



WELCOME TO **BRAINPORT EINDHOVEN**

Europe's leading innovative top technology region

“Eindhoven wins Eurocities award
for best regional cooperation”

- EUROCITIES, 2011



“Eindhoven is awarded
for being world’s most
Intelligent Community
of the Year”

- ICF, 2011

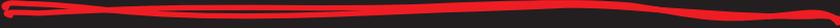


“The Dutch city of Eindhoven ranks third
as European City of the Future”

- FDI Intelligence, 2014

BRAINPORT EINDHOVEN REGION

CO-CREATING THE FUTURE



The Brainport region, with Eindhoven at its heart, is a world-class top technology region. High tech and design are combined with an advanced high-end manufacturing industry and entrepreneurship. Close collaboration and sharing knowledge are part of our DNA and characterise the open innovation culture which makes Brainport smart and strong.

By quickly anticipating to rapid worldwide changes and continuously connecting to new people, we create new business opportunities. This attracts talent and enterprises from all over the world. In a unique business climate we work together in finding solutions for societal challenges for health, mobility, energy, food and safety. As the high tech growth accelerator of the Dutch economy and part of the technological backbone of Europe, Brainport is a global frontrunner in innovation.

Situated in the South of the Netherlands, the Brainport region has a population of 750,000 and a workforce of 400,000 people. The integrated collaborative approach has received international recognition and acclaim over the last years. The economic success of Brainport can be attributed to the culture of trust and understanding that the future lies in co-creation, expressed in the Triple Helix cooperation between industry, knowledge institutions and public authorities.

ONE OF THE THREE PILLARS OF THE DUTCH ECONOMY

The economic capacity of Brainport is crucial to the international competitiveness of the Netherlands. Brainport is one of the three pillars of the Dutch economy, along with Amsterdam (airport) and Rotterdam (seaport).

TRADEMARK WITH A HISTORY THAT GOES BACK OVER A CENTURY

The Brainport region has a long track record of innovation, that goes back over 125 years ago when the Philips brothers came to Eindhoven and started their lightbulb company in a small factory in the centre of town. Their company would soon grow out to be a multinational electronics manufacturer, providing employment for many people in the region and elsewhere in the Netherlands. Besides being a household name, the company was responsible for ground breaking inventions and products, such as the first overseas radio broadcast, X-ray tube, compact audio cassette, videophone, CD, DVD and Blu-ray. Technology developed at Philips in the 1980s led to the foundation of ASML, which currently is the world's largest supplier of lithography machines for the semiconductor industry.

DOMINATING R&D EXPENDITURE AND PATENT REGISTRATION

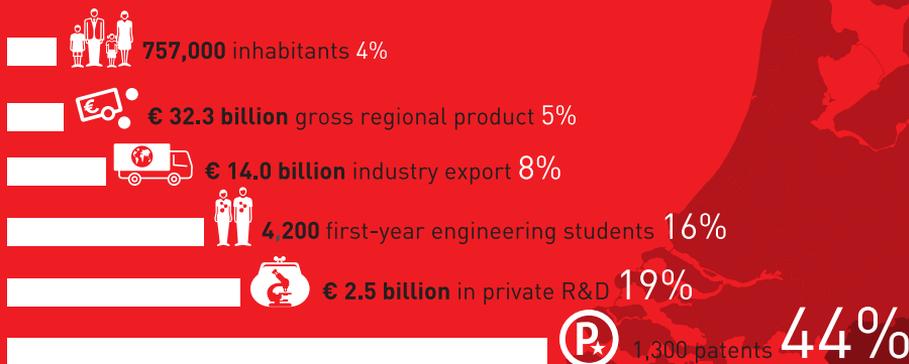
In the early 2000s, Philips scaled down and divested its divisions, such as semiconductors, optics and x-ray systems. These developed into OEMs in the high tech systems sector, including NXP, FEI and PANalytical. Another economic driver of the Brainport Eindhoven Region is truck builder DAF. Nowadays the region dominates the private R&D expenditure in the Netherlands, with 5 out of the top 7 enterprises, accounting over € 2.5 billion annually. The Brainport Eindhoven Region also registers the most patents in Europe by far, almost doubling runners-up Stockholm and Munich.



TODAY'S CHALLENGES BRING TOMORROW'S ECONOMIC OPPORTUNITIES

In Brainport we come up with solutions for some of the big issues that societies face today in the areas of health, mobility, energy, food and safety. We tackle these challenges with a combination of technology, design and social innovation – precisely the strengths of Brainport. We stimulate our companies and knowledge centres to come up with creative, new solutions. This offers many companies a new window of opportunity to search for connections with other sectors and thus tap into global markets that previously were out of reach. In this way Brainport not only turns tomorrow's challenges into economic opportunities, but contributes to a more sustainable, healthy and safe society.

SHARE OF BRAINPORT IN DUTCH COMPETITIVENESS



● HIGH TECH

The world-class High Tech region dominates the Dutch top corporate R&D (€ 2+ billion) with companies ASML, Philips, NXP, DAF, VDL and FEI. Markets range from semiconductors to precision, nanotech, logistics, automation and handling/processing. Knowledge infrastructure is provided by TU/e, TNO, Holst Centre, Solliance, EIT Digital. The High Tech Campus Eindhoven is an open innovation hotspot with 135+ international companies. Excellent sub-sectors include photonics, data science, additive manufacturing, nanotech, high tech software. • **(61,300 jobs)**

● DESIGN

As an important enabler for technology, the Design industry encompasses icons Design Academy, Philips Design, TU/e Industrial Design faculty, Dutch Design Week (250,000 visitors). The cluster's strength lies in contributing to product development for the manufacturing industry. Making easy usable, comfortable 'good-looking technology'. • **(11,500 jobs)**

● HEALTH

An extensive network of companies in the region operate in the Health cluster, focusing on remote/wearable sensing and healthy aging. TU/e invests a lot of research capacity in biomedical and medical technology, in collaboration with medical institutions and industry, such as the Holst Centre and Philips Healthcare. • **(6,000 jobs)**

● ENERGY

Focus of the Energy sector lies on solar films at international research partnership Solliance and applications for sustainable energy supply for heavy duty batteries, complemented by the EIT-KIC InnoEnergy co-location. • **(1,000 jobs)**

● MOBILITY

The Mobility cluster focuses on R&D, systems and smart mobility. The Automotive Campus houses test facilities and research institutes TNO Automotive, AutomotiveNL, TASS as well as TU/e, applied science and vocational education. Major companies are DAF Trucks, VDL Nedcar, TomTom, NXP, Philips. • **(7,800 jobs)**

● AGRIFOOD

The Food sector has strong synergies with High Tech (Agritech) and Health. Major companies, Campina, Bavaria, VION, Nutreco are complemented by hundreds of SMEs. Machinery for food production is an important application area and the Food Tech Park Brainport is the focal point for research, business and education. • **(15,600 jobs)**

● SAFETY

Safety is key in the comfort of the public space and therefore the quality of life in our region. The Brainport region houses the Dutch Institute for Technology Safety & Security (DITSS) where public authorities, knowledge institutions and business work jointly in using technology to improve safety. A good example is the bar area Stratumseind in Eindhoven which features the living lab De-escalate where the risk of brawls is minimised using lighting technology. At creative district Strijp S sensors detect the sound of a window pane breaking or a chainlock clinging and warn nearby police. • **(2,500 jobs)**



“Eindhoven wins Auroralia award for best sustainable urban lighting” - LUCI association, 2014

“Eindhoven has emerged as a global center of design experimentation” - New York Times, 2015

“At 5th place the Netherlands is back at its highest position on the Global Competitiveness Index” - World Economic Forum, 2015

“Design Academy Eindhoven is a serious contender for the world’s best design school” - de zeen, 2015

BRAINPORT DOMAINS

Brainport is characterised by extremely strong high tech manufacturing, an extraordinary design sector and a unique model of collaboration. This is something to be cherished and continually strengthened. To stay ahead internationally we must constantly invest in these enablers for growth: People, Technology, Business, Basics and International. We must continue to invest to maximise returns from our ecosystem. These are the foundations of the Brainport strategy.



BRAINPORT AS THE PERFECT PLACE FOR TECH START-UPS AND GROWING COMPANIES

Start-ups create dynamics, employment and growth. Brainport is seeking to be in the top 20 start up ecosystems. This area with its technology and innovation dominance, creates the perfect breeding ground for start ups, both from within and outside the Netherlands. Each year we support a thousand or so start-ups that generate 200 highly-promising technology companies that go on to be successful. Our approach is to strengthen entrepreneurial skills, make our start-ups more visible internationally, improve the match between demand and supply of capital, and reinforce the start-up networks. Particular attention focuses on growth companies, whereby the experience of the top technology companies that have made our region what it is today like Philips, ASML, NXP, DAF, VDL Group and FEI Company can be used for both inspiration and development power. Also by stimulating the cooperation of our unique network of industrial suppliers (Brainport Industries) and through the specific support of industry clusters, we expect to achieve impetus.

- Over the past decade, the economy in the Brainport Eindhoven Region grew **1½ AS FAST AS** the economy of the Netherlands and continuously stayed below the national unemployment rate. The region had **7% MORE COMPANIES STARTING AND 19% MORE RAPIDLY GROWING COMPANIES** than the national average. The public R&D expenditure has doubled and the number of expatriates/ international knowledge workers has tripled in five years.
- The top Dutch R&D companies sees a dominance by the Brainport Eindhoven Region, accounting over **€ 2.5 BILLION TO INNOVATION EXPENDITURE** in the Netherlands in 2015: 1. ASML € 770 million • 2. Philips € 768 million • 4. NXP € 262 million • 6.DAF Trucks € 132 million • 7. VDL Groep € 87 million. The region also produces more unique products with added value than elsewhere in the Netherlands.



- TU Eindhoven **PUBLISHES THE MOST IN COLLABORATION WITH THE INDUSTRY (14.5%)** of all of the universities in the world. It has been topping these charts for the last 6 years in a row.
- Eindhoven ranked as the **NUMBER 1 INNOVATION HOTSPOT** for entrepreneurs in 2015 as per Forbes.

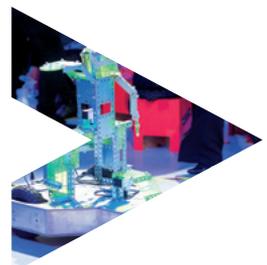


TECHNOLOGY

UNIQUE TECHNOLOGY AND OPEN INNOVATION POSITION

Our region is typified by a very strong position in the latest technologies, system integration and social innovation. Brainport excels in the technology disciplines of high-tech systems, materials and data science. Private spending on R&D and the number of patents have been at a very high level internationally for many years. This is likely to be a key differentiator in the years to come. To encourage companies to continue performing their R&D in our region, it is essential to ensure that our public R&D is given a strong boost. To this end we will intensify our lobby in the national and European governments, a process that will pay dividends for both the Netherlands and Europe. Recent scientific studies have revealed that for each euro spent on private R&D, economic growth benefits by € 2.30. We will also be profiling and promoting internationally, our unique technological and manufacturing competencies along with the quality of our open innovation campuses and institutes in much greater detail. This is important if we are to continue to attract foreign investors and companies. With the disciplines in which the region excels, we can make the difference in the future.

- Brainport Eindhoven Region registers **MORE PATENTS PER YEAR IN EUROPE** than any other region. **THE MOST PATENTS IN EUROPE: 1,266** in 2011. That is nearly doubling runners up Stockholm (698) and Munich (692).
- In 2014, The European Commission assessed that the Brainport Eindhoven Region ranks 9th as a **EU IT HUB OF WORLD-CLASS EXCELLENCE**. The region so far has the best score amongst Dutch regions and contributes significantly to the Digital Agenda for Europe.
- **SINGULARITY UNIVERSITY** from Silicon Valley opened their first branch outside the US **IN EINDHOVEN IN 2016**, because the region with its knowledge economy, latest technologies and open innovation platform, perfectly complements the philosophy of the University.
- TU/e was once again voted **BEST UNIVERSITY IN THE NETHERLANDS** in 2015.



- Eindhoven is the most inventive city in the world in terms of **PATENT DENSITY**. According to OECD **22.6 PATENTS** are registered **PER 10,000 INHABITANTS** each year, far more than runner up San Diego with 8.9.
- The European Commission has ranked the province of North Brabant **INNOVATION LEADER IN THE NETHERLANDS**, the only province to perform that has achieved this feat over the last decade. In 2014 1- Dutch provinces and the Netherlands as a whole were classified as innovation followers.



PEOPLE

A HIGH-QUALITY, ADAPTIVE WORKFORCE POTENTIAL IS ESSENTIAL FOR OUR REGION

Human capital investment is a key enabler for our region. Making sure there are enough well-educated professionals and knowledge workers is essential for the economic growth of Brainport. We must continue to attract and retain talent from home and abroad. However, the competencies demanded by companies and knowledge institutions are always changing. Apart from technological knowledge and skills, competencies like entrepreneurship, research and design as taught in Brainport are becoming increasingly vital. With the rapid tempo of societal changes, it is essential for all the actors in education and the employment market to boost their capacity to adapt. We want to give children, students and employees in the region ongoing education so that they always have the right knowledge and capacity to adapt and thus be permanently employable in our business and industry. Individual capacity to adapt is key to getting the best out of the talents of people. This collective capacity to adapt is fundamental to enabling many companies in Brainport to meet the need to combine the flexible employability of employees with the workers' need for employment security.

- Eindhoven has displayed a **HIGH INCREASE IN INTERNATIONAL KNOWLEDGE WORKERS**, between 2007 and 2012, the number has tripled in 5 years time in the municipality alone (Decisio, 2013).
- The Brainport Schools programme connects innovative ways of learning 21st century skills for primary and secondary schools to the demand of the regional economy.
- The "Lifelong learning" programme is the basis for continuously providing skill enhancement to the workforce to become more adaptable by continuously retraining – either within their own domain or acquiring new skill sets while on the job, equipping them for the needs of the future.
- The Brainport Talent Centre is one of Europe's most innovative programmes in attracting and retaining international students and knowledge workers.





BASICS

BETTER INTERNATIONAL ACCESSIBILITY, A TOP BUSINESS CLIMATE AND AN ATTRACTIVE IMAGE

An international top region should be a top-quality place to work, live and reside. The conurbation strength and urban network of Brainport can be further enhanced by ensuring excellent links with neighbouring regions in the South of the Netherlands, the two other pillars of the Dutch economy – Amsterdam and Rotterdam – as well as economic hotspots across the border. International accessibility will gain a further boost from the growth of business-related destinations from Eindhoven Airport. We strive to align the amenities and activities in Brainport, such as culture and sports, to provide world class opportunities.

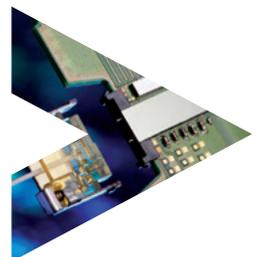
- The province of North Brabant is the second **MOST FAVOURED DESTINATION FOR INTERNATIONAL COMPANIES SEEKING TO DO BUSINESS** in the Netherlands. Most of this activity is centred in Eindhoven.



INTERNATIONAL

COLLABORATION WITH HIGH TECH AND DESIGN ECOSYSTEMS WORLDWIDE

Collaboration between government, research and industry is in our genes and is an integral feature of our success. It has brought us international visibility among other successful regions that are often keen to work with us. Our realm has widened from the provincial and national to the European and global arena. Which is logical given the international orientation and operation of our companies and knowledge institutions. This applies to the export of products and services as well as to alliances with innovation partners and the recruitment of global talent. As a region we want to attract more foreign investment to strengthen the ecosystem and boost employment. With the aim of increasing our international muscle, partners from the region have united in the Brainport International Programme, thereby intensifying relationships with high tech hotspots in Belgium and Germany, and building a network with Asian, American and other knowledge regions that can help enhance Brainport's position in terms of knowledge and economy.



BRAINPORT NEXT GENERATION STRATEGY

To be able to retain and expand the economic growth and development of the Brainport Region, a new strategy was defined in 2015. A strategy that has three key elements:

1. ADAPTIVITY IS ESSENTIAL

It is vital to be able to respond fast and capably to new developments. Those that adapt best will survive in the end. The rapidly changing markets make the traditional models redundant. So, as a region we have to align our strategy accordingly. With the world around us changing rapidly, we have to gear up for globalization and digitalization, which are driving these changes at breakneck speed. While some regard rapid changes as a threat, we see it mainly as a new opportunities, which can be game changers for the region. Brainport is traditionally a smart region, with a huge amount of research and development that has been increasingly better transformed into economic success in recent years. But being smart and strong is no longer good enough. Today's world requires business and industry, government, educational and research institutions, entrepreneurs, employees and residents of the region to be able to respond to the changes. The capacity to adapt is essential.

2. FROM TRIPLE HELIX TO MULTI HELIX

We are looking for a new route to the future, a path that we have not previously chosen. It will be somewhat chaotic and disruptive. We will have to accept before we start that we may be *out-of-control* now and then. We have to accept the errors we make and learn from them. It is a route we want to plan together and inclusively. If you want to be adaptive, you have to adjust to the flow, change faster and create smart coalitions. This is why we are shifting from Triple Helix to Multi Helix. No longer restricted to the university-industry-government triangle but involving citizens, customers, consumers, investors, designers, artists and corporations. Success according to us is defined by trying new things, being prepared for things to go wrong and start again. The rapidly changing markets make the traditional models redundant. So, as a region we have to align our strategy accordingly.

3. SCENARIOS

While the future is unpredictable, we can still prepare by looking ahead. By analysing trends, we can sketch pictures of the future, and plan for strategic choices. For Brainport, in dialogue with experts and representatives from the ecosystem, three scenarios have been drawn up. Each scenario sketches a completely different picture of the future. By considering these possible futures now, we can respond faster and better.



“Eindhoven encourages ‘entrepreneurial discovery’
as a leading edge innovation district”

- The Brookings Institute, 2014

“Singularity University pilots Eindhoven, the Netherlands,
for global expansion”

- Singularity University, 2015

“Eindhoven has grown into a leading city in the 21st century
in technology and design” - Business Insider, 2015

“The world’s most innovative countries:
the Netherlands are in fourth place” - The Global Innovation Index, 2015



BRAINPORT DEVELOPMENT ECONOMIC DEVELOPMENT AGENCY

Brainport Development is the economic development agency of the Brainport Foundation and cooperates with many partners on strengthening the Brainport region. Brainport Development develops the regional economic strategy, develops and realises projects, offers business advice and innovative business premises and promotes Brainport in the Netherlands and abroad.

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