Council of the European Union

Brussels, 10 April 2025
(OR. en)

7897/25

COMPET 247
IND 106
MI 205
RECH 146
INTER-REP 44

NOTE

From:	General Secretariat of the Council
To:	Delegations
Subject:	Presentation by Brainport Development NV (agenda item 2.) at the Working Party on Competitiveness and Growth (Industry) on 10 April 2025

Delegations will find attached a presentation by Brainport Development NV, with a view to the discussion by the Working Party on Competitiveness and Growth (Industry) at its meeting on 10 April 2025.

This document contains a presentation by an external stakeholder and the views expressed therein are solely those of the third party it originates from. This document cannot be regarded as stating an official position of the Council. It does not reflect the views of the Council or of its members.

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Increasing European Competitiveness

April 10th, 10:00-10:15

Naomie Verstraeten

Chief Innovation and Technology
Brainport Development

www.brainporteindhoven.com

Brainport Eindhoven

Facts & figures

573 start and scale-ups

3.649 patent applications

€3,5 mld private R&D-expenses

85.798 high-tech employment

34% of girls in secondary education choose a technical route

6.645 high-tech entities

BRAINPORT EINDHOVEN 2024

Economic size €59,5 mld.

6.923 international technology students

21.600 private R&D-employees

€36,2 mld. export products

BRAINPORT EINDHOVEN

Brainport Development

COMPET.1
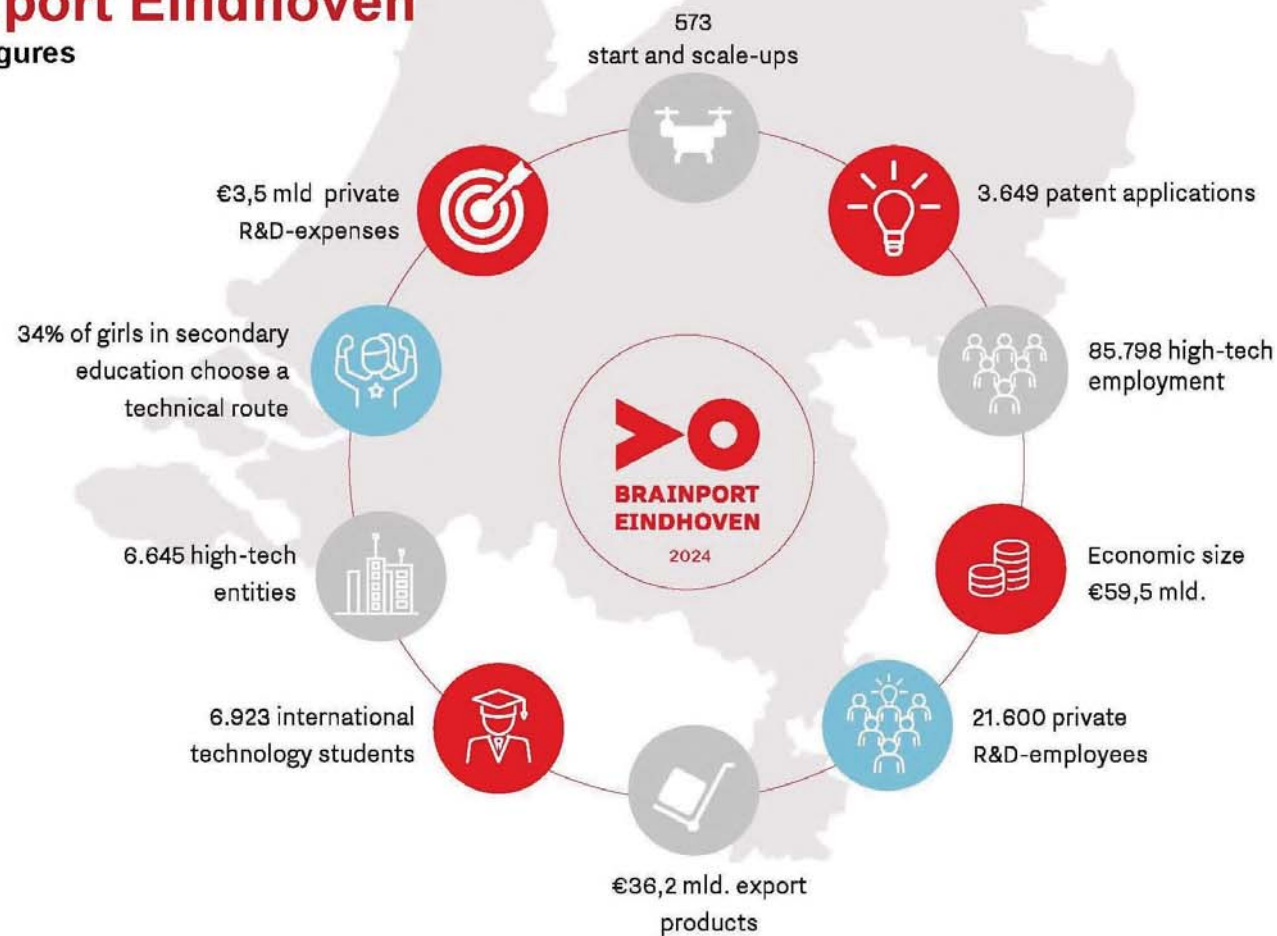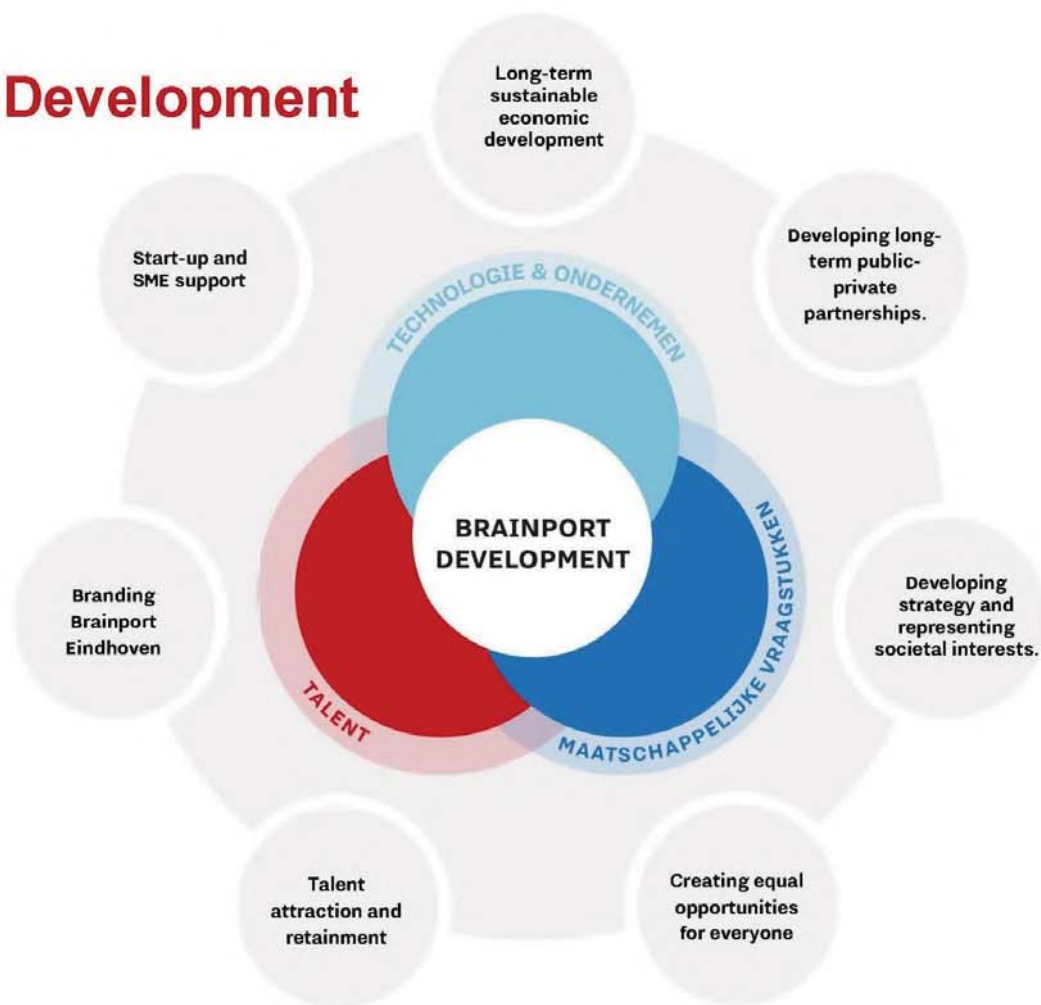
Focus Technologies and Markets

Program-development
Technology & Markets

1 Exploration of new technologies or markets. (Quickscan)

Whitepaper and Factsheet

2 In-depth market research based on business intelligence.

Value Chain (segment) Analysis

3 Cluster formation based on smart targeting.

Stakeholder Analysis

4 Identifying right-to-play and opportunities.

IP & Academic Publication Benchmark

5 Drafting a strategic document with categorized opportunities.

SWOT-analysis

6 Defining innovative projects, securing funding, and initiating them.

Combination of the previous + GDP Analysis

7 Scaling up and internationalization.

International Mapping

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Technology value-chain mapping

We have acces to data of over 317M entities worldwide.

- 66M+ entities in Europe
- 136M+ entities in Asia
- 56M+ entities in North-America

- 420K+ entities regarding Semiconductors
- 280K+ entities regarding Medical Equipment & Supplies

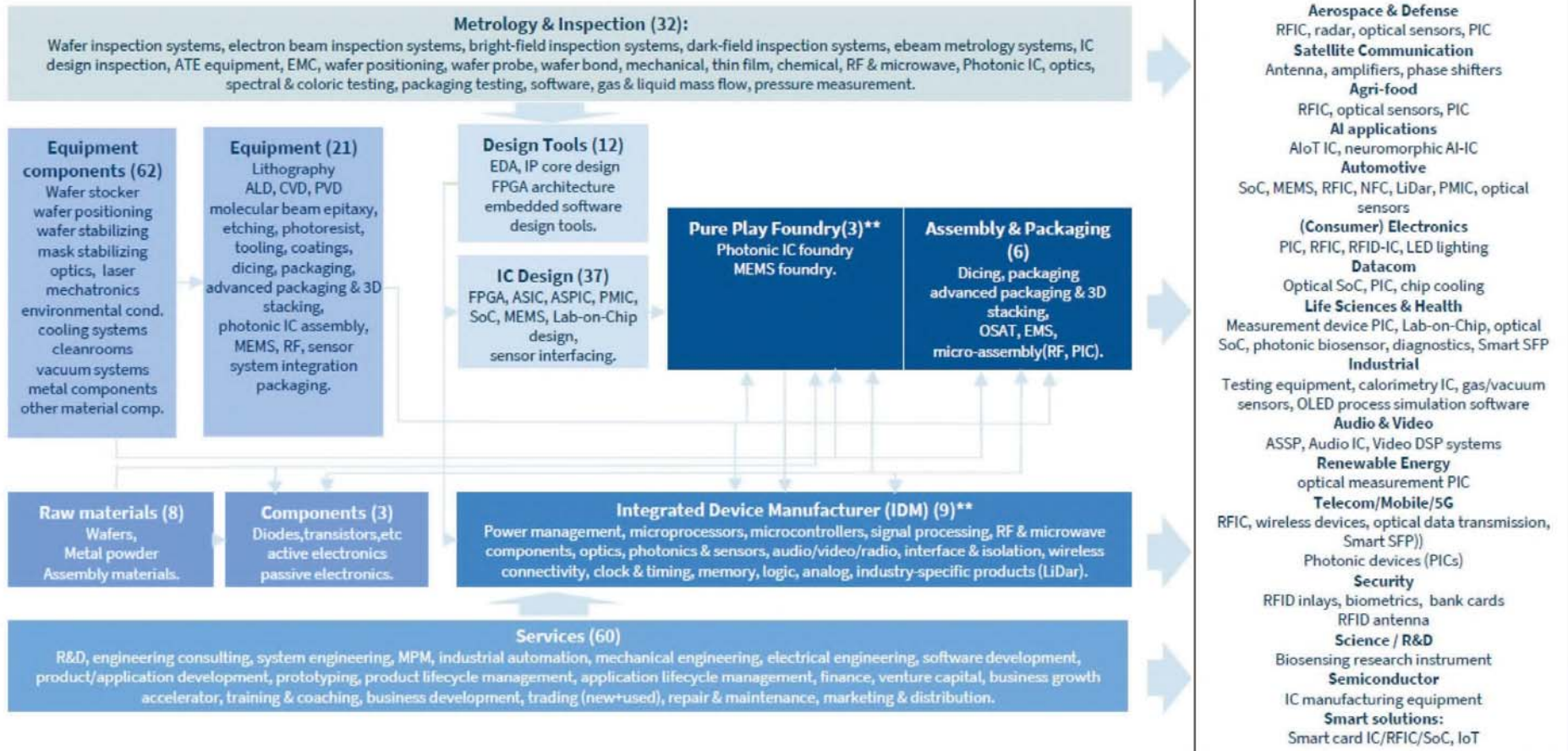**Enriched company profiles for 10,821,387 companies (and counting)**
- Technology classification and description (in-house developed taxonomy)
- Company financials
- Intellectual Property (IP)
- Company relations and partnerships
- Semi-automated process

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Mixed research approach for Business Intelligence

Bottom-up Approach   Top-down Approach

Most common approach   Overlooked approach

Less time consuming   Time consuming

Slowly builds your dataset   You narrow down your initial dataset resulting in the most complete overview

You miss out what you don't know   Exclusions are decision based

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Dutch semicon value chain

Metrology & Inspection (32):
Wafer inspection systems, electron beam inspection systems, bright-field inspection systems, dark-field inspection systems, ebeam metrology systems, IC design inspection, ATE equipment, EMC, wafer positioning, wafer probe, wafer bond, mechanical, thin film, chemical, RF & microwave, Photonic IC, optics, spectral & coloric testing, packaging testing, software, gas & liquid mass flow, pressure measurement.

Equipment components (62)
Wafer stocker
wafer positioning
wafer stabilizing
mask stabilizing
optics, laser
mechatronics
environmental cond.
cooling systems
cleanrooms
vacuum systems
metal components
other material comp.

Equipment (21)
Lithography
ALD, CVD, PVD
molecular beam epitaxy,
etching, photoresist,
tooling, coatings,
dicing, packaging,
advanced packaging & 3D
stacking,
photonic IC assembly,
MEMS, RF, sensor
system integration
packaging.

Design Tools (12)
EDA, IP core design
FPGA architecture
embedded software
design tools.

IC Design (37)
FPGA, ASIC, ASPIC, PMIC,
SoC, MEMS, Lab-on-Chip
design,
sensor interfacing.

Pure Play Foundry(3)**
Photonic IC foundry
MEMS foundry.

Assembly & Packaging (6)
Dicing, packaging
advanced packaging & 3D
stacking,
OSAT, EMS,
micro-assembly(RF, PIC).

Raw materials (8)
Wafers,
Metal powder
Assembly materials.

Components (3)
Diodes,transistors,etc
active electronics
passive electronics.

Integrated Device Manufacturer (IDM) (9)**
Power management, microprocessors, microcontrollers, signal processing, RF & microwave components, optics, photonics & sensors, audio/video/radio, interface & isolation, wireless connectivity, clock & timing, memory, logic, analog, industry-specific products (LiDar).

Services (60)
R&D, engineering consulting, system engineering, MPM, industrial automation, mechanical engineering, electrical engineering, software development, product/application development, prototyping, product lifecycle management, application lifecycle management, finance, venture capital, business growth accelerator, training & coaching, business development, trading (new+used), repair & maintenance, marketing & distribution.

Applications (28)

Aerospace & Defense
RFIC, radar, optical sensors, PIC
Satellite Communication
Antenna, amplifiers, phase shifters
Agri-food
RFIC, optical sensors, PIC
AI applications
AIoT IC, neuromorphic AI-IC
Automotive
SoC, MEMS, RFIC, NFC, LiDar, PMIC, optical sensors
(Consumer) Electronics
PIC, RFIC, RFID-IC, LED lighting
Datacom
Optical SoC, PIC, chip cooling
Life Sciences & Health
Measurement device PIC, Lab-on-Chip, optical SoC, photonic biosensor, diagnostics, Smart SFP
Industrial
Testing equipment, calorimetry IC, gas/vacuum sensors, OLED process simulation software
Audio & Video
ASSP, Audio IC, Video DSP systems
Renewable Energy
optical measurement PIC
Telecom/Mobile/5G
RFIC, wireless devices, optical data transmission, Smart SFP))
Photonic devices (PICs)
Security
RFID inlays, biometrics, bank cards
RFID antenna
Science / R&D
Biosensing research instrument
Semiconductor
IC manufacturing equipment
Smart solutions:
Smart card IC/RFIC/SoC, IoT

Metrology & Inspection (equipment & services):
32 organisations
4,031 FTE
€2.0 bn Revenue

1. ThermoFisher Scientific
2. ASML**
3. Malvern Panalytical
4. Sioux Technologies
5. Salland Engineering Electronics

Applications
28 organisations
2739 FTE
€556.7 m Revenue

1. Thales Netherlands
2. AME
3. Aimvalley
4. Sintecs
5. Morphotonics

Equipment Components
62 organisations
9,311 FTE
€3.1 bn Revenue
1. VDL ETG
2. Prodrive technologies
3. NTS
4. Frencken
5. Neways Electronics

Equipment
21 organisations
18,247 FTE
€13.7 bn Revenue
1. ASML**
2. Kulicke & Soffa Liteq
3. ASM International
4. BESI
5. IHI Hauzer Techno Coating

Design Tools
12 organisations
316 FTE
€56.4 m Revenue
1. Technolution
2. Riscure
3. Siemens EDA
4. Synopsys Software NL
5. Intrinsic ID

Pure Play Foundry
3 organisations
246 FTE
€120.0 m Revenue
1. Philips Innovation Services
2. Smart Photonics
3. Nanophab

Assembly & Packaging
6 organisations
113 FTE
€24.9 m Revenue
1. Sencio
2. Phuntronix
3. Phix
4. Elect
5. Sempro Technologies

Raw Materials
8 organisations
151 FTE
€54.2 m Revenue
1. Alpha Assembly Solutions
2. POLYFLUOR PLASTICS
3. MAT-TECH
4. Mintres
5. Hemabo

Components
3 organisations
554 FTE
€162.1 m Revenue
1. Sensata technologies
2. Nexperia
3. Epicor components

IC Design
37 organisations
890 FTE
€208.4 m Revenue
1. Dialog Semiconductor
2. Qualcomm Technologies
3. SiTime
4. Goodix Technologies
5. Rambus

Integrated Device manufacturer (IDM)
9 organisations
2,597 FTE
€1.1 bn Revenue
1. NXP
2. Ampleon
3. Broadcom NL
4. Qorvo NL
5. Analog Devices

Services
60 organisations
3,373 FTE
€923.9 m Revenue

1. Simac Techniek
2. Festo
3. Benchmark Electronics
4. Teledyne Dalsa
5. WePro Group

* Top 5 sample organisations are ranked by NL revenue in 2021; Foreign companies are underlined.

** All organisations are classified in one of these value chain segments, with the exception of ASML, for which a distinction is made between Equipment and Metrology and Inspection activities.

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Business Intelligence & Monitoring
Integrated Photonics

PhotonDelta

- In 2022, secured €1.1 billion in public and private investment. This includes €470 million in funding obtained through National Growth Fund
- Activities
  - Innovation
  - Internationalisation
  - Funding
  - Talent

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PIC Ecosystem dashboard

Human Capital dashboard

| Home | Number of employees | Distribution of employees by levels | Student hotspots | Talent hotspots |
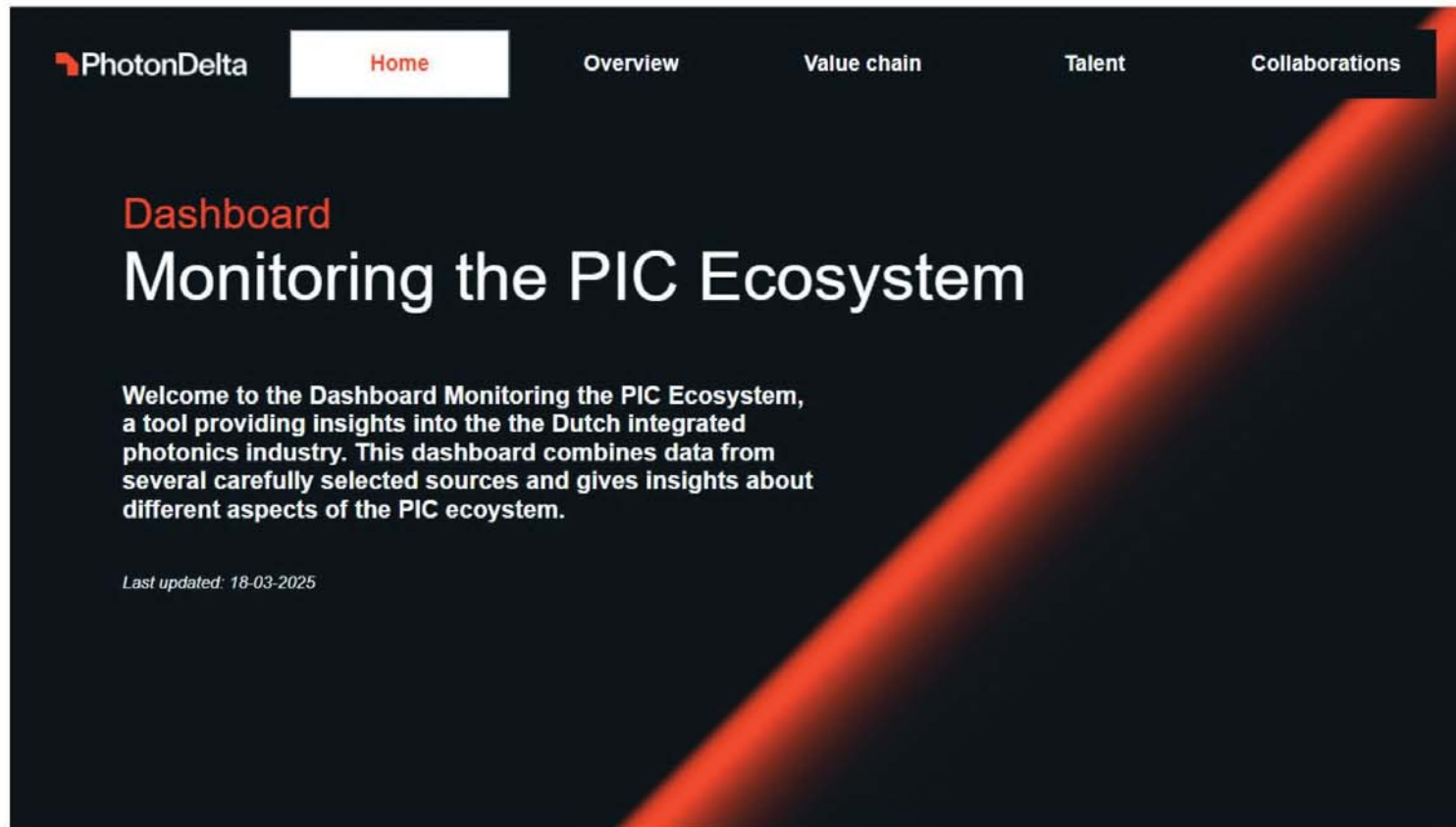
PhotonDelta

Human Capital Dashboard

Welcome to the Human Capital Dashboard, a tool providing insights into the workforce landscape within the integrated photonics industry. This dashboard combines data from several carefully selected sources and gives insights about different aspects of the workforce landscape. This helps us to assess the current workforce landscape and predict future talent needs. On this page you can find an overview of the data that can be found in the dashboard.

Number of employees & distribution employees

In 2023 a Human Capital survey was shared with companies within the PhotonDelta ecosystem to capture vital details about integrated photonics workforce requirements. Fifteen companies actively engaged in the survey, and out of those, ten successfully completed it, contributing valuable information to our analysis.
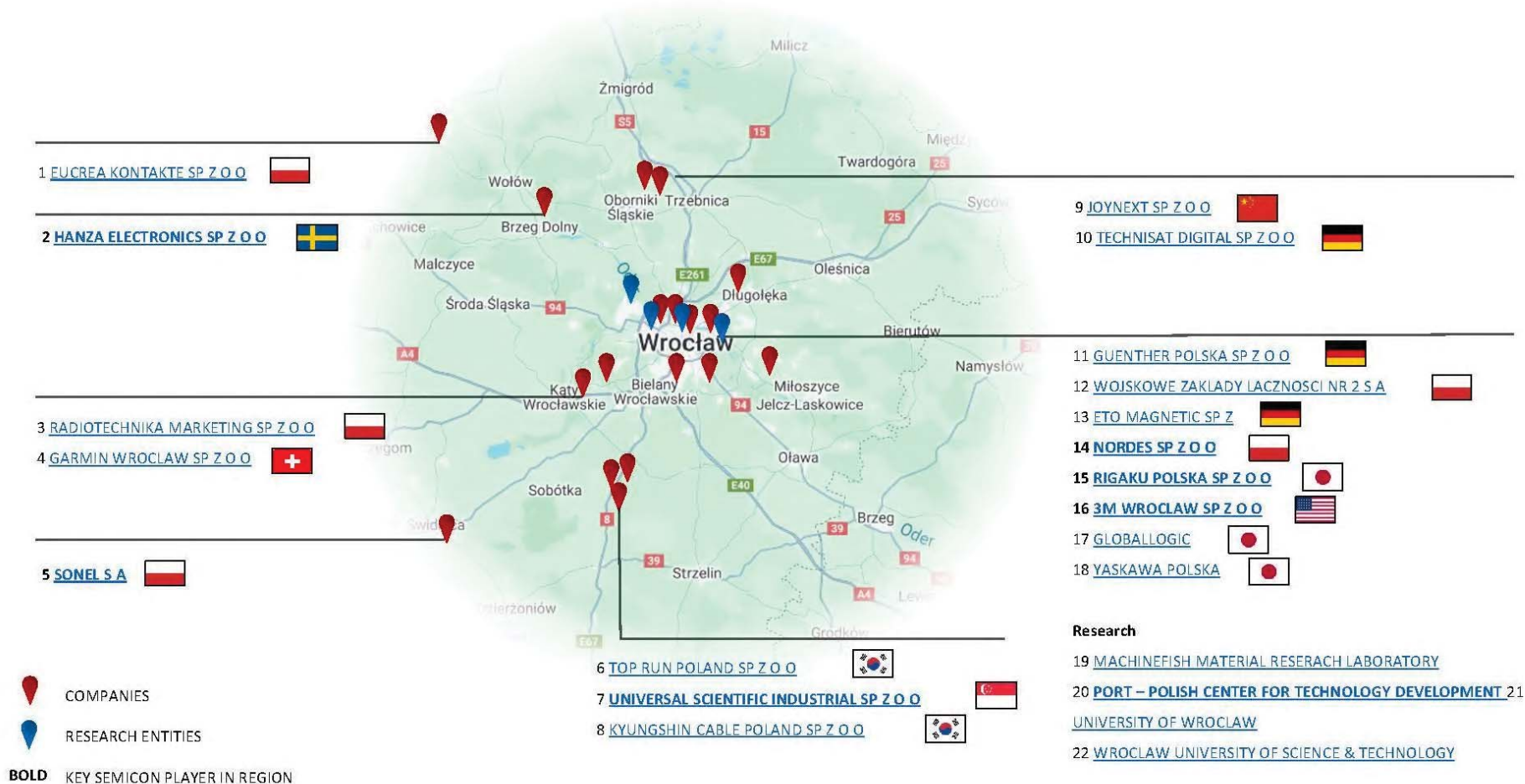
- When you see references to "survey data", it pertains to the raw responses obtained directly from companies through the questionnaire. When you encounter references to "data combined with annual report," it signifies a synergistic approach where survey data is harmonized with data collected for the annual report of 2023 of PhotonDelta.
- Our research focuses specifically on the integrated photonics domain. When interpreting the data, it's important to bear in mind that questions about the total number of full-time equivalents (FTEs) refer exclusively to those working within integrated photonics.
- The survey represents a diverse array of companies throughout the supply chain, covering companies in design, manufacturing, packaging and application development, providing a comprehensive view of the workforce landscape. It's worth noting that while all types of companies are included, the personnel requirements may not be proportional across the various stages of the supply chain.

Student hotspots

To define student hotspots, the number of related studies for integrated photonics is considered. Using keywords, the name and description were searched for relevant studies using studyportals as sources. Only English-language studies are included in this source.
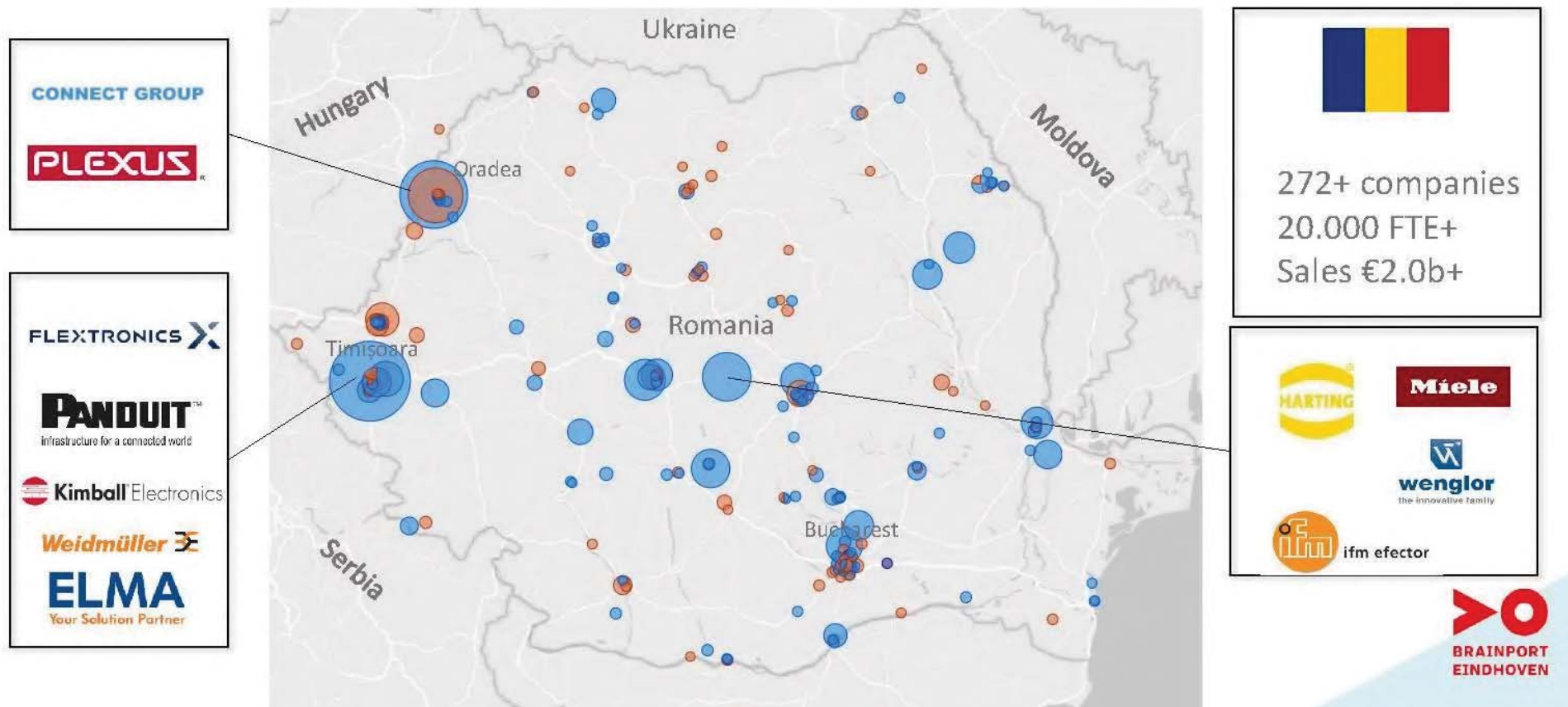
Talent hotspots

To assess where talent in the field of integrated photonics is located, we used public data to define talent hotspots. By conducting a patent and scholar works analysis using lens.org as a source, these hotspots were identified.

Last updated: 19-04-2024

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HIGH-TECH & ELECTRONIC MANUFACTURING COMPANIES [Wroclaw +50km]

1 EUCREA KONTAKTE SP Z O O

2 HANZA ELECTRONICS SP Z O O

3 RADIOTECHNIKA MARKETING SP Z O O

4 GARMIN WROCLAW SP Z O O

5 SONEL S A

6 TOP RUN POLAND SP Z O O

7 UNIVERSAL SCIENTIFIC INDUSTRIAL SP Z O O

8 KYUNGSHIN CABLE POLAND SP Z O O

9 JOYNEXT SP Z O O

10 TECHNISAT DIGITAL SP Z O O

11 GUENTHER POLSKA SP Z O O

12 WOJSKOWE ZAKLADY LACZNOSCI NR 2 S A

13 ETO MAGNETIC SP Z

14 NORDES SP Z O O

15 RIGAKU POLSKA SP Z O O

16 3M WROCLAW SP Z O O

17 GLOBALLOGIC

18 YASKAWA POLSKA

Research

19 MACHINEFISH MATERIAL RESERACH LABORATORY

20 PORT – POLISH CENTER FOR TECHNOLOGY DEVELOPMENT 21
UNIVERSITY OF WROCLAW

22 WROCLAW UNIVERSITY OF SCIENCE & TECHNOLOGY

COMPANIES

RESEARCH ENTITIES

BOLD KEY SEMICON PLAYER IN REGION

Semiconductor/Electronics Clusters In Romania

Thank you

Naomie Verstraeten
Chief Innovation and Technology
(E): n.verstraeten@brainportdevelopment.nl
Brainport Development

www.brainporteindhoven.com