

# Structuring a photonics company for investment

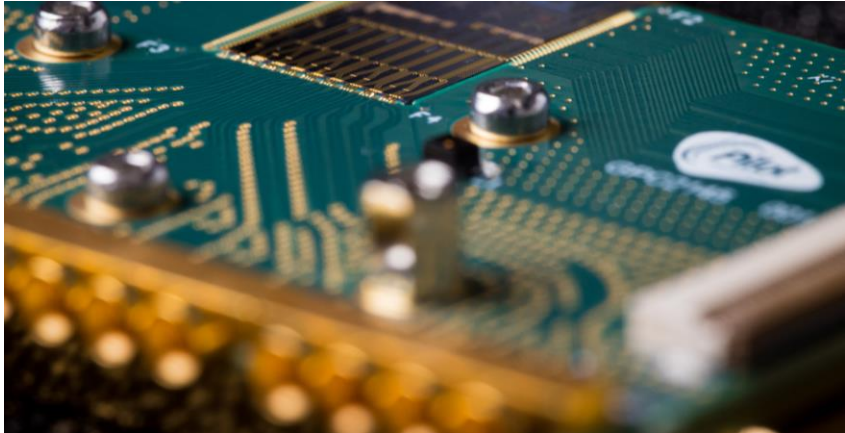
Frank Smyth

*Founder & CTO, Pilot Photonics*

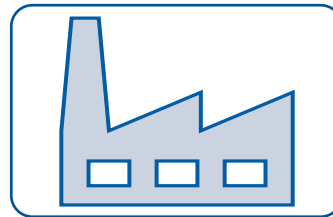
EPIC Investor Workshop

13/12/2022



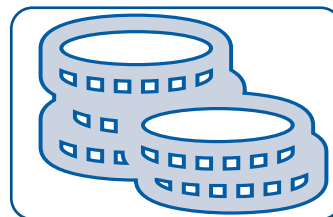


# Company Profile



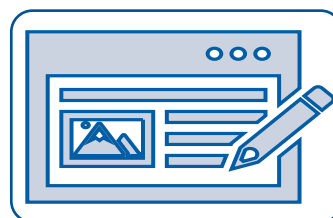
## Background

- Spin-out from Dublin City University
- Delivering comb-enhanced PIC-based solutions
- Serving communications, aerospace, and automotive industries
- 20 staff including 18 physicists & engineers; more than 1/3 at PhD level



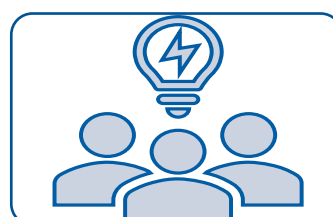
## Funding

- €5m+ in angel & VC funding
- Recipient of the European Innovation Council (EIC) Accelerator Award
- 4 technology development contracts with the European Space Agency
- Multiple winner of Irish Government Disruptive Technology Innovation Fund



## Capabilities

- “Full Stack Photonics” capabilities to deliver complete photonic solutions
- PIC and Laser Design, Design Validation & Test
- RF and digital electronics
- Mechanical & Thermal design & Modelling
- Software development




## Vision & Mission

- Mission: To deploy comb-enhanced PIC solutions to tackle some of the world’s most advanced challenges in data transmission, sensing and measurement
- Vision: Pilot Photonics innovations impacting millions of lives every day


# PIC products for the digital transformation

Pilot Photonics combines photonic integration with comb laser technology to create unique products in multiple growth market opportunities in the digital transformation

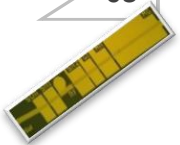
01 **Comb Lasers**  
Integrated Comb laser assembly for long haul & datacentre interconnect



02 **Tunable Lasers**  
Tunable Lasers for FMCW LiDAR, fiber sensing and comms



03  **$\lambda$ Tunable-DML**  
Wavelength tunable directly modulated laser for Fiber To The Home



Long-haul optical networks

Automotive LiDAR

Fiber to the Home

5G/6G Mobile Communication


Space & Satellite

Datacentre, Cloud, AI & HPC


Science & R&D

Optical sensing for Smart Cities/IoT


04 **SuperTROSA™**  
Comb-based PIC modem for Coherent superchannel transceivers



05 **Lyra**  
Comb-source instruments and OEM modules



06 **High Speed Lasers**  
>22GHz BW DFBs and FPs for quantum, communication



# Funding History

## Pre-seed



**Year:** 2012

**Amount:** €350k

**Investors:** AIB Seed Capital  
Enterprise Ireland  
Founders

## Seed



**Year:** 2017 & 2019

**Amount:** €1M & €1M

**Investors:** Kernel Capital  
AIB Seed Capital  
Enterprise Ireland  
Angel Investors

## Series A



**Year:** 2022

**Amount:** €3.4M

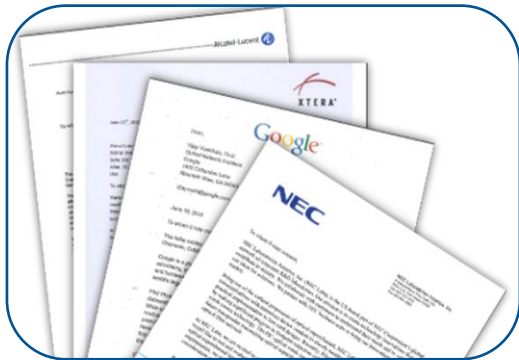
**Investors:** Kernel Capital,  
Infinity Capital,  
Enterprise Ireland  
Angel Investors

Leveraged with more than €5M in public R&D funding from Irish Government, European Union, European Space Agency



# Pivotal items for raising our seed round

Large opportunity and investible business



## Tier 1 customer interest

- Punching above our weight



## Positive due diligence

- Technology potential
- Core IP



## Equity Structure

- After the university and tenured academics what % equity is available to the full-time team



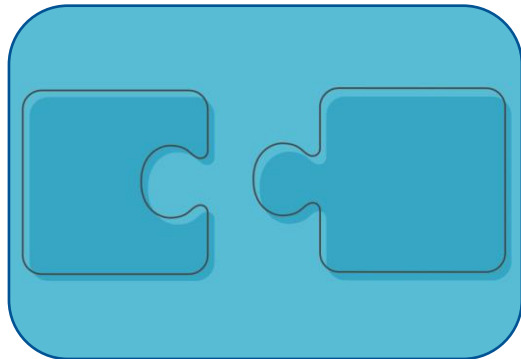
## Leveraged funds

- Investors can worry about distraction
- If aligned to strategy, these can de-risk an investment



# Pivotal items for raising our series A

Product/Market Fit and Ability to scale



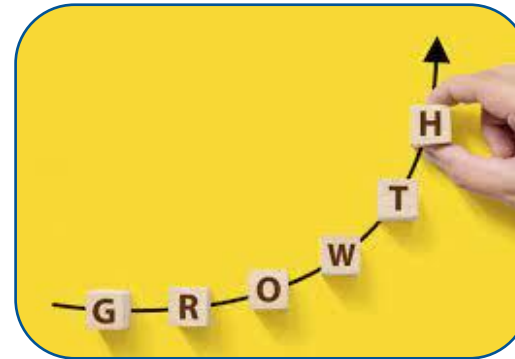
## Product/Market Fit

- Tier 1 customer *traction*
- Third party validation



## Leadership

- Experienced management team
- Commercial Board of Directors



## Scalable Technology & Organisation

- Ecosystem & Partnerships
- Platform (monolithic III-V)
- Positive Growth Culture



## Corporate Cleanliness

### Legal & Financial

The company prides itself on its corporate cleanliness and professionalism

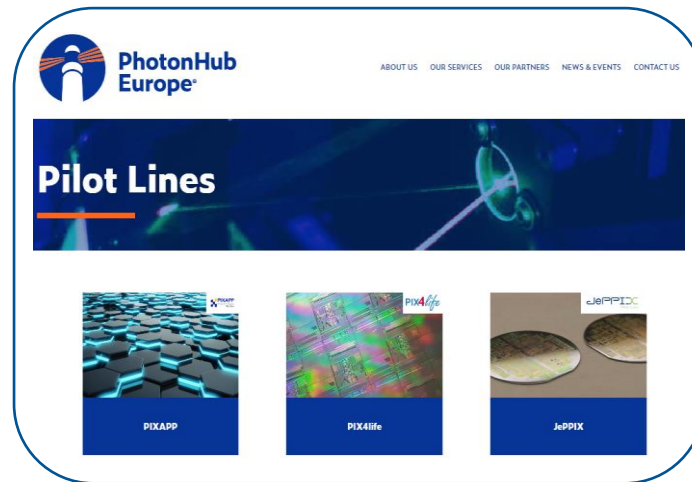
- Retains global Top 10 law firm, Eversheds Sutherland
- Retains global Top 10 financial firm, Grant Thornton
- Full set of consecutive clean, unqualified, financial audits
- Strong IP portfolio and IP management process
- Exhaustive data room
- Corporately clean
  - No legal issues or disputes
  - No outstanding financial liabilities or financial disputes

# Pivotal items right now

Opportunities where a strategic fit can lead to a compelling proposition in the market

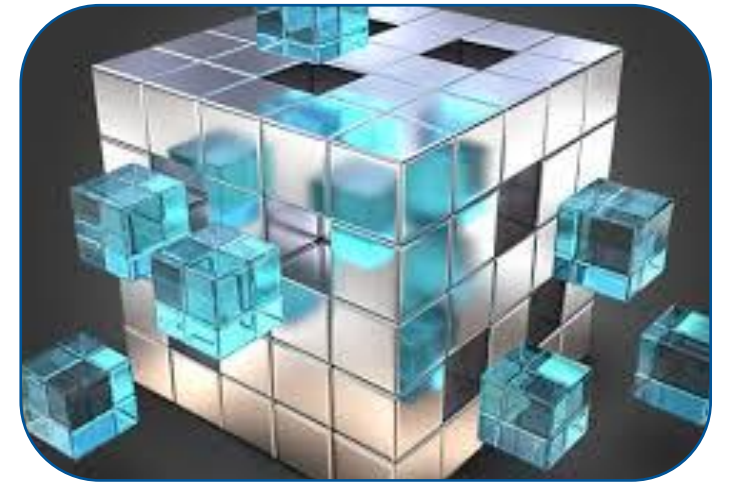


Raising the company profile



Technology development towards volume production

- Pilot-line runs for higher volumes
- Reliability testing & qualification
- Design for manufacture



Customer Trials & Design-ins

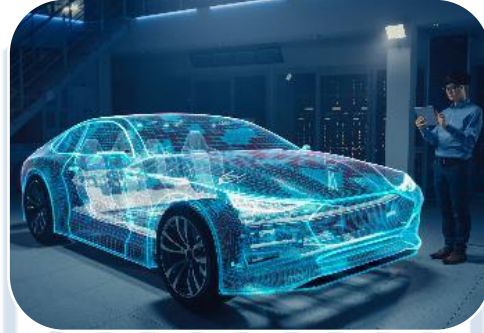




# Thank you



DCI & Long-haul  
networks



Automotive LiDAR



Fiber to the Home



5G/6G Mobile

single-chip photonic integrated circuits enhanced with comb laser technology



Space & Satellite



Datacentre, AI &  
HPC



Science & R&D



Internet of Things