



Pivoting for Success – Driving future applications through continued innovation

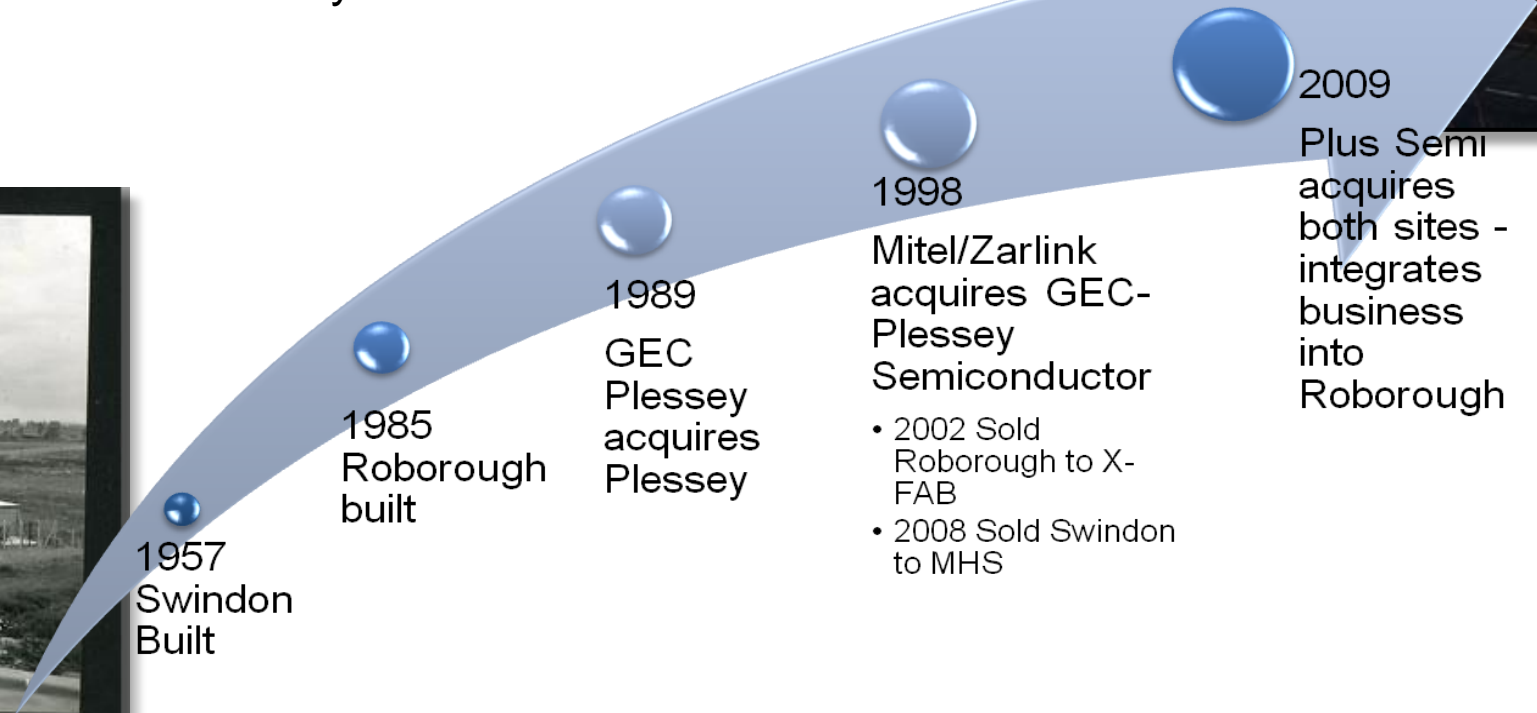
5 June 2024

Plessey History

Plessey is a long-standing innovative semiconductor design and manufacturing company

- Semiconductor heritage across a range process technologies
- Current Plymouth facility built in 1985
- Advanced CMOS line added in 1995 (SMIF – 1st in Europe)
- Shipping part to numerous Tier 1 Automotive and Medical customers
- Sold as part of consolidation in the industry in 2000

- Acquired in 2009 as part of the Plessey re-launch



Plessey History – Silicon Foundry to Micro LED Displays

Plessey is re-launched following a management buy-out in 2009

- Volume 200mm CMOS wafer shipments continued through to 2013
- Developed a range of unique Sensor products including a level 2 certified Medical ECG device
- **Acquisition of GaN on Silicon technology from University of Cambridge in 2012**
- Established 150mm processing line for III-V materials
- March 2013 Plessey launched commercially available GaN on 6-inch silicon LED products
- **Since 2017 - Leading player in the emerging Micro LED display market**
- World first monolithic wafer bonded Micro LED display - Display week (May 2019) – 8 μ m pixel (1080x1920 0.7 inch display)
- Roadmap to 200mm Wafers and early-stage R&D for 300mm and InGaN Red
- Commercial engagements with numerous major players in Micro LED display technology
- IP portfolio including base patents for GaN on Silicon Platform and novel micro LED processes
- **Long-term agreement signed with Facebook (Meta) March 2020**



- Plessey re-launched with acquisition of Plymouth facilities

- Acquisition of GaN on Silicon technology

- Commercially available LEDs manufactured on 150mm silicon substrates

- Multi Junction 12V High Power LEDs launched

- Micro LEDs focus/roadmap

- First G5+ reactor
- 300mm POC

March 2020 – Meta MDMA

Plessey

Key Milestones

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

- EPIC sensor technology development
- Legacy product sales

- First MOCVD Reactor
- Transfer of experimental GaN on Si recipe onto production tool

- Mainstream GaN-on-Si production
- Expanded product range
- Focus on Power LEDs
- Efficacy at 130lm/W, and higher in lab

- 50 μ m Micro LED Development Print head application

- Exit from legacy products

- World first monolithic MicroLED display (0.7 inch diagonal 1080 x 1920 8 μ m pixel pitch) at Display Week
- Fixed display 0.26inch with 3 μ m pitch

COMPANY CONFIDENTIAL

Plessey - Inside the Black Box



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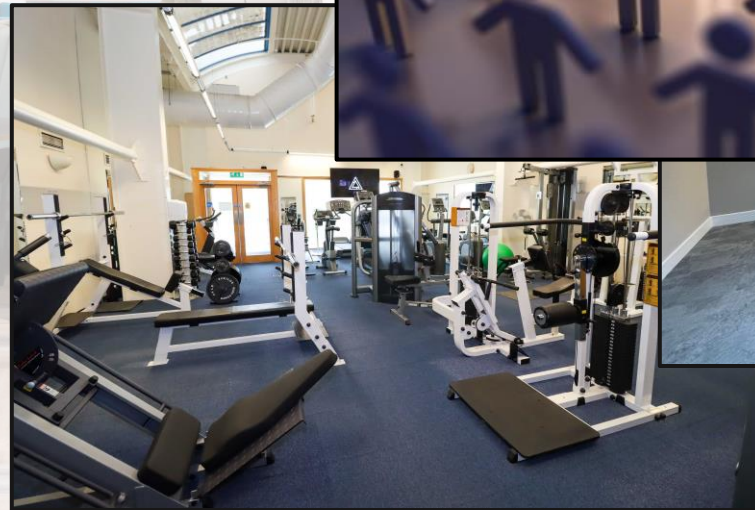
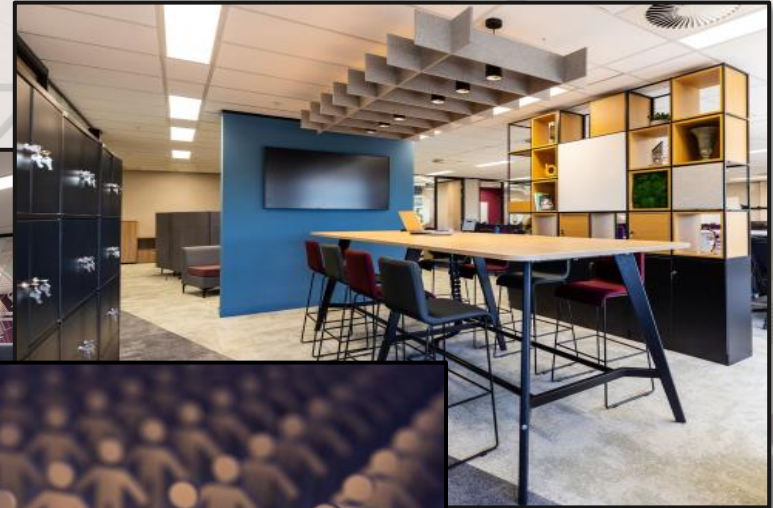
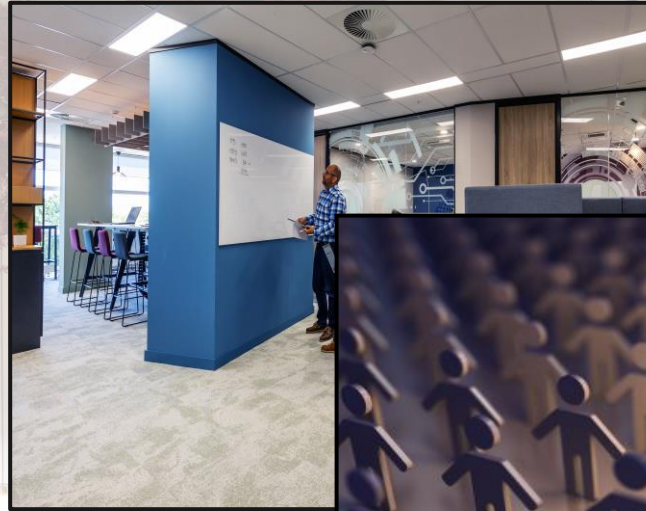
Plessey – Inside the Black Box

OFFICE

- **Boost Motivation**
 - Invigorate
 - Health & Wellbeing
- **Attract & Retain Talent**
- **Increase Functionality**
 - Upgrade technology
 - Video conferencing enabled conference rooms
- **Collaborative spaces**

PEOPLE

- X2 number of employees
- **Training & Development**
- **Career & Succession planning**



Plessey – Inside the Black Box

FACILITY TRANSFORMATION

Fab8 Cleanroom



CMP Room



Fab8 Cleanroom



CMP Room



Fab8 Sub Wafer



Coring Room



Fab8 Sub Wafer



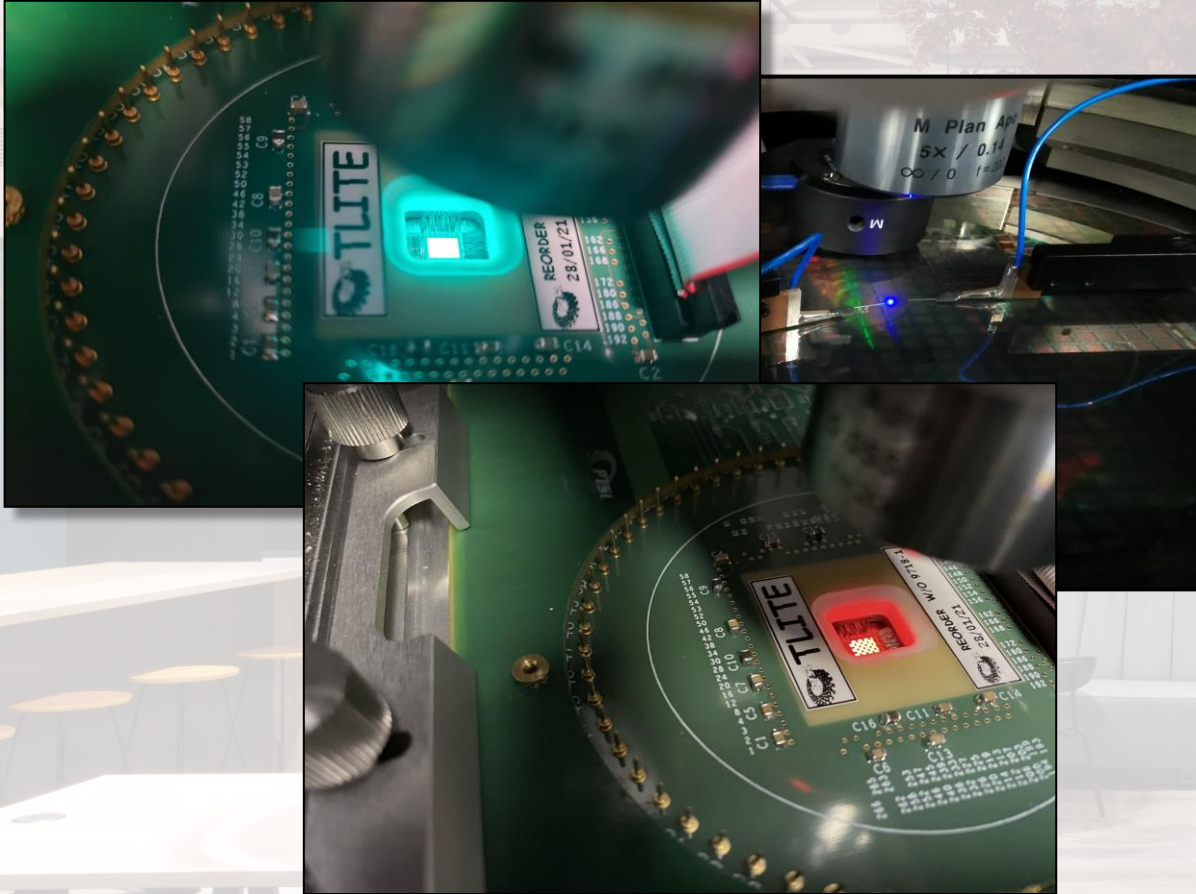
Coring Room



Increase in clean room space, and increasing utilisation from 30% to 80%

Plessey – Inside the Black Box

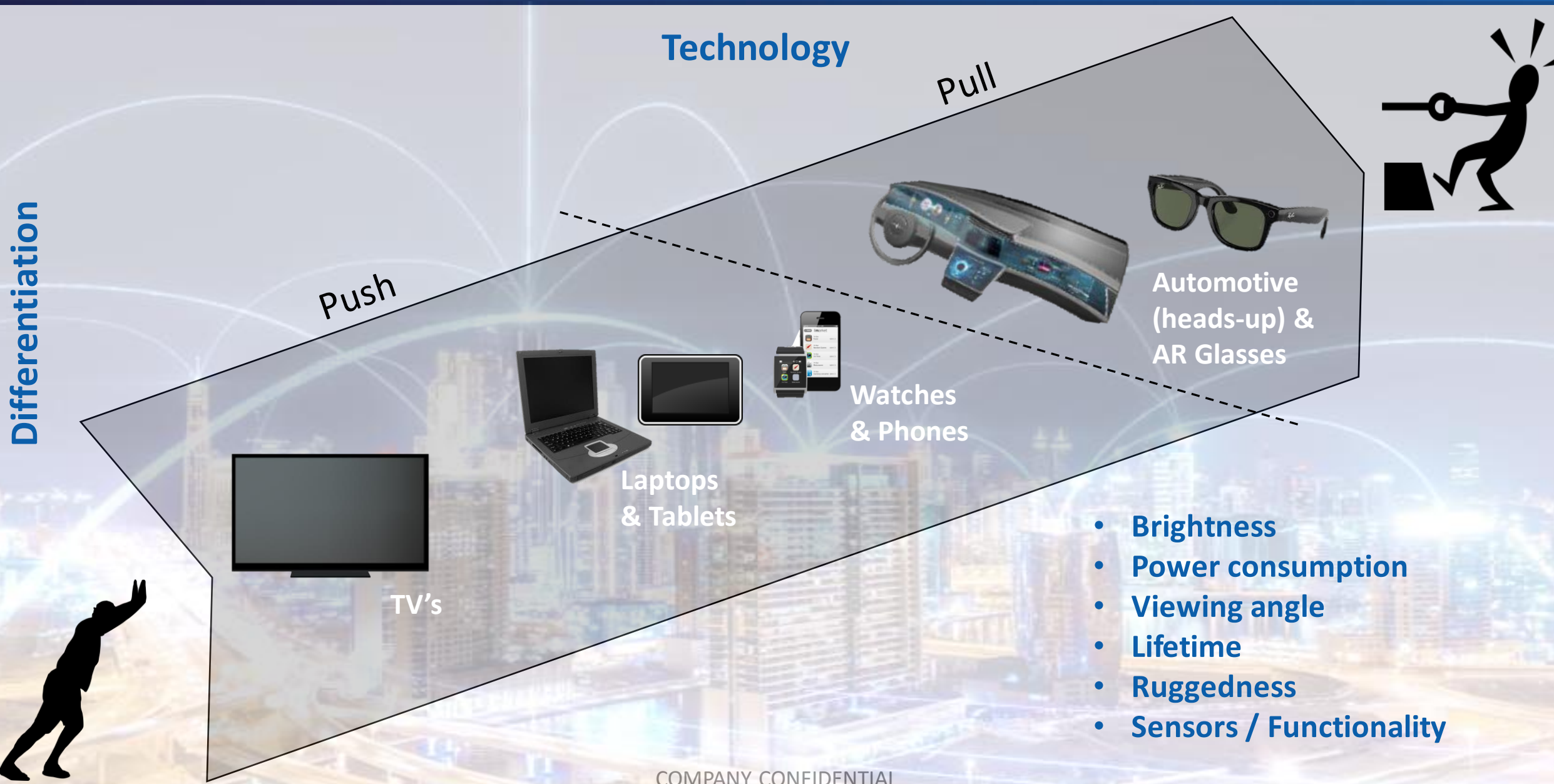
TECHNOLOGY DEVELOPMENT



OPERATIONAL SERVICE

- High Learning Cycle Speed
- 24/7 Development
- Fab Management
 - Visual Fab
 - Turns/Velocity
 - Holds
 - Stand by with WIP
 - Tool/Equipment management & maintenance
- Efficient communication processes
- Problem solving excellence
- **World class development Fab**

Market Drivers for uLED



Plessey Future

Through our strategic partnership, Plessey has established a world class R&D Compound Semiconductor facility specialising in Photonics

Meta, continue...

- R&D to LVM
- Transfer to HVM
- R&D Future Generation Systems
- Repeat 

Possibilities of additional Partnerships in C.S. space

- Leveraging Plessey's capability & knowhow
- GaN, GaP, GaAs, InGaN, AlInGaP, Si, Sapphire
- Accelerator / Open Foundry
- R&D to LVM Model (Lab to Fab)
- Displays / Power / Communication

Thank you for listening

