

# Algemene Ledenvergadering High Tech NL

Enschede , 21 Juni 2018

# Terugblik 2015-2017

## Micro Nano Elektronica

*verbinden | aanjagen van innovatie | samenwerken*

- Netwerk bijeenkomsten in 2017: 26 bijeenkomsten
- Innovatiemakelaar
- Internationale netwerkfunctie

## Human Capital Agenda

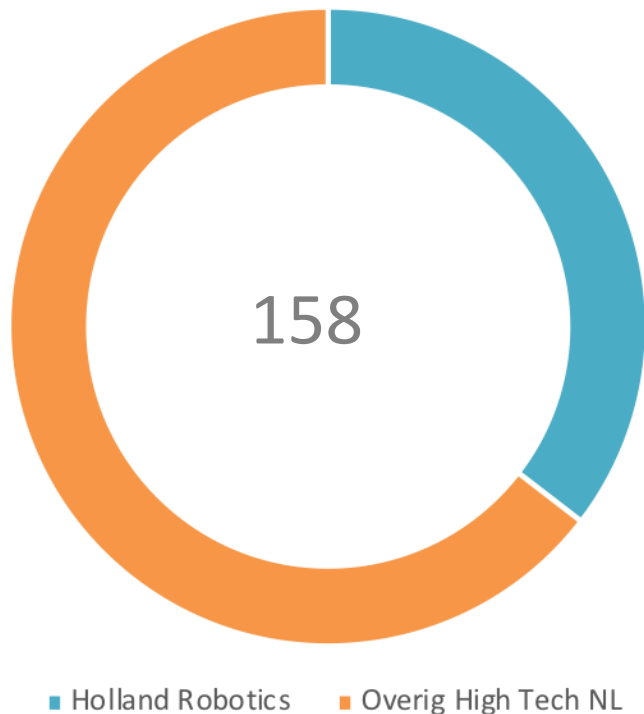
- Topsector en landelijk breed
- Young Professionals program

## Holland Robotics

- Internationale positionering (ism RVO en ROM's)
- Holland Robotics community (ism FME)
- Nationale Robotics R&D agenda

# Innovatiemakelaar High Tech NL

Matches Q1-2 2018



- Partners voor **innovatieprojecten**: e.g. EIT Digital
- Matchmaking voor **nieuwe business**: samen kun je meer
- Ontsluiten **buitenlandse** netwerken: e.g. IA netwerk
- **Cross-sectoraal**: e.g. composieten en machinebouw/robotica
- Bedrijven met **kennisinstellingen**: e.g. met Fontys
- **Start-up** met OEM
- **Ondernemer** met kansen
- Ongevraagde **suggesties** voor leden

# Focus Innovatiemakelaar

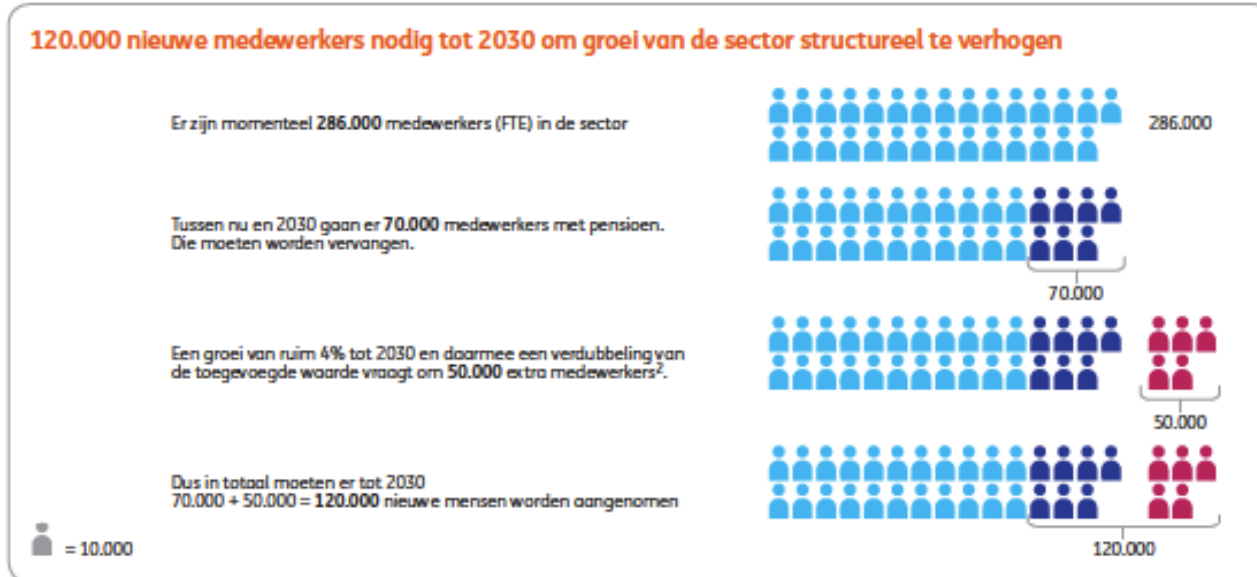
## Identificeren relevante trends

- **Techology opportunities**
  - Green Micro-Nano-Electronica
  - Fotonica
  - Metrologie
  - AI / machine learning / deep learning
- **Business opportunities**
  - Opkomende markten
  - Vraag signaleren en verbinden
- **'Umfeld'**: het speelveld in de wereld (nu en toekomst)
  - Fondsen, politiek, regelgevingen, belangen, ...

**Lange termijn innovatie: nu beginnen = nu investeren!**

# Human Capital... de feiten

## Een groeiend tekort aan medewerkers



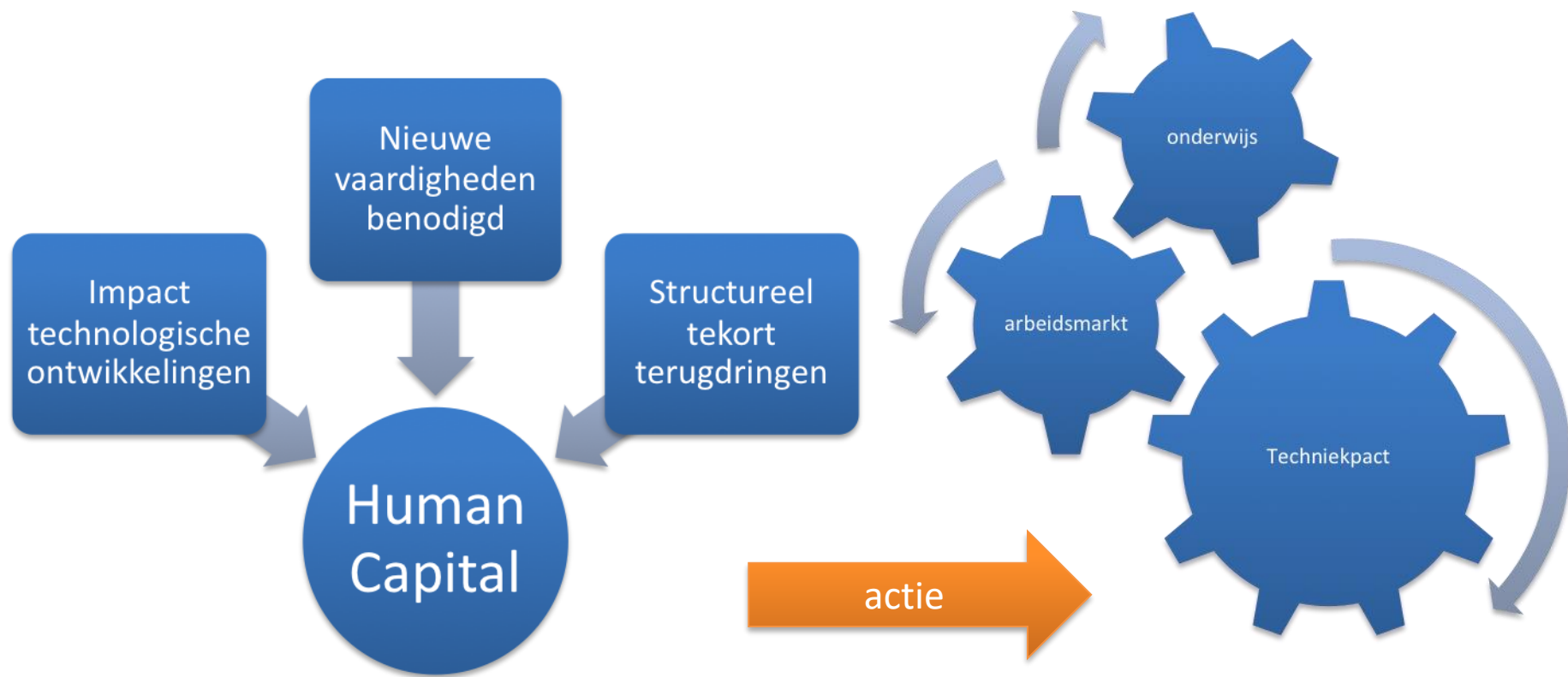
## Onderverdeeld naar opleidingsniveau



1 Bron: CBS, specifiek onderzoek [ao-metalektro.nl/images/digimagazine/AO-Metalektro-monitor-okt2017/FLASHindex.html](https://www.cbs.nl/images/digimagazine/AO-Metalektro-monitor-okt2017/FLASHindex.html)

2 Hierbij is uitgegaan van een jaarlijkse groei van de arbeidsproductiviteit tot 2030 van 3%, gelijk aan de periode 1995-2016. De productiviteit per FTE loopt dan op van € 110.000 in 2016 naar € 167.000 in 2030.

# Human Capital is een kritische succesfactor



# Wat moet er nog gebeuren?

- Ondersteunen Techniepact
- Imagoverbetering

Instroom in  
Bèatechnisch  
onderwijs

Internationals  
aantrekken

Versterkte inzet op  
aantrekken en behouden  
internationale kennis-  
werkers en internationale  
arbeidskrachten

Beroepskeuze  
en LLL

- CoE's en CIV's grotere rol  
in Leven Lang Leren en  
om-en bijscholing
- Imagoverbetering

Instroom en behoud techniekwerkers in bedrijven

# Waar we aan werken...

## **Vergroten instroom**

- Imagoverbetering “techniek” bij alle stakeholders; PO, VO, studie- en beroepskeuze
- Vertalen impact “digitalisering” (incl. robotisering) naar opleidingsbehoeften nu en in de toekomst
- Expertsessies HRM in R&D, onboarding
- **Vergroten participatie bedrijven in het onderwijs**
  - Behoeftte bedrijfsleven bundelen als input voor het onderwijs
  - Ondersteunen rol CoE’ s en CIV’ s ,ook op hun rol bij om- en bijscholing van professionals
- **Internationalisering**
  - Speciale missies aantrekken internationale kenniswerkers Boston en Zuid-Korea
- **Young Professionals**
  - Year Event, thema 2018 is Human Capital
  - Netwerk bouwen – “Young Intercompany” – Sport event



# 1 jaar Holland Robotics

## Internationaal gezicht

- Innovatiereizen Singapore en Japan
- smartestsquaremeter.com

## Landschap

Lancering onlineplatform en landschap met 360 robotica partijen in Nederland



## Position Paper

- Ontwikkeling via Berenschot
- Aanbieding aan Berthold Leeffink
- Vervolg en verdiepingssessie's



## Levenslicht Holland Robotics

22 Februari 2017 eerste sessie

20 maart 2017 lancering Holland Robotics

## Beurzen

- Business Europe Robotics 2017
  - Hannover Messe 2017
- Vision, Motion en Robotics 2017



## Bijeenkomsten

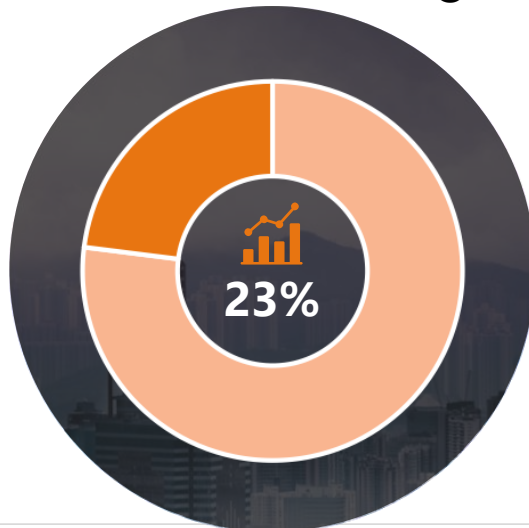
- Autonome Robots
  - Secure Robotics
  - AR/VR en Robots
- Popup bijeenkomst bij Festo
- 1 jaar Holland Robotics bij Vanderlande
- Eindhoven Medical Robotics

## Projecten

- COTEMACO
- DIH Smart Manufacturing
  - AgroRobotics

# In cijfers

- Landschap van 360 naar 405  
(Sinds het online gaan van [www.hollandrobotics.nl](http://www.hollandrobotics.nl) medip augustus 2017)
- Participanten van 13 naar 38
- Founding partners van 13 naar 15  
FME en TNO zijn er bijgekomen
- Nieuwsbrief bestand van 0 naar 748
- Bijeenkomsten van 0 naar 6
- Gemaakte actieve verbindingen +28



# Vooruit



## Makelaarsfunctie

Organiseren van verbinding tussen MKB en Robotica landschap

## Makelaarsfunctie

Experttafels om MKB problemen op te lossen

## • Projecten

- COTEMACO
- DIH Smart Manufacturing
- DIH AgroRobotics

## Opleiden

Robot Academie door ontwikkelen met community ten behoeve van MKB

## Bijeenkomsten 2019

- MKB connecting Robotica
- WUR AgroRobotics
- AI & Robotics (Microsoft)
- Holland Robotics Congres

## Beurzen 2019

- Hannover Messe
- Automatica München
- Vision, Motion & Robotics

## Human Capital

Awareness creëren dat Robotisering echt gaat gebeuren en geen bedreiging is. Voor de banen die er door verdwijnen komen nieuwe terug. Hiermee kunnen we het tekort aan arbeidskrachten mee oplossen.

## Human Capital

Awareness creëren dat men gaat kiezen om in of met robotica te gaan werken. Kopie van slimstevierkantem eter.nl voor het onderwijs.

## Participanten

Groei van participanten met onder meer partijen als TMC, ABB, Kuka, Yaskawa, Olmia Robotics.

# Groei van de community

## **Nieuwe leden 2018**

Vectioneer | Smart Robotics | Hemabo | Lely Industries | VertiDrive | Robomotive | Saxion Hogeschool | EPLAN | Microsoft | FUJITSU Glovia | Innovation Industries Management | Codian | Fraunhofer Project Center | EPR | Synano | Technobis | FMI Hightech Solutions

## **Met wie zijn we in gesprek**

TMC | Schneider Electric | Kuka | ABB | Fanuc | Engie Services | NIBC | Rolan Robotics | Olmia Robotics | Yaskawa (2019) | IXON | Pilz Nederland

## **Nieuwsbrief Holland Robotics gaat naar 748 adressen**

# Internationalisering

**Twee Europese projecten zijn afgerond in januari en juni 2018:**

- **EuroCPS**

Door middel van cascade funding, technologisch advies en beschikbaarstellen van platformen MKB bedrijven ondersteunen bij het ontwikkelen van Cyber Physical Systemen

- Realiseren van nieuwe markt/innovatie kansen voor deze MKB bedrijven

- **Silicon Europe Worldwide**

Door middel van gericht netwerken in geselecteerde niet Europese regio's deuren openen voor bedrijven in die regio's (Taiwan en NW-USA)

- Realiseren van nieuwe marktkansen in, voor MKB moeilijker te bereiken maar belangrijke markten

*Solide Europees netwerk gebouwd waarvan bedrijven gebruik kunnen maken voor internationale innovatie*

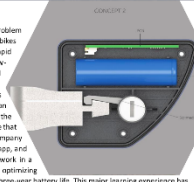
# EuroCPS

## Applying the Brakes to Bicycle Theft with Asset Tracking and the IoT

**Challenge & Solutions**  
Domotica Control, a home automation startup, wanted to do something about the problem of bicycle theft in the Netherlands, where about 120,000 of the nation's 2.2 million bikes are reported stolen annually. They saw an engineering opportunity created by the rapid advent of wearable devices, a market trend that has driven development of new-generation chips with onboard sensors, highly integrated location and communication functions and very low power consumption. The Domotica Control team realized that this technology could be leveraged to produce Internet of Things devices capable of determining position both outdoors and indoors with triangulation of radio signals and inertial sensors rather than power-hungry GPS, in addition to the superior energy efficiency compared to GPS, the project aimed at a lower cost device that took up less space on the printed circuit board and required fewer antennas. The company also developed a proprietary algorithm for location, as well as a dedicated mobile app, and set out to prove experimentally that the position-determination methods could work in a complementary way, or independently, should one fail. Secondary goals included optimizing communication range and reliability, and reducing power consumption to achieve three-year battery life. This major learning experience has set the stage for a new product with invisible mounting, improved algorithms and a smartphone app that will allow users to activate the tracking device, receive an alarm notification if their bike is moved and locate stolen or misplaced bikes. It will also allow mileage tracking. A prototype of the system, called BikeIoT, incorporated an Intel Curie wearable chip and a LoRa™ communication chip from Semtech, and included a battery and secure mechanism for attaching to a bike frame.

**EuroCPS Support**  
Multiple disciplines were brought together in a targeted way under the EuroCPS umbrella, with the Dutch technology-sector organization HighTech NL providing coordination and access to industrial and academic partners.

**Digital Skills**  
Domotica Control: overall project vision and integration, algorithm and app development, label, proactive development assistance and feedback on experimental findings.  
Semtech: LoRa™ platform and chip-based implementation.  
LUT: Technological University: consulting assistance on underlying technologies, including the support on the use of inertial sensors and the analysis of acquired data.



**Company**  
Domotica Control is a home automation company located in the residential district of Dordrecht in the southern part of the Netherlands. It has 5 employees since 2014.

**Partners:**  
Intel, Semtech, LUT, TU/e, HighTech NL, EuroCPS.

**Impact / What's next**  
The company has tested the positioning algorithm, including benchmarking against GPS-based tracking, and has developed new filtering techniques to improve accuracy. The system will be tested on bicycles in Leiden and Amsterdam in 2018. The production version of BikeIoT, and an associated set of devices, are targeted for introduction in the fourth quarter of 2018, after refinement of mechanical design, algorithms and associated software. Domotica Control's goal of selling 5,000 units in 2019 is based on interest from a number of potential customer groups, including bike manufacturers and municipalities that want to measure bicycle traffic flow. Revenues are projected to exceed €300,000 in 2019 and the company expects to add one or two employees in sales. With proven success in the Netherlands, the company will gradually introduce applications in other European countries. It also sees opportunities for applying the basic technology to other types of mobile assets and equipment.



## Smart, Low-Cost Electronics Flushes Legionella Bacteria from Shower Facilities

**Challenge & Solutions**  
Legionella bacteria are a well-known source of health hazards in water supply systems. Conspicuous aerobic slime during showering cause infections in approximately 80 buildings every year, while the official related death rate is estimated to be the risk of Legionella growth regularly refreshing water in the shower facilities. The system includes a smart low-cost sensor and a smart low-cost valve for extended life periods. The units feature wireless connectivity and automatically provide highly operational functionality using just one extended layer of many page-charged devices.

**EuroCPS Support**  
Intel Research and Development supported Van Merlo in setting up a proper platform for the gateway. Intel Research and Development supported Van Merlo in setting up a proper platform for the gateway. Intel Research and Development supported Van Merlo in setting up a proper platform for the gateway.

**Digital Skills**  
Van Merlo: expertise in embedded systems/product development, measurement and control and lightweight wireless mesh networks.

**Company**  
Van Merlo is a European based project providing smart design services in order to boost and integrate Europe between innovative companies, major CPS platform and CPS competency providers.

**Impact / What's next**  
The EuroCPS SmartMesh system will be suitable for a multitude of practical applications, leading to more reliable Legionella protection at lower cost of ownership than existing solutions. Van Merlo has a distributed model-of-care system running at separate test locations. The results of the evaluation will be introduced in the development of the commercial product whose launch is planned for late 2018. The company expects to implement the system in approximately 50 locations with typically 25 shower units per location. This installed base will enable each year unit at least 10,000 units. This installed base will enable each year unit at least 10,000 units. This installed base will enable each year unit at least 10,000 units.



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### A Clearer Look at Water Purification, With Cost-Cutting Potential

**Challenge & Solutions**  
Clean water is a human requirement, and ensuring that purification processes are working properly is a crucial requirement to municipalities worldwide. This long-researched task has assumed many water treatment plants for water processing: membrane systems, but these are expensive, which are only able to occasionally detect gross underlying issues. As a result, water treatment plants would simply seek new membranes – and a result of this is that the water is not clean, and the membranes are not replaced. Detecting these problems earlier would simply seek new membranes – and a result of this is that the water is not clean, and the membranes are not replaced.

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# Silicon Europe Worldwide

## De zes SiEuWW clusters zijn actief verbonden met “business communities” in Taiwan en NW-USA

- Gezamenlijk mogelijkheden creëren waar bedrijven in de doel regio's met de Europese bedrijven in contact kunnen komen:
  - Tijdens Computex Taiwan
  - European innovation week (Tw)
  - Tijdens Semicon Taiwan
  - Tijdens Semicon Europa
  - Business connection forum Brussel
  - Industrial dialogue Brussel
  - Business connection forum Albany

*Meer dan 50  
Nederlandse  
bedrijven hebben  
van deze  
gelegenheden  
gebruik gemaakt  
om in contact te  
komen met  
buitenlandse  
potentiele partners*

# Semicon Europa

- In november 2018 organiseert HTNL voor de vierde maal een gezamenlijke HHT stand tijdens de Semicon Europa.
- Inmiddels is het aantal deelnemende bedrijven verdrievoudigd





# Innovatie

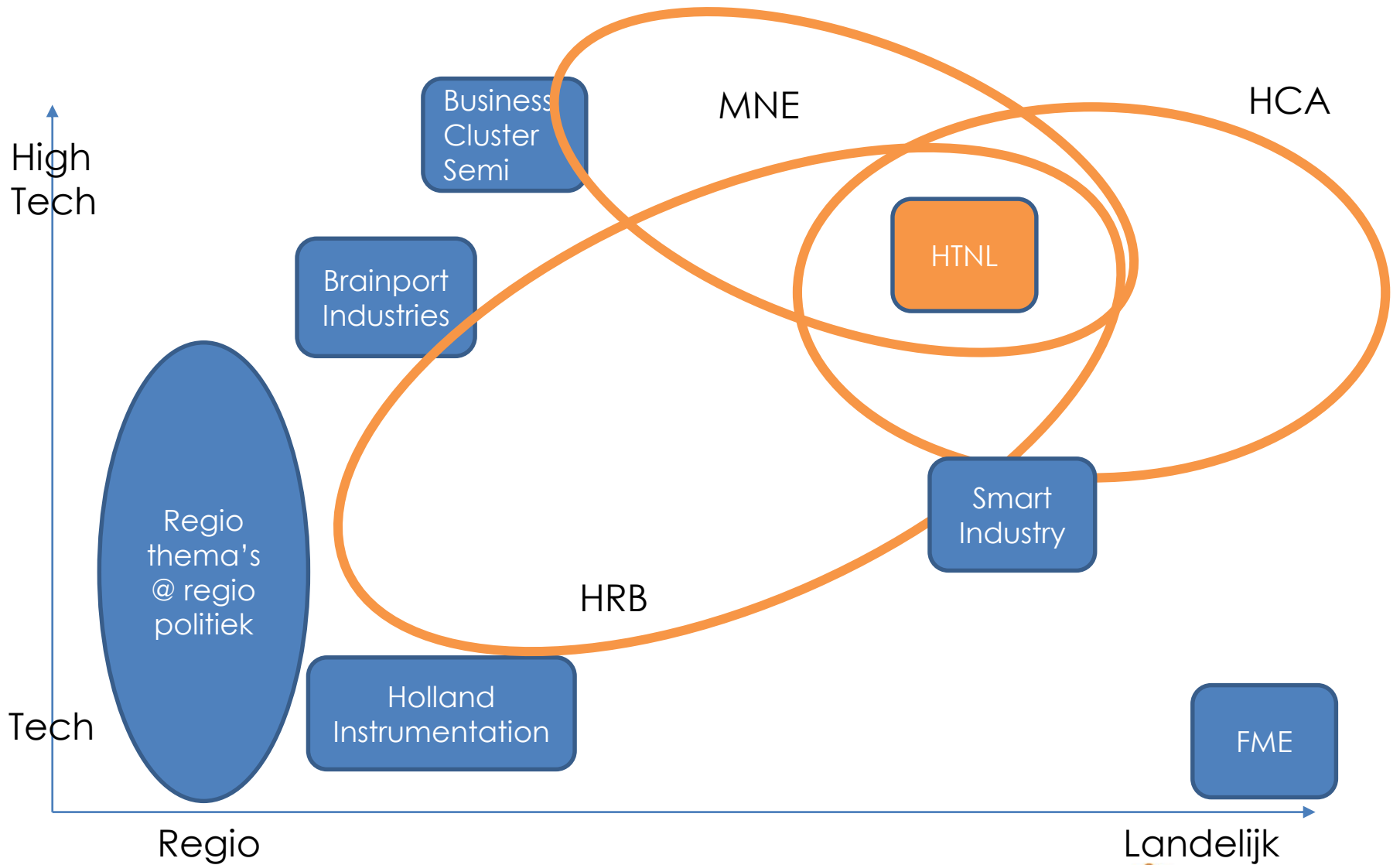
## **Nieuwe kansen voor semicon equipment bouwers**

- Producenten en ontwikkelaars van Integrated Nano Photonics worden middels toegespitste workshop gekoppeld met producenten van productie equipment

## **Nieuwe kansen voor de Nederlandse industrie**

- In Dresden en Villach worden nieuwe 300mm fabs gebouwd. Momenteel wordt er gewerkt aan het leggen van contacten om de Nederlandse industrie te betrekken bij deze nieuwbouw

# 2018 en verder



# The powerful network of High Tech NL



# Leden overzicht

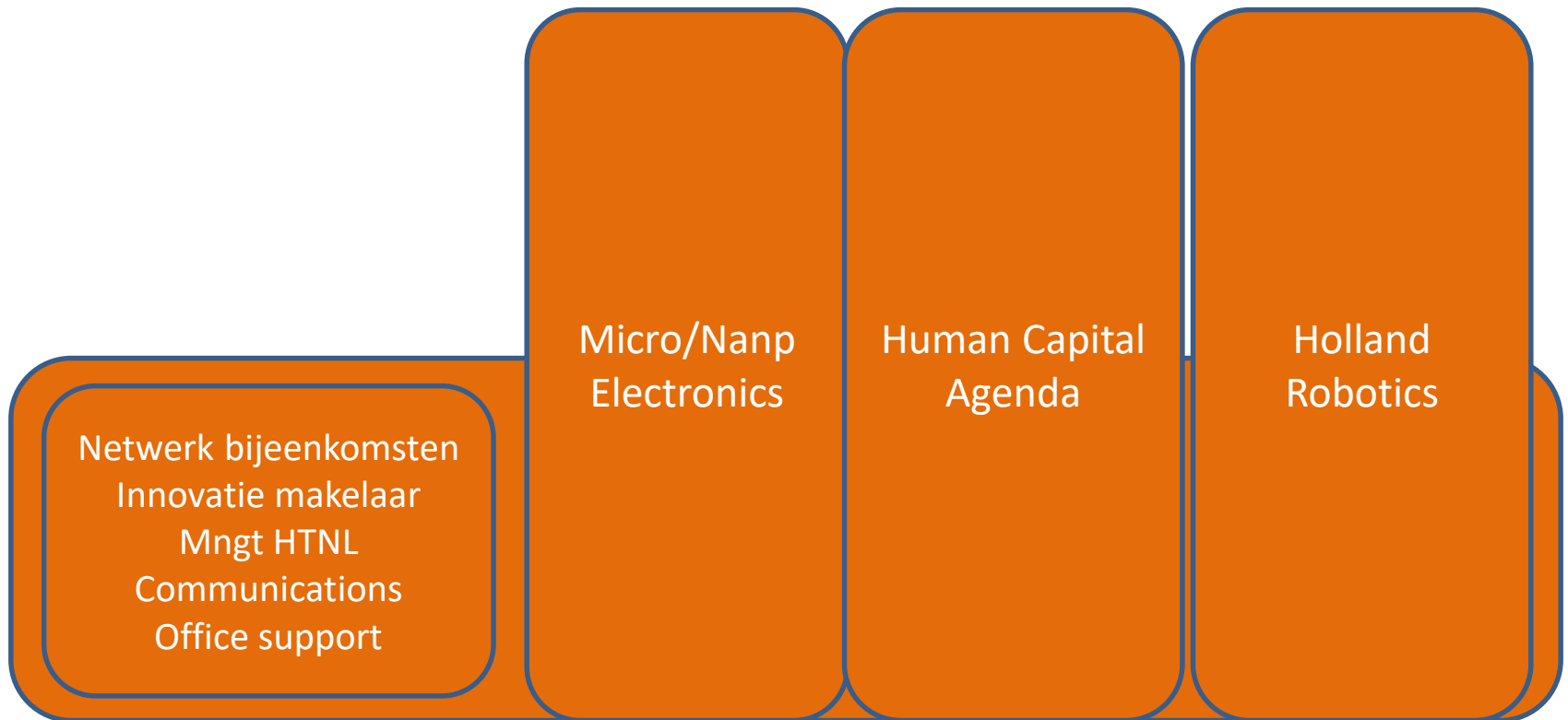
	2017	Totaal 2018	(waarvan HRB)	
A	52	60	10	17%
B	48	48	9	19%
C	9	14	6	43%
D	6	5	1	20%
E	11	15	9	60%
Associates	29	24	2	8%
totaal	155	166	37	23%

# Financials

	2017 B	2017 R	2018 B	2018 Progn
<b>Totaal inkomsten</b>	748	887	721	786
<b>Totaal Uitgaven</b>	621	878	690	727
<b>Resultaat</b>	127	9	30	59 (-36=23)

Ontwikkeling EV over 2017 : 250→250

# 2018



# Bedankt voor uw aanwezigheid

