The Jewellery Trade Disrupted: Technology as the Harbinger of Change

By Stephane Fischler, Chair
CIBJO Technology Committee

In the human experience, technological breakthroughs have more often than not been inflection points at which history has changed. The harnessing of fire most probably was once those moments, but so definitely was the discovery of gunpowder, steam-powered engines, electricity, the combustion engine, the transistor, the desktop computer and the Internet. In every one of those instances, it is possible to talk about the way things were before the innovation and how they were afterwards.

The gemstone and jewellery industry can point to its own inflection points, some of them in our living memory. Most often, they have involved the adaptation of technologies developed elsewhere. It is not surprising.

Stephane Fischler, Chair of the CIBJO Technology Committee.

For a business community of limited size such as ours, we do not have the massive capital resources that are required to invest in the development of breakthrough systems, and then the economies of scale to refine and reproduce them. But in those cases where we have successfully harnessed technologies created elsewhere, the consequences have sometime been substantial.

For those of us in the diamond sector, one of these inflection points was the development of electro-optical rough diamond plotting devices in the 1990s, which enabled us for the first time to separate decision-making in the diamond cutting and polishing process, and the actual manufacturing of the stones. At the stage they were introduced, there already were automatic cutting and polishing systems being used, but they were under-utilized because they still required highly-trained workers to examine the stones consistently and make the required adjustments.

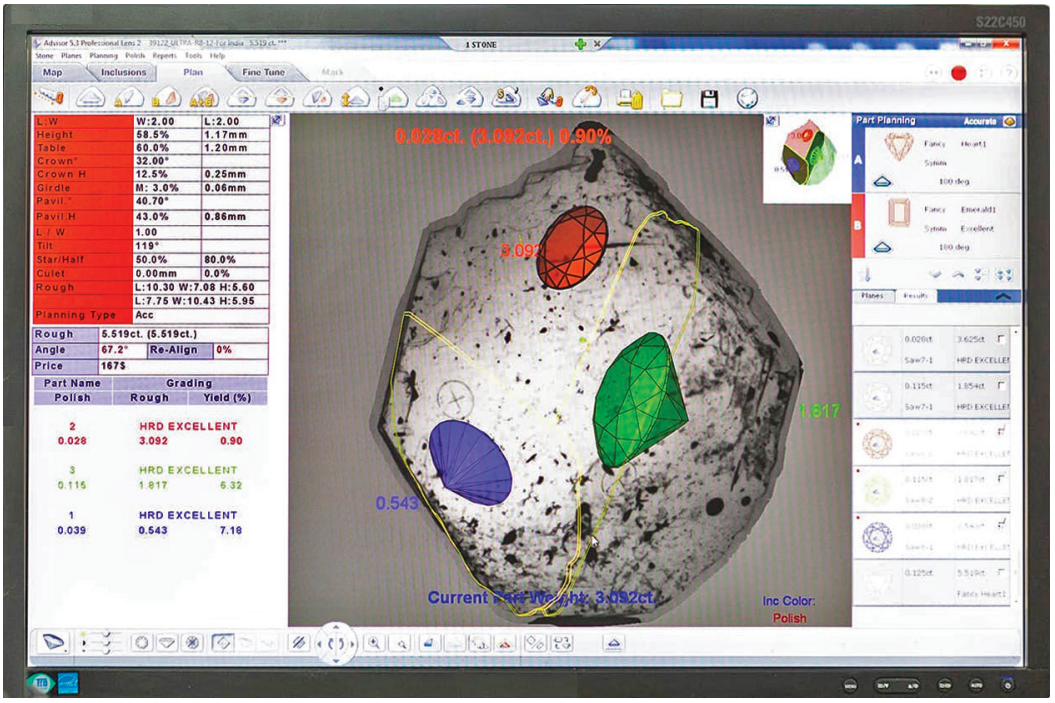
The computer-aided decision-making systems were revolutionary, because they enabled us to develop production methods, whereby the critical assessment about to how best to process a batch of rough stones could be taken by a handful of experts, and then physical manufacturing would be carried out according to the criteria that they had set, using automated systems operated by purposely trained workers. It introduced into the diamond industry processes that, in essence, were similar to those followed in an automobile factory.

SOME INTENDED AND UNINTENDED CONSEQUENCES

As so often is the case with technological developments, the consequences of these new systems and work methods were numerous, and not always what we originally had predicted.

The development of the technologies I refer to had been initiated in high-wage diamond centres like Belgium and Israel, where the captains of industry were convinced that automation was the only real solution to stemming the flow of manufacturing capacity to lower-wage centres, and most predominantly India. Some held a mistaken opinion that it would be possible to prevent the export of knowledge from the countries in which it has been developed.

Overall, the new manufacturing processes most probably did lower the production cost per unit marginally, on condition that the company had the economic wherewithal to make the required investments. But, because the systems were inherently more analytical, precise and efficient, it meant that improved profitability was not simply because of higher production capacity, but also a result of achieving



Electro-optical rough diamond plotting systems pioneered by technology companies like Sarine, enabled diamond manufacturers to separate decision-making processes from pure manufacturing processes, revolutionising the industry. (Photo courtesy of SarineTechnologies)

a better yield from the rough stone, and making production decisions that were more attuned to current market conditions. This ability improved as the diamond plotting technology was refined, and further developed its ability to look deep into the rough diamond, detecting inclusions and imperfections that were less apparent from the surface.

But the technology did not halt or even really delay the outflow of manufacturing capacity from west to east, and indeed the primary beneficiaries were what had once been referred to as the low-wage centres, like India and then China, where it also became an effective means to narrow what previously had been perceived as a gap in the final quality of the polished diamonds being produced.

CIBJO President Gaetano Cavalieri announcing the establishment of the Technology Committee at the 2019 CIBJO Congress in Bahrain. Seated to his his right is the committee's first chair, Stephane Fischler.

The technology also changed the face of the industry in India, which today is responsible for more than nine out of every ten diamonds polished. What once was largely a cottage industry, where workers toiled while seated on the ground, today is a highly automated enterprise, with large, air-conditioned factories housing hundreds of thousands of employees.

On the global scale, it changed our perception of the production line. No longer did the owners of a diamond manufacturing facility need to be present on-site to oversee the progress of each and every stone being processed. Now they could be located in another building, city or even country.

THE BIRTH OF AN INDUSTRY THINK-TANK

The development of electro-optical plotting devices was a case study relevant to the diamond industry, but there have been numerous other technology-driven inflection points in the jewellery industry, also with history-altering consequences. These include computer-aided design programmes in the jewellery sector, 3-D printers that accurately create intricate models drawn up on the computer and, increasingly, actual items of jewellery, high-temperature-high pressure and irradiation technologies that enhance and alter the colour of gemstones, DNA sequencing in the pearl industry, artificial intelligence and more.

With the pace of technological development speeding up almost exponentially, it is becoming more important for us as an industry to detect where change is coming, and discuss what the consequences are both in the short-term and the long-term.

It was for that purpose that the Technology Committee was established in 2019 by the CIBJO Board of Directors, during the organisation's annual conference in Bahrain. It was my privilege to be selected to chair the new body.

Its primary goal is developing understanding of the disruptive technologies that are likely to impact the jewellery industry in the coming years. It was charged with operating as a "think-tank," collecting and discussing information and ideas, and then sharing them with the CIBJO members and the greater jewellery and gemstone industries, hopefully so that we achieve better long-term profitability and stronger structural and financial resilience.

DISRUPTING THE TRADE IN JEWELLERY

For much of our industry's history, the truly disruptive technologies have been applied mainly in the mining and manufacturing sectors. For decades, the trade in gemstones and jewellery, and more specifically the retail trade, operated according to tried and proven business models.

With the spread of COVID-19 in 2020 and the imposition of widespread lockdowns, apprehension about whether consumers would purchase expensive items online were largely dispelled. (Photo Credit: Nataliya Vaitkevich on pexels.com)

However, with the growing adaptability of the Internet, starting during the second half of the 1990s, and the begining of social media marketing, often traced to 2007 when Facebook launched its standalone ad platform, a shift began in the way jewellery and traders do business. But the traders were hesitant, in part because of uncertainty whether their customers would be consistently ready to close high-ticket transactions online, without being able to physically hold and examine the products.

But as we are now well aware, most of those apprehensions were thrown out of the window in 2020. With trading establishments intermittently prevented from opening their doors because of COVID-19 lockdowns and, even when they were not, restricted in the number of people they could permit on their premises, online marketing and sales capacity became a necessity, rather than an alternative for the more tech-savvy.

The work of our committee began before the COVID-19 pandemic and its massive disruption. But it became more relevant than ever before. The crisis provided the opportunity to learn and hopefully re-tool the supply chain, and ultimately support retailers and wholesalers to understand and embrace the current and future customer environment.

RETOOLING FOR THE PHYGITAL ENVIRONMENT

For retailers, it is more challenging than it was in the past to retain customers, let alone to entice new ones. How do we deal with consumers that are now both "physical" and "digital" – or "phygital," as they now commonly are referred to? How can bricks and clouds be reconciled and reinforce one another?

These are not the only questions that we need to ask ourselves.

How may we develop new and more effective tools that enhance the in-store experience, and enable each retailer to remain a "relevant" supplier in the fast evolving direct-to-consumer (DTC) ecosystem?

How do we inspire and retain trust within a tech-driven system?

Though human talent is essential to maximize the benefits of technology, how can the so-called "intelligent" algorithm-based technologies support or even replace human intervention? And if so, where should the focus be and how do we minimize harm and maximize benefits.

How can we use technology and algorithms to build consumer interest and above all loyalty in an ever increase competitive landscape? And how do we do this ethically, with the social media now driven by Artificial Intelligence (AI), which is becoming more and more efficient in targeting the most attractive and often susceptible consumer groups.

Jewellery retailers today must cater to "phygital" consumers, interacting with them in both physical and digital environments, sometimes simultaneously. (Photo Credit: Ali Pazani on pexels.com)

Selling jewellery is all about presenting a story, and the talent of our sales staff has always been judged by how successful they are in retelling that story so that it grabs the personal attention of each individual client. To do that, they learn to intuitively ascertain, through verbal interaction and body language, what drives the client's interest.

So that AI may emulate what the human salesperson does instinctively, it is necessary to digitally accumulate information on both existing and potential clients. These databases are then harvested to create experiences to retain the customers' loyalty and trust.

Each time a consumer clicks on your website, social media platforms, online sales platform or enters your brick-and-mortar store, you are provided the opportunity to collect data, and enable your AI-powered software to learn more, helping you manage your relationships better.

DATA AS THE DIFFERENCE-MAKER

In the contemporary trading environment, data is arguably our most valuable asset. Standards need to be created for how it is handled. How should it be securely stored, analysed and ultimately used? These are discussions taking place across the tech-world, and issues of controversy confounding the industry, the public and government regulators.

Just think about the huge volume of private and sometimes intimate information most of the population share with social media companies.

Imagine that your competitors invest by purchasing such data, providing them the ability to tailor their approach to individual consumers, using multiple parameters such as income, geographic location, expressed preferences, political and religious beliefs, information about birthdays and family occasions, relationships with others and more. And then they tailor their marketing programme using this information, pinpointing their consumers so that they are offered specific goods on particularly occasions. Can you successfully counter the challenge, marketing your jewellery in the same way you have done for decades?

Investing in data-driven technology is quite possibly the retailer's most critical priority today, to define and secure their tomorrow.

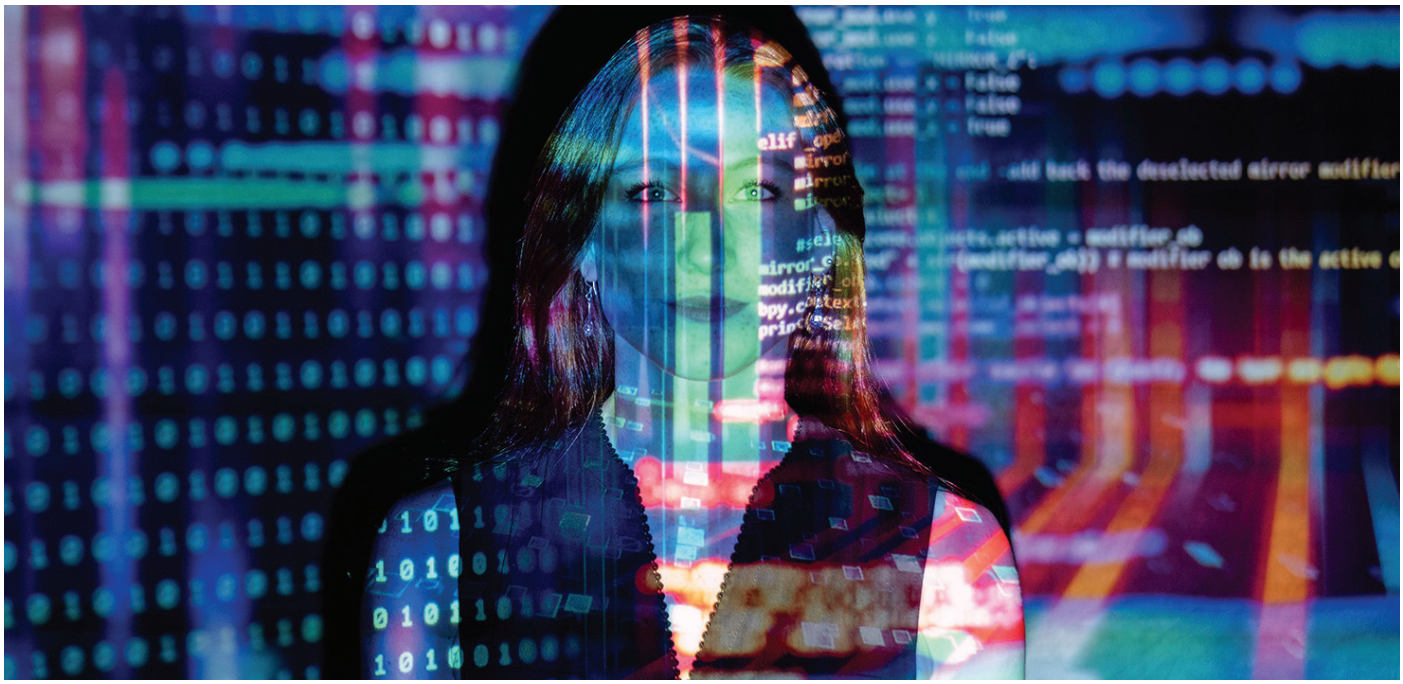
DATA CHALLENGES AND THREATS

But handling information presents a minefield of challenges, responsibilities and risks.

Security is one of them, with hacking an ongoing threat, not to mention protecting yourself against malevolent players, often anonymous, who may "kidnap" your data and hold it to ransom.

Managing information provided by others is also a heavy responsibility, and is regulated differently in various countries. Restrictions are particularly stringent in the European Union, which enacted the General Data Protection Regulation (GDPR) in 2016, providing a legal framework that sets guidelines for the collection and processing of personal information from individuals who live in the region.

The GDPR governs what European companies can do with digital information, and raises the question as to whether



Big data is the difference maker in today's retail environment, but managing it and securing it are becoming more complicated challenges. (Photo Credit: ThisIsEngineering on pexels.com)

they are operating on a level playing field when they compete with companies located in countries where the laws are less strict, and more rarely enforced.

Another challenge is vetting the data's reliability, and ensuring that it is not in any way skewed. The added value of AI-driven depends entirely on the quality of data it is fed with. The more biased the data is, the greater the likelihood your AI software will drive you in a possibly harmful direction.

Remember that you need to remain alert and in control. Even in our supercharged digital environment, rational and cool-headed management requires continuously striking the right and hopefully optimal balance between the human intellect and artificial intelligence.

THE HUMAN ROLE IN THE PROCESS

Our supply chain is unrecognisable to the one that existed just two decades ago, much of this because of technology. Mining, manufacturing, designing, marketing and finance all have been impacted.

But, in the end it is you, the human being that ensures the success or failure of any technological innovation. No single computer, however sophisticated, matches the intellectual capacity, imagination and independence of thought of the human brain.

Technology is a tool that can help us make the critical decisions and then execute them, but there is always the danger of "overkill." It is why it is so critical that we understand technology's potential, and also its limitations.

The CIBJO Technology Committee would very much like to engage with you in discussing them, sharing experiences, insights, expertise, hopes and concerns.

CIBJO CONGRESS 2021

Unlike 2020, when like almost all industry events a CIBJO Congress did not take place, the CIBJO Congress 2021 will be held virtually rather than in a physical location.

The Technology Committee will gather together with CIBJO's Marketing and Education Commission and the Ethics Commission on Thursday, November 18, 2021, at 15:00 Central European Time. The session will concentrate on the impact of new technologies, particularly related to marketing of jewellery in the retail environment. To register for the session, PLEASE CLICK HERE.

Updated information about the session, and other congress events is available on the dedicated CIBJO Congress 2021 website at: www.cibjo.org/congress2021/.

We look forward to welcoming you to what should be a fascinating event.

PHOTO CREDITS

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