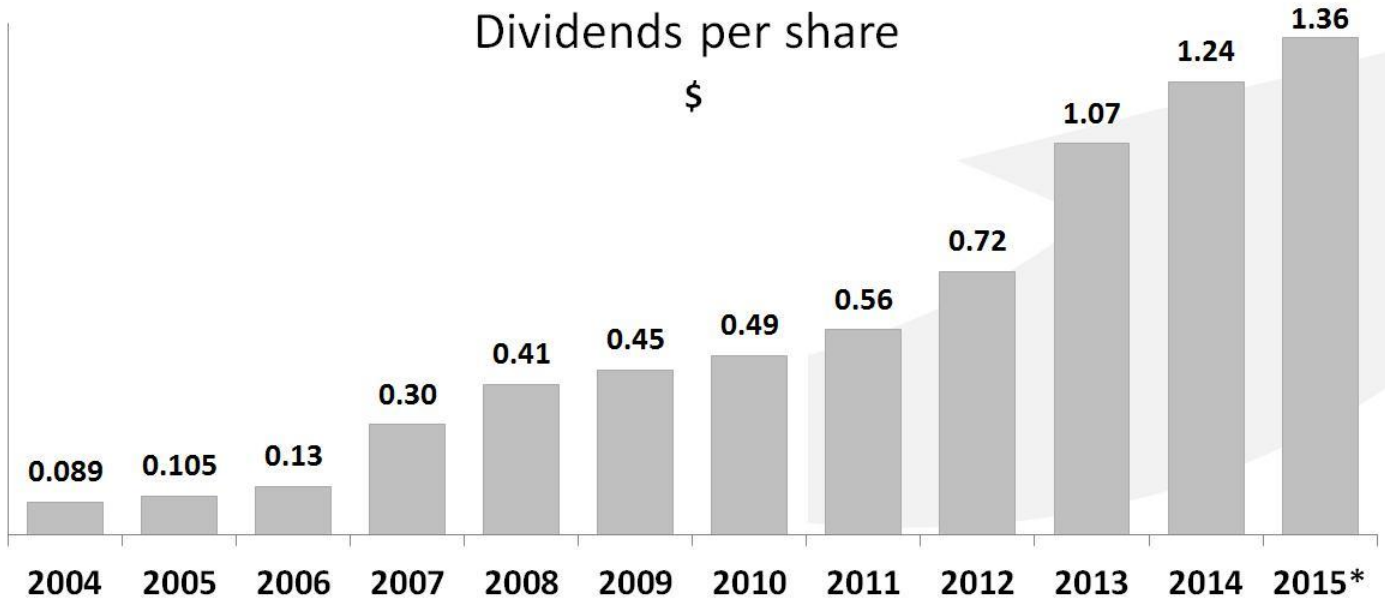


Automotive
Cars that brake or park automatically, enhanced safety & infotainment

How TI did in 3Q14

- Strong 3Q marks another quarter of solid progress and execution
- Analog and Embedded Processing comprised 82% of 3Q revenue, 2 points higher than a year ago
- 8% growth year-over-year (Analog 11%, EP 6%)
- Gross margin of 58.4%, another new record
- Free cash flow for last 12 months is $3.5B, up 20% from a year ago. This represents 27% of revenue.
- Returned $4.2B to shareholders over the last 12 months

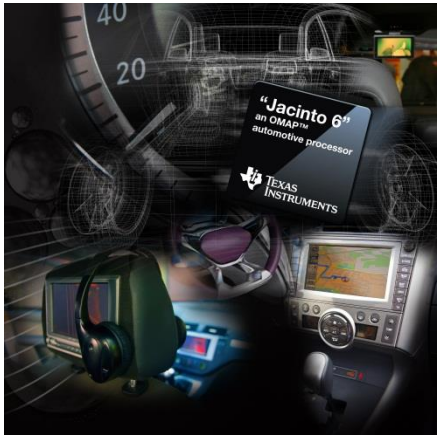
Dividend strategy



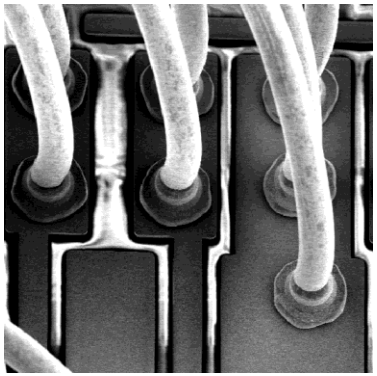
- Increased dividend for 11 consecutive years; 23% average annual growth over last 5 years
- Target dividend budget: ~50% of trailing 4 years' average free cash flow
- 2013 dividend payment used 40% of 2013 free cash flow
- Yield is 2.8%**

* 4Q14 dividend times 4 **As of October 27, 2014

Recent InnovaTIons

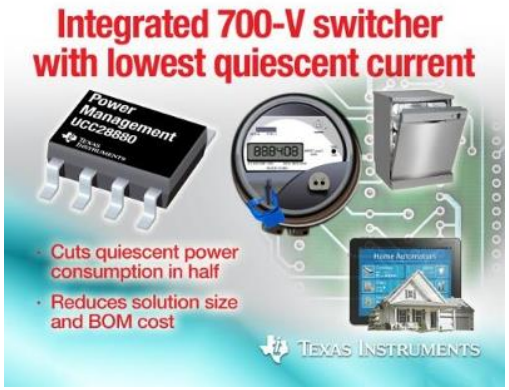


TI drives auto infotainment with Jacinto 6

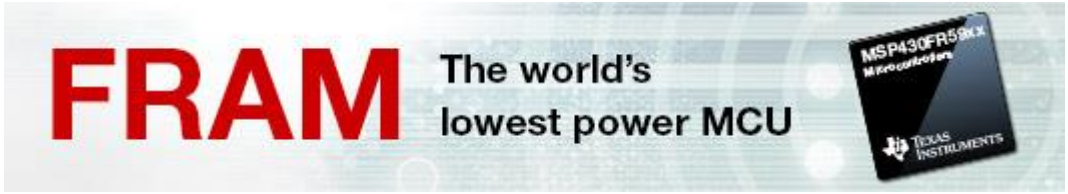


TI has shipped more than 22 billion chips with Cu wires

TI unveils its smallest, most efficient HD DLP® Pico™ chipset



TI high-voltage switcher delivers energy savings to "always-on" smart meters, home automation designs

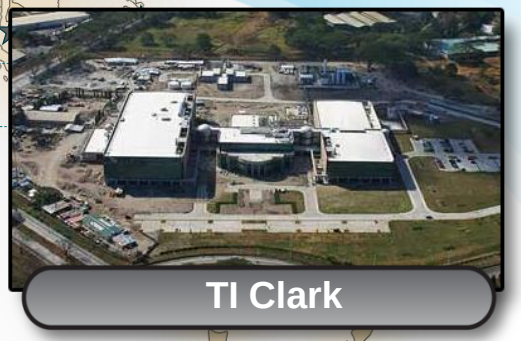


Worldwide manufacturing sites

RFAB

Chengdu

Aizu



TI Clark

Greenock
GFAB
150mm, 200mm

So. Portland
MFAB
200mm

Aguascalientes
TMX

Dallas
DFAB
150mm, 200mm

DMOS5
200mm

SFAB
150mm

DHC
MEMS

DMOS6
300mm

DBUMP

RFAB
300mm

Kuala Lumpur
TIM

Melaka
TIEM

Miho
200mm

Taipei
TITL

Baguio City
TIPI

LEGEND
Wafer Fabs
Assembly / Test
Bump

Innovating for the Future

Nearly $9B invested over the last five years*

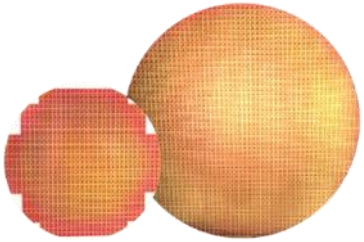
Product Development

- More than 900 new products per year
- Highly integrated custom products
- Software tools

R&D Labs

- Innovation centers focused on high-risk breakthroughs
- Technology-specific labs

Manufacturing Technology



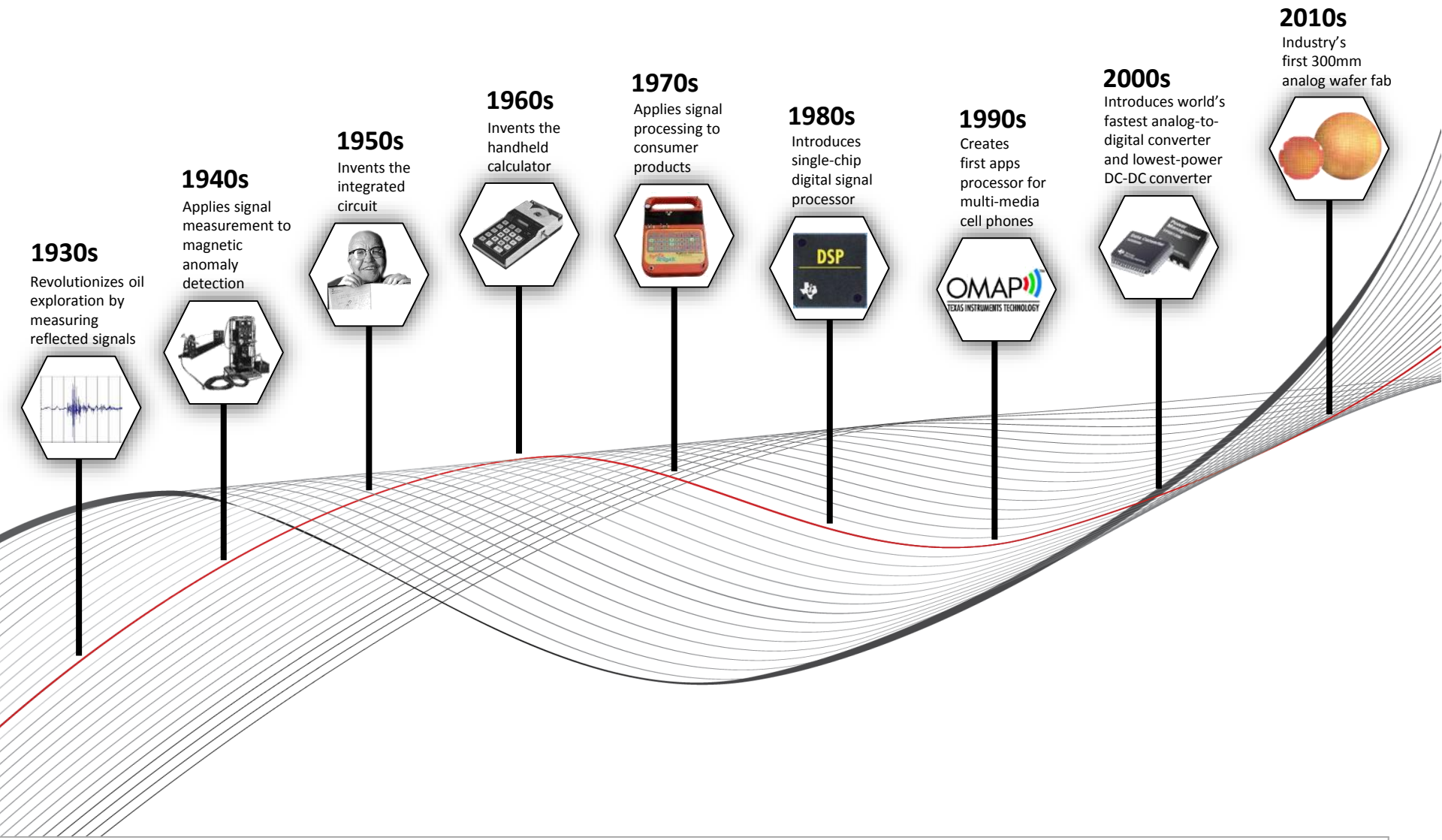
- Differentiated process and packaging technologies
- Flexible CMOS development model

University and Industry

- R&D partnerships with leading universities worldwide
- Engagement with industry consortia

*Cumulative 2009, 2010, 2011, 2012, 2013

And the Journey Continues . . .



“If I have seen further than others, it is by standing upon the shoulders of giants”
– Isaac Newton

“TI has gone further than others by building upon the contributions of our retirees”

Thank you!