

SPECIAL REPORT

Diamond Commission



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Technology has changed the diamond industry, but how well are we adapting to technological changes?

By Udi Sheintal, President
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"Our lives are being shaken to their very core by technological change, with the Fourth Industrial Revolution transforming economies as never before," wrote Jennifer Blanke, the chief economist at the World Economic Forum, in an article published earlier this year.

In principle, the application of successful new technologies is a positive thing, improving output, competencies and productivity. But they also can be an unsettling factor, when changes in the existing order render certain products, people and accepted modes of operation inadequate and maybe even obsolete. Who cannot argue that applications and concepts like Uber and Airbnb have not democratised and made more efficient the taxi cab and hotel industries? But at



the same time they play havoc with the lives of individuals, who have earned an honest living in those sectors for many years.

The intersection of business and technology is a common theme in this Special Report, which investigates developments currently being played out in the diamond industry, as we approach the 2016 CIBJO Congress in Yerevan.

While the diamond industry ordinarily would not be considered at the vanguard of the Fourth Industrial Revolution, technological breakthroughs have shaken it to its core, both in the positive and in the not so positive sense.

That we will be changed by technology is both undeniable and unavoidable. However, by better understanding the impacts of the new technology and acting accordingly, preferably as an industry rather than as individuals, we will be more likely to enjoy its benefits, and less likely to be victims of the change it precipitates.

The means of distinguishing synthetics

Synthetic manufacturers are our industry's alchemists, transforming pure carbon into man-made diamonds. This is not a new product. Synthetics have been produced since the early 1950s, first in laboratories and soon afterwards also in large factories, operated by established companies like General Electric, Sumitomo Electric Industries and De Beers. But they manufactured goods for industrial purposes, and had little interest in refining their output for the jewellery industry.

It was only after 1990, with the fall of the Soviet Union and the export from Russia of low-cost High-Pressure High-Temperature presses, that smaller, independent firms began considering producing gem-quality diamonds in sizeable quantities. At about the same time, scientists synthesizing diamond wafers for the electronics industry began to look for market opportunities in the jewellery sector.

The presence of gem-quality synthetic diamonds in the market is an irreversible fact, although the number of goods available are still relatively low. A Morgan Stanley study, which will be reported on at length in this report, suggests that it currently



Udi Sheintal, President of the CIBJO Diamond Commission.

represents 0.5 to 1.6 percent of the global rough diamond market by value.

The CIBJO Diamond Commission has devoted a considerable amount of work to developing standards and nomenclature that clearly differentiate between natural and synthetic diamonds, and these are unambiguously stated in Clause 4.3.1.1 of the Diamond Blue Book: "The fact that a synthetic diamond is wholly or partially synthetic shall be disclosed. Only the term 'synthetic,' 'laboratory-created' or 'laboratory-grown' shall be used to describe synthetic diamonds and these terms shall be equally as conspicuous and immediately precede the word 'diamond.'"

This definition was effectively adopted by the International Standards Organization when it published standard ISO 18323 in July last year, and reiterated that, if the terms "synthetic," "laboratory-created" or "laboratory-grown" does not precede the word "diamond," it can reasonably be assumed that the gem is a natural stone.

I can proudly report that CIBJO Diamond Commission Vice President Harry Levy was the chairman of the Technical Committee that oversaw the formulation and ratification of ISO International Standard 18323.

There have been persistent reports of synthetic stones being secreted into parcels of natural



Harry Levy, Vice President of the CIBJO Diamond Commission and the Chairman of the Technical Committee that oversaw the ratification of ISO International Standard 18323.

diamonds, and in particular parcels of melee. Such a practice would clearly be considered both unethical and fraudulent by any dealers insisting that the CIBJO Diamond Blue Book rules and ISO Standards be applied.

Synthetics' potential impact on the business

The growing presence of synthetics in the market have instigated a good deal of anxiety in the industry. There have, to date, been few indications that show the natural diamond market will be impacted, but the recently released study by Morgan Stanley does provide a number of scenarios and appropriate strategies.

The Morgan Stanley report suggests that the respective influence of three variables will bring about three possible outcomes.

The first variable is the success of marketing efforts being carried out predominantly by major rough diamond producers, which will assist consumers in distinguishing between natural and synthetic diamonds, and internalising that they are two separate product classes. The second variable is the development of synthetic detection technologies, and the degree to which these

technologies will be inexpensive and easy to use. The third variable will be the volume of synthetic melee produced in China, which is to say polished goods smaller than 0.2 carats.

One possible outcome, which the Morgan Stanley report defines as "No Threat," refers to a situation where the synthetic diamond category fails to make a breakthrough, because consumers are unwilling to purchase their goods at a price point that makes the return on investment attractive to producers. This, the report's authors said, would come about from a combination of heavy marketing by rough diamond producers, to the tune of about \$1.5 billion per annum, or about 10 percent of revenue, and detection technology that is economically available for all participants in the industry, as well as low production by Chinese synthetic producers. The probability of this happening, Morgan Stanley stated, is 30 percent.

At the other end of the scale is an outcome that the Morgan Stanley Report defines as "Substitution," and it refers to a situation where consumers are indifferent about the differences between natural and synthetic diamonds, and select synthetics because of their lower cost. Such a situation would clearly be devastating for the natural diamond business. It may come about if the investment in marketing stays at its current level of about \$100 million per annum, detection equipment remains costly, especially for smaller sizes, and the Chinese massively increase the volume of synthetic melee



Moti Besser, Vice President of the CIBJO Diamond Commission.

in the pipeline. The probability of this happening, Morgan Stanley stated, is 5 percent, in part because synthetics producers may be reluctant to make the necessary investments in production technology, if they are concerned that the risk of prices falling below economical levels is too high.

The outcome with the greatest likelihood, according to Morgan Stanley, is what it defines as the "Alternative" scenario. It will depend on about a \$700 million per annum being spent on marketing natural diamonds, which will be about 5 percent of total revenue, as it was in the 1990s. Detection technologies will be available for all sizes, but only really economical in the non-melee categories. In this scenario, synthetic diamonds could come to comprise 15 percent of the small-stone market and about 7.5 percent of the larger-stone market. It is worth noting that, currently, melee totals about 68 percent of total production in terms of carats, but it equals only 18 percent in terms of value. Morgan Stanley estimates the probability of this scenario being realised is 65 percent.

What we can take away from the Morgan Stanley study is that the existential threat posed by synthetics to the polished diamond market is slight, but we need to act proactively to ensure that it remains that way. Spending on marketing has to return to at least the same level as it was when De

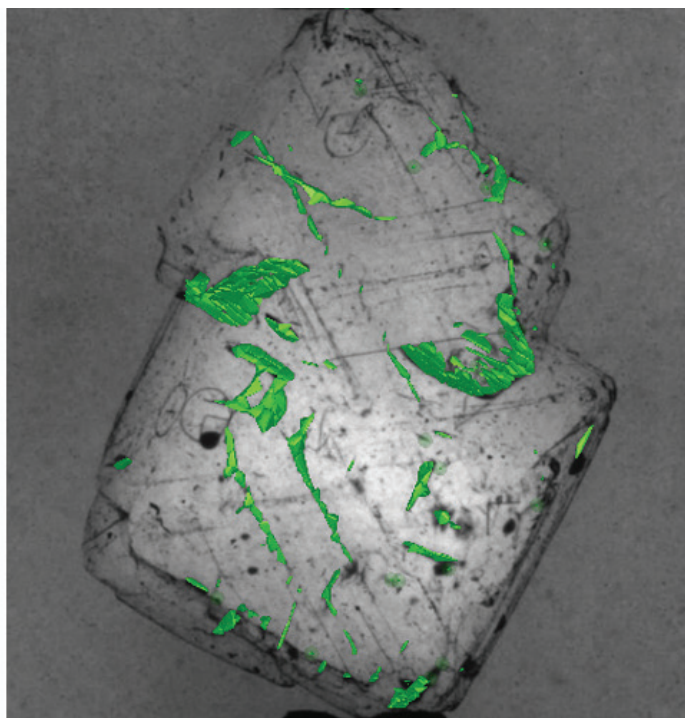
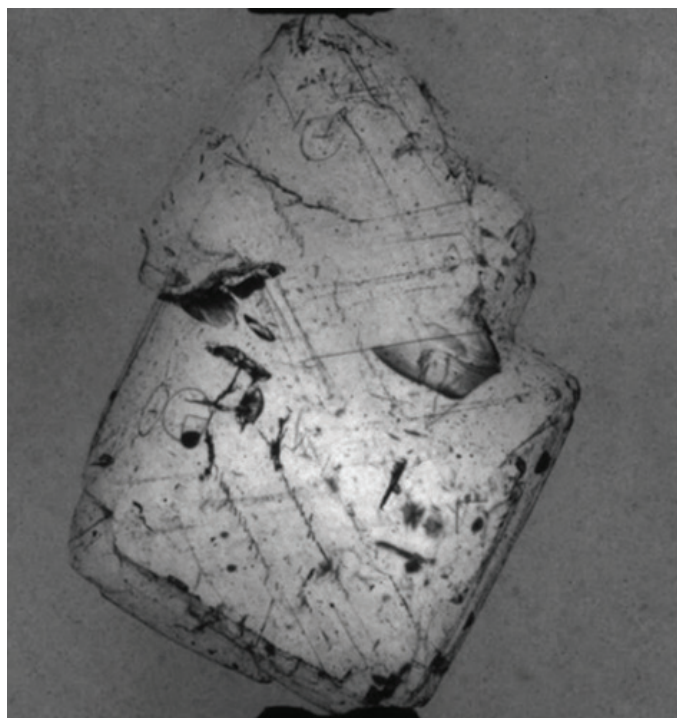
Beers suspended its generic advertising campaign 10 years ago, and for the wholesale industry and jewellery retailers to develop and use synthetic detection equipment.

There also was a positive prediction in the Morgan Stanley Report. While there may be price impacts in the smaller sizes as the result of the presence of synthetic melee, it said, the effects of these may be mitigated because the diamond jewellery market is likely to grow as a result of the new product category.

The diamond is transparent, but is the trade?

The development of technologies that are able to peer into a rough diamond and map its internal inclusions have changed forever the rough diamond trade. Whereas it once was accepted that even experienced diamantaires assumed a degree of financial risk when evaluating an uncut stone, because they could not state with absolute certainty what existed under its surface, today systems are available that can scan the diamond and produce an accurate rendition of its internal structure on a computer screen.

But the technology that is able to do this is not inexpensive, meaning that, at this stage, only a portion of the rough diamonds on the market are



A rough diamond, as seen on the monitor, which has been scanned by Sarine Technologies' Galaxy 1000 inclusion scanning system. The photograph on the right shows the inclusions highlighted. The system is able to generate a 3D model of the rough diamond, with all inclusions clearly mapped.

being examined in this way. This raises an ethical question. If the seller has submitted the stone for screening, is he or she obliged to inform a potential buyer that a full internal analysis exists?

A widely distributed blog from early this year, written by an Israeli rough diamond dealer, Nurit Rothmann, likened the situation to a game of cards. "Like poker, rough diamond trading can be a high-risk business, but it is one that we agreed to join because the rules were fair," she wrote, continuing: "It is as if spectacles had been invented that empower the wearer to see what cards all the players around the table are holding. Now ask yourself... In poker, if one or more of the players are wearing those spectacles, should we expect the other participants in the game to continue playing?"

At the same time that Ms. Rothmann wrote her blog, two young members at the Israel Diamond Exchange (IDE) circulated a petition, urging the organisation to push for greater transparency in the trade when such equipment is used. IDE responded, first signing an MOU with Sarine Technologies, a high-tech firm that has developed such a system, according to which it will disclose to IDE members if "inclusion mapping" using its technology has been undertaken on specific rough stones.

IDE then submitted a proposal at the congress of the World Federation of Diamond Bourses in Dubai in May to add a conduct rule to the WFDB's Inner Rules, according to which a rough diamond seller must inform a client as to whether a diamond underwent inclusion scanning, and failure to do so could result in a transaction being cancelled and other action taken.

This is a most welcome development, for it

clearly enhances the principle of transparency in our industry. The question is whether it has gone far enough, because it does not oblige the seller to divulge the results of a scan, but merely to confirm that a scan was performed. It would seem that this subject still needs to be discussed at length, before it is fully resolved.

A dialogue between the techs and the trade

Technology has become an integral component in our business, and just as we need to adapt to the changes that it has instigated, the developers of technology should be cognisant that their products serve the greater good of the industry from which they benefit.

In this respect it is important that constant dialogue take place between the industry and the technology developers with the understanding that, ultimately, our long-term interests are the same, and that is we should have a healthy and profitable diamond and jewellery business.

One area worth pursuing through such a dialogue is greater standardisation of the technology and equipment used by gemmological laboratories, in the same way we strive for standardisation of examination methods and standards in the labs. It is something that the diamond industry, collectively the largest clients of the gemmological labs worldwide, should insist upon.

These and other subjects related to the CIBJO Diamond Blue Book will be discussed when the Diamond Commission meets at the CIBJO Congress in Yerevan in October. We would be delighted if you would join us.

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