



Antwerp Diamond Innovation Opportunities

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City of Antwerp Contact
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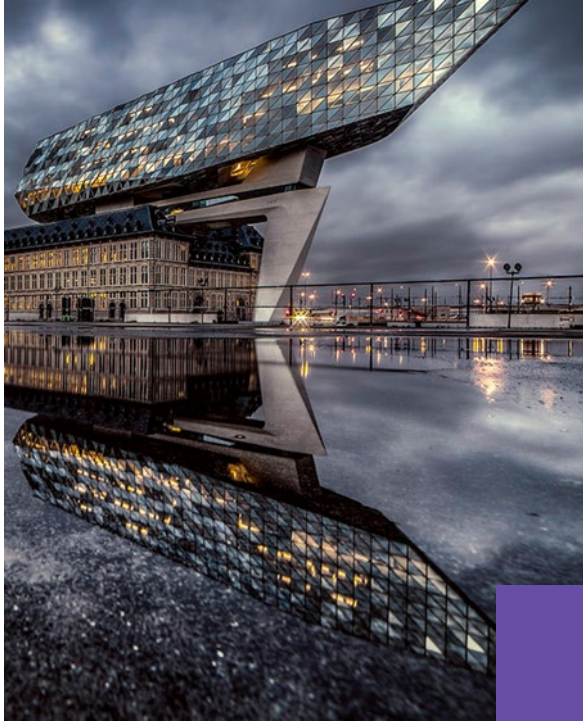
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01 Programme introduction

Antwerp Diamond Innovation Opportunities is a **support programme** initiated by the City of Antwerp in collaboration with Verhaert, Masters in Innovation.

During this operating year, the city offered **personal coaching** to four companies. Each pathway is built on one or more priority themes that will be discussed below. The envisaged achievements can potentially **offer leverage** for the diamond industry.

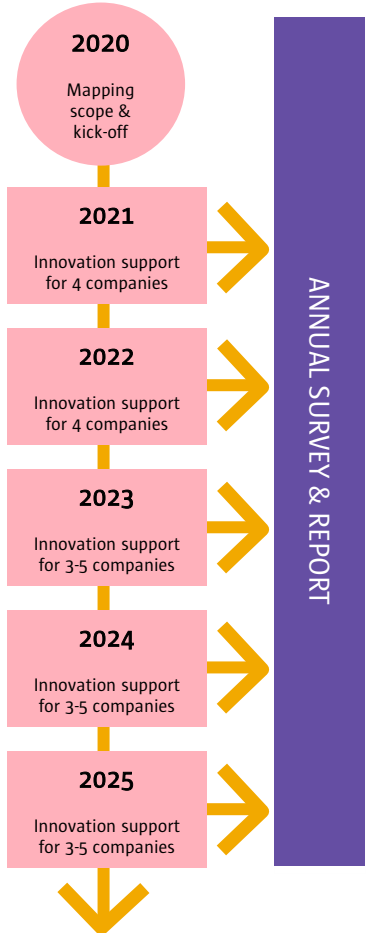
The entrepreneurs discuss the **challenges** they faced, as well as their **solutions**, in a brief interview, and how the coaching helped them to develop a solution.

Are you **interested in starting up an innovation pathway**? Find out more about the selection criteria and procedure via the link or email below.

Find out more about the selection criteria and procedure via the link or email address below:

businessinantwerp.eu/diamond

Email: antwerpsmostbrilliant@antwerpen.be



FINANCING



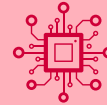
CROSS-INDUSTRY NETWORKING



AUTOMATION & ROBOTISATION



DIGITALISATION



DATA-ANALYTICS



SYNTHETIC TRADE & PRODUCTION



02 Summary six topics of innovation

The six priority levers for innovation will be discussed in a brief summary

1. For **financing**, both innovative technologies that facilitate transparency and compliance with regulatory frameworks as well as FinTech solutions, could increase the so-called “**bankability**” of the industry and, moreover, **foster confidence** from the part of traditional banks.

This is **in addition to the AWDC efforts** to guarantee basic banking services to all registered diamond companies in collaboration with other levels of government.

Financing and banking services continue to be a **crucial focus for diamond companies**. The basic banking service, which was approved at the end of 2020 and will be in force shortly, is a new instrument for diamond companies, in addition to existing innovative initiatives by specialised payment platforms.

2. Having an **online presence** and the ability to **operate online** can make **all the difference** in today’s diamond business. Digitalisation is not limited to simply having a website and some social media presence.

The internet has **enabled new services and business models** that were not previously possible and has increased the potential global impact of a company. Harnessing the power of the digital world remains untapped potential for an industry that has relied on the same ways of doing business for centuries.

Digitalisation remains an **area of interest**, in terms of further **standardising** and **simplifying processes** and **investment in compliance documentation and tracking technology**.

The presence of tenders in Antwerp is a strength, but the need to further expand tender facilities remains.

3. Apart from the **high-value stones**, regaining market share in **diamond manufacturing** in Antwerp will require the use of **modern production techniques and machinery** as has become the standard in nearly all industries in Western Europe over recent decades. Supporting services that make use of remote and automated grading, artificial intelligence and assisted or automated sorting are expected to become the norm in the next years.

Automation and robotisation technology could also be a game-changer in providing reassurances on provenance and traceability of diamonds throughout the value chain.

In terms of robotisation & automation we must make a **sustained effort** to keep the labour costs of specialised services low. Investments can sometimes be shared between several parties simultaneously or be financed through programmes such as VLAIO.



02 Summary six topics of innovation

The six priority levers for innovation will be discussed in a brief summary

4. Data analytics.

The diamond industry is only just beginning to make use of the tremendous amount of data generated on a constant basis in this increasingly digital world. With **aggregated information** from all actors in the value chain, such as diamond producers, diamond traders, online trading platforms and retailers, it is possible to create **valuable market insights**, make **more solid predictions** of demand, and **estimate market prices and stock valuation**. Local AI & engineering service providers have built up significant expertise which can be applied to the diamond industry with the help of industry experts.

Data analysis **continues** to be an **underexploited lever** for innovation. Experts are of the view that there is no organised data collection or analysis in the pipeline, although some organisations we coached, as part of an innovation pathway, have explicitly developed added value around this.

5. A triple helix collaboration strengthens many well-functioning ecosystems present in Antwerp. Collaboration between **industry-partners, universities and government** is generally well-established in other industries. However, **cooperation and cross industry networking is rare** within the diamond industry.

The diamond industry should pay more attention to B2B-networking across industries, to **benefit from solutions other industries offer**. There is still a lot to learn in how to activate Antwerp's key strength.

In terms of networking, new initiatives are emerging that focus on **vertical integration** in the value chain and the shared development of new tools or platforms.

The City of Antwerp is **often a driver** in connecting entrepreneurs with innovative hubs and other industries.

6. **Technology** has made **significant leaps** over the last few years, enabling synthetic production & trade of gem quality, the market share of which is expected to grow within a certain target group receptive to its alternative narrative. In any case, there is a strong need for a **clear, traceable and transparent** differentiation between and detection of natural and laboratory-grown diamonds, on both B2B and B2C level.

Furthermore, **industrial applications** for diamonds are expected to increase in the coming years with applications being developed in technology and computing.

The emergence of **laboratory-grown diamonds** continues to be an interesting lever worthy of monitoring, both in the jewellery and industrial markets. Antwerp can play a unique role in this growing ecosystem, in trade, production and detection.

03 Interview Almax easyLab

Almax easyLab

At Almax easyLab they believe that **science** and **technology** will help tackle global challenges (climate change, health, energy, etc.). That is why they want to enable scientists to understand these matters better through **high-pressure and optical diamond instruments**.

Almax easyLab is a Belgian diamond polishing factory specialising in the **polishing of optical diamond components**. These optical diamond components find their applications in high-pressure research at universities and research institutes around the world.

A product of them, the **diamond calibration windows**, has previously been supplied to **NASA**. One of their diamonds is currently on **Mars** looking for proof of life on the red planet. **Almax easyLab in space!**

Innovation challenge

Almax easyLab was facing some challenging issues on how to analyse the purity of rough diamond material.

In this case they are not talking about inclusions, but about the “**disruptive**” content of **nitrogen** and/or **boron** in diamond.

As the applications are extremely demanding, such impurities in the carbon matrix of diamonds should be in the ppb levels.

Although they are in contact with many universities, **finding a hands-on lab** that was able to perform certain measurements for them **was not straightforward**. The obtained solution will, moreover, also be applicable to gem diamond companies.

Solution developed

Having heard about their case and the high level of optical expertise they were looking for, the programme team forwarded their request to an affiliated company of Verhaert that creates advanced industrial, medical, space and security OEM optical systems. They discussed several measurement options.

They concluded that one specific measurement method had been used the most by other groups in the past and that they should stick to that method. Verhaert took their problem on board and **came back with a university that could perform the measurements for Almax at a short notice**.

How did the coaching enable you to accelerate?

Access to the City of Antwerp and Verhaert network greatly **accelerated our search** and provided some very conclusive answers to our research question!” This collaboration has **certainly paved the way** for **further expansion** for our business and research clients.

“The Antwerp Diamond Innovation Opportunities programme has helped us find the right partners to establish a validation method to certify the diamond quality we supply to our customers.

Now we are ready to pave the way for further expansion in the field of quantum sensing and computing.”



Mr Koen De Hantsetters
Owner-Manager

Looking for challenging or demanding diamond projects in the field of optics or quantum sensing or computing? Contact us at:

Koen De Hantsetters

Almax easyLab

kdh@almax-easyLab.com

04 Interview Chroma Diamonds

Chroma Diamonds

In 2018, Alexander co-founded Chroma Diamonds with Johan Dieltjens and Chris Verhaegen. Jan De Henau joined shortly afterwards. They are four entrepreneurs with experience in the diamond industry. Their mission is “adding the 5th C!”. The company’s 5 C’s stand for Consultancy, Calculation, Colour Optimisation, Cutting & polishing and Creation. They specialise in **coloured diamonds**, a niche world. Their business encompasses acquisitions on behalf of their own company, partnerships as well as services for third parties.

Innovation challenge

What is essential when polishing coloured diamonds is to **obtain the highest possible colour intensity without unnecessary weight loss**. The assessment is usually based on the experience and expertise of the buyers themselves, what they see with their own eyes rather than on the basis of technology. Furthermore, the cutting is an important factor determining whether or not a certain colour grade is obtained. Incorrectly estimating the colour outcome or not cutting or polishing optimally could result in a valuation that is half or even less of that initially estimated.

To limit the margin of error, they want to **develop a device** that, based on a calibrated set-up in combination with the input of an Artificial Intelligence based database, **predicts the outcome as accurately** as possible.

Solution developed

The first steps in the development of an autonomous device with the working title ‘**The Chroma Judge**’ are now complete. They have created a product architecture on which further development of the product will be based.

Chroma is looking into the next phases of development together with Verhaert. To this end, they are **looking for an investor**. The first steps have been taken and different options are being considered.

How did the coaching enable you to accelerate?

The rough idea, which we have had for some time, was finally analysed, is currently been planned and is ready to go for the next developmental stages. The **City of Antwerp** putting us in touch with the **right people** has been an **immensely important first step** in our growth.

“The Antwerp Diamond Innovation Opportunities programme finally gave us the opportunity to adopt a systematic approach to shape our idea: analysis, quick designs, planning and now we are ready to further develop our idea.”

If you are looking for advice on how to best process your coloured stones, get in touch via alexander@chromadiamonds.com or jan@chromadiamonds.com



Mr Alexander Appels
Founder



Mr Jan De Henau
Co-Owner

05 Interview VR Diamonds

VR Diamonds

VR diamonds is a family business. The company has been in the family for three generations and will continue to grow in the future. Philippe Klapholz has always been CEO of the company. The next generation is getting to know the business through and through and are enjoying contributing to the modernisation of the company within their own areas of expertise.

Their main activity is **B2B trading in lab grown diamonds for all industrial purposes**. VR sells all expected products, such as 2 or 4 point sawn, dressers, HPHT plates etc. Where they excel is in the quality and precision of all their diamond products.

Their motto is “It costs nothing to be customer-focused, friendly and respectful but the returns are immense”. This is key in their business. With a high number of returning orders and long-lasting relationships, customer satisfaction and retention is solid. **Further growth and attracting new customers** is next on VR Diamonds’ list.

Innovation challenge

In order to grow the business, VR had to look at **new ways to innovate**. It was time they took their digital aspect to another level. How could their business be found online? How best position the business as a recognisable and attractive brand in a B2B industrial environment? VR wanted to apply their motto by looking at how they could improve the digital experience of clients.

Solution developed

VR Diamonds is now on a trajectory where they are taking a **deeper look into the marketing strategy** behind the company. This has never been looked at before and makes it easier to grow and create opportunities for the future.

During workshops with Verhaert and the City of Antwerp, they deepdived into their **online customer journey**. A substantiated mapping of the Unique Selling Points and insight into the needs of their customers gave them a firm foundation to prepare their marketing plans for deployment.

How did the coaching enable you to accelerate?

The programme made sure we could **focus** on the **future** and **opened our eyes to digitalisation**. The in-depth knowledge of our client base & products combined with a structured approach in workshops, has led to further insights into our company, from both **management and customer point** of view. This ensures a future for the coming generations in our company. The establishment of a new company ‘Diamond Vision’ illustrates the confidence we have gained throughout the coaching process.

“The deep dive we took into our strategy during the programme, supports our growth and helps us actively create future business opportunities.”

If you are looking for diamonds for industrial applications, contact philippeklapholz@mac.com



Ms Cleo Klapholz
Communications Specialist



Mr Maxime Klapholz
Technical Operator

06 Interview AWDC

AWDC

As the official representative of the diamond community, the **Antwerp World Diamond Center** offers a full array of services and information to Antwerp's diamond professionals and those that want to join the business community.

In the pursuit of a thriving, sustainable and transparent industry, their legal, financial, fiscal and compliance experts assist in various activities such as providing **general legal & Anti-Money Laundering (AML) information, tailor-made advice, training and seminars.**

Their AML and Compliance Helpdesk assists 1600 diamond dealers every year with AML and other compliance issues. The compliance helpdesk also helps traders with finding a bank account in Belgium.

Innovation challenge

In recent years the Belgian banking industry has become more hesitant to provide basic banking services to the many local diamond companies. **Finding ways to bridge the existing gap between financial institutions and diamond related companies looking for banking services**

is **fundamental** for further growth of Antwerp as the world's diamond hub.

Solution developed

In a recent workshop with local compliance experts from the banking industry, AWDC discussed several **concepts that will unburden both diamond related companies and banks when establishing new relations.** The challenges are mainly related to the collection of and easy access to Know Your Customer (KYC) information and Transaction Monitoring data on new customers.

One of the promising concepts is a **database** where banks can easily find all necessary documentation to get to know a new diamond trader. Such a digital platform will not only **reduce costs** for banks, but it will also **increase credibility** as organisations like AWDC and FOD will automatically transmit their available information to the system. On the other hand, diamond traders will need to put less effort into providing the required onboarding documentation to the bank, resulting in a **win-win situation** that is advantageous to all parties involved.

How did the coaching enable you to accelerate?

The programme has helped us to identify some concrete concepts regarding solutions for basic banking service challenges in the diamond industry. For years, we have been aware of the existing challenges faced by both banks and Antwerp diamond dealers, but **the creative approach and solution-oriented exercise during a recent expert focus group provided some promising concepts.**

"The compliance experts within the Antwerp banking community gave us very valuable insights for future innovations."

If you are looking for advice on banking, Anti-Money Laundering and other compliance issues, get in touch via trst@awdc.be or call 03 222 05 03



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We would like to thank our contributors for sharing their personal innovation experiences.



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Please note that the contents of the chapter on the six topics of innovation do not reflect the opinions or beliefs of any of these experts.