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BIRTHDAY LESSONS
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ICONIC INDUSTRY PIONEER HONORED

— Print Rite's Arnald Ho and Zhuhai the World
Consumables Capital — both celebrating 40 years



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IMAGING WORLD

No. 120 | 2021

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Accepts ISC Chairman Role to Defend
OEM Brands*



Andrew Gardner

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Iconic Industry Pioneer Honored



— Print-Rite's Arnald Ho joins Zhuhai
city to celebrate 40 years



The Diamond Pioneer Award, in memory of imaging pioneer Art Diamond (1930—2016), is presented annually to an individual that demonstrates a unique enterprising, pioneering or entrepreneurial spirit that advances the imaging industry. Previously, awardees have included (left to right) Ed Swartz (2015), William "Skip" London (2018), Jackson Wang (2017), Arnald Ho (2016), Mike Josiah (2019) and Jim Cerkleski (2020).

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Coming of Age, Lessons in the Desert and Dealing with Pricing Pressures

Benjamin Young



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NPG-68/GPR-54/C-EXV50 (Drum)

Compatible With: IR1435/1425U/1435P/1435IF



NPG71/45/46/GPR55/30/31/CEXV51/28/29(Drum)

Compatible With: IRC5535/5535U/5540/5550/5560/DXC5760/5750/5740/5735/IRC5030/5035/5045/5051/5235/5240/5250/5255



NPG73/84/GPR-57/C-EXV53/59(Drum)

Compatible With: IR-4525/4535/4545/4551/4751/4745/4735/4725



**KLD-TK8365/8367
KLD-TK8375/8377**



KLD-TN-328/626
CN Invention Patent No.: 201911341906.9



KLD-W1108A-W1103A-W1143A
CN Invention Patent No.: 201910813795.0
US Invention Patent No.: US16575369



KLD-IMC3500/MPC3503
CN Invention Patent No.: 201911189749.4



KLD-SP C352/C360/361
CN Invention Patent No.: 201910204654.9



**KLD-NPG-73/GPR-57/C-EXV53
KLD-NPG-71/GPR-55/C-EXV51**
CN Invention Patent No.: 2019104118810.1
US Invention Patent No.: US16442587
EU Invention Patent No.: EP19180456.6



KLD-TK1200/1150/1160/1170
CN Invention Patent No.: 201811374841.3



KLD-OKI 310
CN Invention Patent No.: 20191085742.8
US Invention Patent No.: US16595517



KLD-TNP79/80/81
CN Invention Patent No.: 202010518746.7



KLD-MX310
CN Invention Patent No.: 201910495312.7
US Invention Patent No.: US16451011
EU Invention Patent No.: EP19182322.8



KLD-IM350/430
CN Invention Patent No.: 201910875611.3



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David Gibbons



Hindsight has always been much easier for me than *insight*. How about you?

One seems much wiser looking backwards and making a judgement about the twists and turns that have taken place historically. It requires somewhat of an entrepreneurial gifting to have the *insight* to make the right judgements ahead of time.

Looking back, with the added

perspective of now living and working in China for 11 years, I can see how a number of unrelated initiatives created the perfect storm to create our global industry.

The invention of the All-In-One (AIO) toner cartridge by Canon, the opening up of China, the transitioning of Zhuhai from a fishing village to a city—all took place 40 years ago. Iconic manufacturing brands like Katun in Minneapolis (now owned by Taiwan based General Plastic Industrial Co. Ltd.) and Print-Rite in Zhuhai were established 40 years ago. This massive multi-billion-dollar industry would not be here today if it was not for these and other pioneers.

In the meanwhile, changes in technologies, the advent of smart chips, globalization and a raft of lawsuits have forced this young industry to adapt, to consolidate and mature more rapidly than any other.

We have devoted these pages to sharing some of those stories. Obviously, we could not include everything. So, to that end we invite you to send us your historical, and hysterical, images and captions for all to see and read. Go to the *Share Your Story* link on our website to see these being added, daily.

Pioneers are not just a thing of the past. Innovation continues to thrive. I wonder what you are doing today, that will last forever, in your personal as well as your professional life? We certainly need more pioneers for the next 40 years so that we can deliver the future to today.

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BERTO HAS A LAUGH



Printing Supplies: and Mileposts

 *Graham Galliford*

According to legend, Lao Tzu said, "A journey of a thousand miles begins with a single step."


The long journey made by the instant print business,

including the supplies sector, is no exception to this concept. Like all roads, whether country lanes or superhighways, there are milestones and mileposts that show those on the journey how far they

have come and where to go next.

There have been some markers on this journey that have been key to shaping the industry.

The different sectors of the instant print industry – hardware, software, and consumable supplies – which have a dependent relationship, have travelled this road as companions. Key events, milestones and mile markers on that journey define where the industry has arrived today.



Popular TV actor Jack Klugman promotes the Canon PC10 copier—the first printing device to use the All-In-One (AIO) printer cartridge in 1983

The Milestones



Convenient Instant Printing

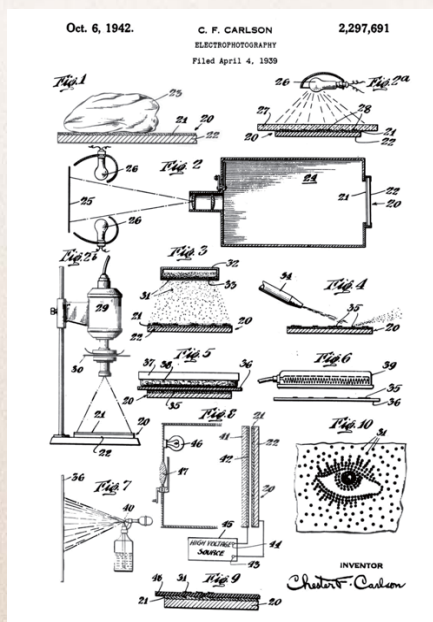


In the beginning, Xerox took a key first step on this journey. Well, it was the Battelle Institute and Haloid Corporation that developed the first commercial products

based on Chester Carlson's dry toner printing patent of 1938. (see side bar page 7: "Who made the first toner print?"). Haloid later became Xerox. This was the genesis of one category of today's major non-impact printing methods, toner-based printing.

Likewise, another technological invention was made and patented by Canon in 1977 (see side bar page 9: "The Bubble that Created a Billion Dollar Business"). His was the thermal inkjet technology—known as the bubble jet at the time—which is widely used in the market today.

These two developments are just two key inventions upon which much of the supplies markets rest today, without which, of course, as well with many other technological advancements, the supplies market would be quite different today.



Closed Market is Cracked Open

The "only game in town" for instant printing in the early days was provided by Xerox. Inkjet was largely confined to specialty and industrial applications. While there were at least 12 other US and European companies offering different instant technologies, none used the Xerox-type technology. Xerography was the plain paper process that was successfully mass commercialized giving Xerox about an 84% global market share. Consequently, the supplies business was dominated by Xerox with bundled supplies and service in their copier contracts.

The virtual market monopoly enjoyed by Xerox was eventually challenged by the USA's Fair Trade Commission (FTC) in 1975. The FTC forced Xerox to license key patented technology to potential competitors and offer the option for their customers to use third-party servicing and supplies.

This was a key milestone in the development of the aftermarket for supplies and service. It helped give birth to independent service companies and manufacturers of toner and compatible spare parts, the foundation of our industry today without which the market today would be quite different and virtually closed to third parties.

The first element of the aftermarket supplies industry was established. Third-party toner manufacturing companies were founded starting in the mid 1970s, mostly in the USA and Europe and so started the difficult journey to growth seizing on the opportunities now afforded them.

Continued Page 06



Graham J. Galliford is a world-renowned consultant, researcher, writer and speaker for the global imaging industry. His work has encompassed technologies in a variety of printing components and products but has worked primarily in the field of toner-based printing technology since 1974. He can be contacted at graham@gallifordconsulting.com



Print Hardware Explodes

Additionally, and significantly, those companies involved with electronic and optical technologies, like cameras, started to develop copiers as the technological lock on the market was cracked open.

These companies started to offer competitive products that challenged Xerox as the market leader. These were mainly Japanese companies, which had the advantage of having been built from virtually nothing after the devastation of World War II with US government assistance and with the adoption of many new business principles.

This created an important “industrial engine” that led, in our industry’s case, to the domination of the hardware and supplies market by Japanese OEMs. The challenge to Xerox’s domination had begun and the options for consumers mushroomed.



Opportunities and Dangers for Cartridge Supplies

The challenge to protect the supplies business became ever more important. The implementation of cartridges became a popular product strategy for OEMs. The humble refill bottle was replaced by simple but patented or proprietary cartridges.

However, the introduction of this strategy merely offered new entrepreneurs market opportunity in making third party clones of these cartridges. Naturally, legal recourse was often sought by OEMs against aftermarket companies.

Many lawsuits including early ones such as the one in the 1980s against Speed-O-Print for refilling inkjet cartridges, and Ricoh vs. Nukote for utilizing cloned toner cartridges were started. The age of litigation had started.



Cartridges – A Double-edged Sword

Canon took the cartridge concept to a totally new level. In stark contrast to Xerox’s market and pricing policy, Canon introduced print devices with a “disposable” cartridge.

The so called “All-In-One” (AIO) cartridge was designed to reduce the cost of copying (supplies and service). This concept was also part of Canon’s product strategy to reduce the cost of the hardware and improve reliability. Previously, copiers were notoriously unreliable and were service intensive. Canon’s revolutionary cartridge concept encompassed most of the working parts of the printer in a replaceable cartridge that removed the need for regular service calls.

The printer hardware cost was reduced because much of the print system was in the disposable cartridge. This meant, however, the cartridge was more expensive than a just a bottle of toner. At the time, a typical office copier cost was \$5,000 and the least expensive laser printer, the Xerox 2700, cost \$27,000. The AIO based PC-10 and PC-20 were sold at less than \$1,000. The LBP-CX laser printer (HP LaserJet 1) introduced 12 months later was less than \$3,000.

The PC-10/20 cartridge was sold at \$150 for 2,000 pages. The cartridges were so well engineered, it was obvious that, other than depletion of the toner, the cartridge and its components were not “worn out” after 2,000 pages (*see side bar page 11: “My remanufacturing experiment 38 years ago!”*).

Rather than giving the OEM control of the supplies for its machines, this historic milestone provided a whole cadre of entrepreneurs with an opportunity. The refilling and remanufacturing business was born.



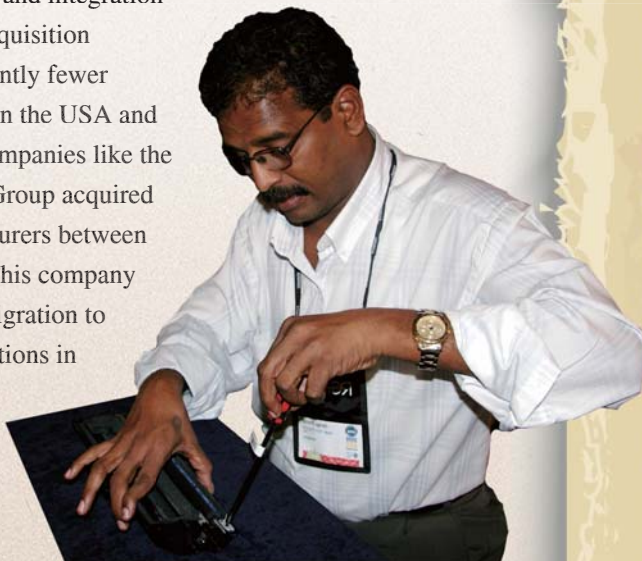


Refill, Recharge, Remanufacture and Build New

The development of the AIO cartridge saw the entrepreneurs offering to refill spent cartridges to their local markets from garages, kitchen tables and basements. This started in the USA and spread to Europe and around the world.

The early epicenter of the development of this business was Austin, Texas. Laser Charge Inc., offered franchised business opportunities to those that wanted to start remanufacturing print cartridges. They offered training courses, supplies and support for their franchisees. Other companies also emerged at the same time with similar business models. This important milestone started the embryonic remanufacturing industry, an industry requiring supplies of an ever-increasing roster of components.

At its peak, the population of cartridge remanufacturing companies in the USA numbered around 10,000 many of whom were small and had been trained by companies like Laser Charge. Companies including Static Control Components, Delacamp, Graphic Technologies, Uninet, and Future Graphics, Color Image and American Inkjet emerged and profited from the development and supply of the necessary components to recharge a cartridge. Some product distributors subsequently vertically integrated as the industry developed. The threat of lawsuits and integration by merger and acquisition has seen significantly fewer remanufacturers in the USA and Europe. Mega-companies like the Clover Imaging Group acquired many remanufacturers between 2006 and 2009. This company also joined the migration to Asia with acquisitions in Australia and manufacturing in Vietnam to become a global organization.



**Who made
the first
toner print?**

Chester Carlson (pictured) is credited as the originator of toner-based printing. His full-time job was very demanding, and he was attending law school at night which diverted his attention from his experiments in instant printing. Consequently, he hired an assistant, Otto Kornei, and they set up a lab in Astoria on Long Island, New York. Within a month, Kornei discovered a combination of plate, charging method and developing powder (toner) that held promise. Together, they made the first historic image which read "10-22-1938 – Astoria". Otto Kornei is sometimes credited as the co-inventor of xerography, but his employer Carlson is the one that registered the patent.



Our Industry Shall Not Survive by Toner and Ink Alone

Toner and inkjet ink, while important components, were not sufficient to enable recyclers to compete at an equivalent quality with the OEMs. “High mortality” parts were also needed. One such key element was the Organic PhotoConductor drum (OPC). Replacement OPCs first became available from Fuji Electric in the early 1990’s at a whopping price of US\$28 for the LBP-SX drum. Others including Dainippon and Mitsubishi followed as did a plethora of companies in Europe, Korea, and China.

That toner and inkjet ink were the first elements that were developed and sold for the aftermarket is important. The volume of toner and ink sales encouraged others to develop, produce and market OPCs, rollers, blades, seals and a whole myriad of specialized components. Manufacturing these components requires knowhow and infrastructure plus the imperative to minimize cost of manufacturing. In particular, this part of the supply industry started to migrate to China and Korea. It is notable that companies like Handan Hanguang, Tianjin Zhonghuan TCOA and Zhanjiang Huinon Toner Development Co., Ltd. (formerly Zhanjiang Canon Toner Co. Ltd.) had been established much earlier in cooperation with Japanese OEMs Konica and Canon.



Manufacturing Moves to Asia

Low labor costs, plastics, and metal fabrication expertise plus speed from concept to manufacture were key to this successful migration to Asia. This shift over the last 25 years was key to the massive rapid growth of the print supplies business. So much of the materials used in recycling toner and inkjet cartridges is from China and other parts of Asia today.

A good example of this progression is Print-Rite in Zhuhai founded by industry legend Arnald Ho (pictured). As the first company in China starting in the supplies business in 1981, Print-Rite has grown and developed to be the pre-eminent vertically integrated print supplies company. From its beginning as a supplier of impact printer ribbons, Print-Rite has developed and acquired manufacturing core competencies in cartridge moldings, OPCs, toner, inkjet ink, chips, and many other essential components.

Furthermore, the company is expanding into new fields for the future like 3D printing machines and materials. They have become pre-eminent marketers of finished cartridge products including New-Build Cartridges (NBC) that are non-infringing by innovation in design. This has been supported with development of their own patent portfolio numbering today more than 3,000 patents.

Print-Rite was the first but there has been no shortage of many others that have also been very successful. The establishment, formation and public listing in some cases of these companies is yet another significant milestone.





Knowledge is Power

Sir Francis Bacon was right. "Knowledge itself IS power" (*Meditationes Sacrae*—1597). Bacon proposed that having and sharing knowledge is the cornerstone of reputation and influence, and therefore power.

At the turn of the 1990's, the need for information was clear among this new community of remanufacturers and gave birth to the development of trade periodicals. This included *R&R News* published by Art Diamond of Diamond Research of Ojai, California (I was a founder and Managing Editor from 1994), *Recharger*, *The Recycler* and *Imaging Spectrum*. and scores of publications in many languages including Spanish, Portuguese, Russian, Arabic and Korean. Most have fallen by the wayside yet *RT Media's Imaging World* in its many languages has continued to provide global influence.



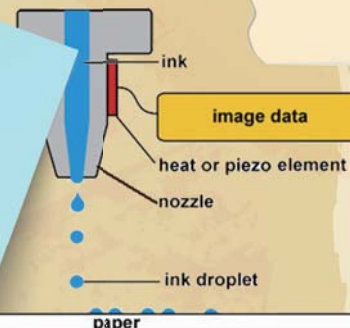
Lockout Attempts with the Birth of the Smart Chip

Since the very beginning, the printer OEMs have sought to retain most, if not all the supplies business. They have employed legal, marketing, product design and technology strategies in pursuit of this goal.

The introduction of "smart chips" that "talk" to the print engine upon installation of a cartridge continues to be one of the most challenging strategies used. Significant, and in line with the enterprising third-party industry, this challenge was defeated in the early 2000s with the development of "compatible chips." This was first in the USA with Graphic Technologies and Static Control. Later in China, companies like Apex Microelectronics, Zhono Electronic Technology and Chipjet Technology have developed the skills required to meet the more sophisticated challenges brought on in microchip development.



The Bubble that Created a Multi-Billion Dollar Business



Canon claims to have invented what it terms bubble jet technology in 1977, when a researcher accidentally touched an ink-filled syringe with a hot soldering iron. The heat forced a drop of ink out of the needle and so began the development of a new printing method.

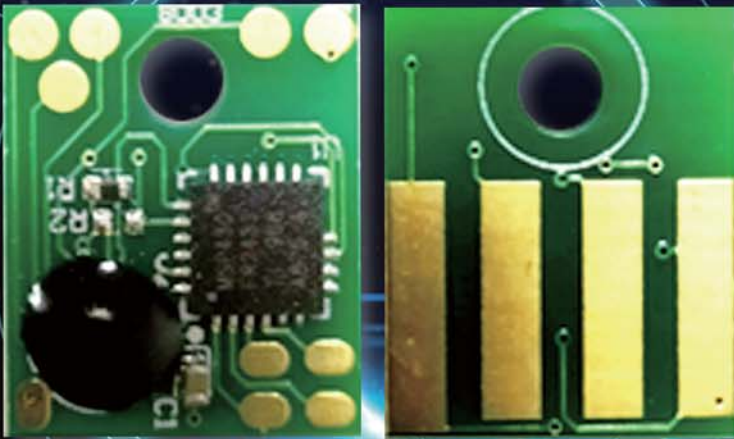


Complaint Over Xerox Monopoly

"On July 29, 1975, the Federal Trade Commission entered a consent order against Xerox Corp., resolving a complaint that the company had monopolized the market for the sale and lease of office copiers in the United States. The conduct charged in the complaint related principally to Xerox's accumulation and licensing of patents and its marketing practices with respect to the products protected by those patents. To remedy this alleged misconduct, the order required Xerox to license its patents for a small royalty and to abandon the challenged marketing practices."

—Quotation from *Antitrust Law Journal*, Vol. 68, No. 3 Published by the American Bar Association

REPLACEMENT CHIPS FOR MLK MMGS310/510/417/710/711 MLK MMGX310/510/417/710



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2017 US Supreme Court Legitimizes Remanufacturing

The seven-year litigation between Lexmark International and Impression Products finally came to an end when the Supreme Court of the United States ruled in favor of Impression Products on May 30, 2017.

Chief Justice Roberts of the US Supreme Court delivered the opinion of the Court that patent rights are “exhausted” when a patentee sells one of its products. The patentee can no longer control that item through patent laws and the purchaser, and all subsequent owners, are free to use, repair or resell the product, just like any other item of personal property, without fear of an infringement lawsuit.

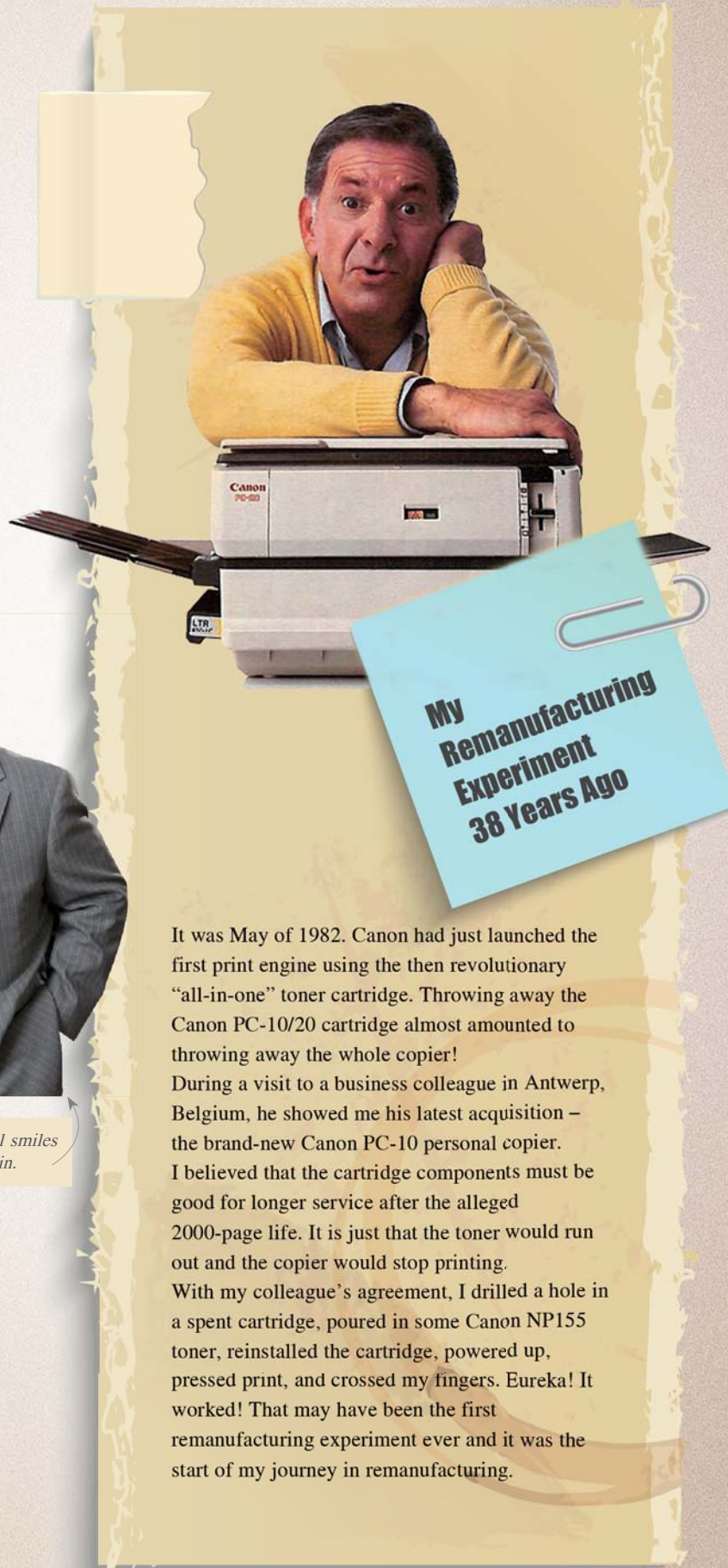
The two elements of the case are (1) whether a patentee that sells an item under express restrictions on the purchaser’s right to reuse or resell the product (e.g., Prebate), and (2) whether a patentee exhausts its patent rights by selling its product inside or outside the United States where American patent laws do not apply, that seller cannot enforce that restriction through an infringement lawsuit. The ruling given is that a patentee’s decision to sell a product exhausts all of its patent rights in that item, regardless of any restrictions the patentee purports to impose or the location of the sale. This is key to the supply and the ability for cartridges to be remanufactured.



Impression Products' Eric Smith is all smiles after his historic US Supreme Court win.

Postscript

The foregoing “tale of the business” is not the whole story. A complete book would be required to cover every twist and turn in the road so far travelled by the print and print supplies business. I apologize if a reader believes that I have omitted some key event that is critical to them. However, the events I have described constitute, in my opinion, key milestones and mile markers that have shaped and directed our industry to where we find ourselves today. ■



It was May of 1982. Canon had just launched the first print engine using the then revolutionary “all-in-one” toner cartridge. Throwing away the Canon PC-10/20 cartridge almost amounted to throwing away the whole copier!

During a visit to a business colleague in Antwerp, Belgium, he showed me his latest acquisition – the brand-new Canon PC-10 personal copier.

I believed that the cartridge components must be good for longer service after the alleged 2000-page life. It is just that the toner would run out and the copier would stop printing.

With my colleague’s agreement, I drilled a hole in a spent cartridge, poured in some Canon NP155 toner, reinstalled the cartridge, powered up, pressed print, and crossed my fingers. Eureka! It worked! That may have been the first remanufacturing experiment ever and it was the start of my journey in remanufacturing.

Thank God for the Engineers and Innovators

✍ Steve Weedon

To the optimist, the glass is half full. To the pessimist, the glass is half empty. To the engineer, the glass is twice as big as it needs to be.

Thank God for the optimists and engineers. Without them, we would not have had our 40-year imaging aftermarket industry to look back on.

It's important to look back occasionally. It's like checking your rear-view mirror when you're driving. It's just a glance, but you see where you have come from as you focus on where you are going.

40 years ago, this industry was a fledgling business with few people thinking it would turn global let alone long-term. There was the fear that the printer OEMs would snuff out the aftermarket, so the idea was to get in, make some money, and get out quick. I distinctly remember someone telling me at the first-ever European meeting of "Remanufacturing" enthusiasts.

I didn't see it that way since the copier aftermarket was alive and kicking and had been doing well since the early 1980s. The copier OEMs could not stop

that, even though they had tried.

Glancing back into that rear-view mirror, I see those individuals who became passionate about making it happen. Engineers as well as Optimists came together and pioneered a brand-new industry, taking spent consumables and re-manufacturing them for resale.

T Michael Clarke and David Jorgenson were the original founders of Katun Corp, established as the first independent parts and supplies distributors, bringing sales skills and industry analytics together, identifying



neers Optimists



Alan Howard



Arnald Ho



Ed Swartz



Mike Clarke

product opportunities supplying cheaper alternatives to dealers for parts and supplies. It grew like crazy and was great fun in those early years.

Engineers like solving problems, but you need Optimists to see the opportunity and to dream big. Arnald Ho saw it big and developed the first IP Safe compatible ribbon back in 1984. That put Print-Rite on the map. The company is 40 years old this year. Quite a testament to their vision and determination as both companies survive and continue to prosper today.

Copy machines, laser cartridges, inkjet cartridges and ribbons are not exactly rocket science to master—if you are a qualified engineer. But there are plenty of challenges to overcome. Quality was all important and it was never easy.

I remember Alan Howard founder of AQC toner company, tell me that his

best tip for getting better density on the HP SX cartridge was to vigorously use wire wool on the magnetic roller sleeve. It worked but ruined the mag sleeve. However, he did develop great toners.

I arrived for my first meeting with Klaus Turbon, founder of Turbon AG of Hattingen, Germany, to find a building on an island surrounded by a water

Engineers as well as Optimists came together and pioneered a brand-new industry, taking spent consumables and re-manufacturing them for resale

moat with floating clowns and the walls inside decorated as a circus scene with Klaus of course painted as a huge clown. "Life is a circus," he said. "You have to have fun." What an engineer he was, developing ribbon manufacturing and many cartridge products, later turning his hand to designing and building high-

end apartments in Thailand.

Ed Swartz was not only a great engineer, but he also dreamed big and built Static Control from the ground up, one product at a time, always focusing on quality. Dr Diane Roy was a big influencer in the UK in the early '90s pioneering the eco-friendly benefits of reclamation and reuse. She supported the European remanufacturing association, and I also found her passion for the environment contagious. Laura Heywood of Kleen Strike is someone who does not take "no" for an answer. No matter how hard it was to get recognition and political help for the fledgling industry she was, and still is, relentless and fearless. Andy Mayfield became the guru of inkjet and designed/made ink filling machines for the industry, opening up new profit channels. Heinz Sieg, another great engineer, and



Andy Mayfield



Laura Heywood



Jan Hagemann (son of Günther)



Günther Hagemann



Jim Cerkleski

founder of KMP AG supported and pushed ETIRA—the European Toner & Ink Remanufacturing Association—to win remanufacturing recognition. No one thinks bigger than Jim Cerkleski of Clover Imaging Group who built a phenomenal remanufacturing business thanks to his vision and determination. Günther Hagemann, the founder of Integral, built a very solid toner business and has tremendous passion for the industry driving it forward at every opportunity.

Great to see the sons of Hagemann and Sieg now running those companies.

Siegfried Koch was the chemist behind all those OCP inks that led the field in quality and IP safety and Jackson Wang has become the first industry billionaire leading the global charge of the Ninestar group which dominates the industry landscape, great vision and a determination that is unparalleled.

It has not all been sweetness and

light looking back, many companies did not make it. Many individuals are sadly no longer with us. The game has changed several times over the last 40 years and the survivors have learned to adapt and remain agile. Also, let us not forget the ingenuity of the OEMs and their engineers, pioneering new products on which the aftermarket feed. Let us not forget those chip companies

The game has changed several times over the last 40 years and the survivors have learned to adapt and remain agile

that have kept the aftermarket products in the marketplace, investing whatever was needed to keep us all going. Steve Miller of Chips Inc, for example, has steadfastly refused to be beaten by OEM technologies and is not afraid to defend his own technologies when challenged by OEMs. My money has always been on Steve to prevail.

Chester Carlson goes down as the man who started it all. An engineer—surprise, surprise! Some 83 years ago, on October 1, 1938, the first copy image was put on paper. He sold his invention to Haloid Company which later became the Xerox Corporation.

Our quick glance in that rear-view mirror has given us a vision of a wonderful combination of talents.

Each, in their own inimitable ways, has shaped what we are today. It's been a tough road and it has never been easy. If it was too easy it would not be worthwhile. We have lost some

along the way who could not survive, but we must keep going.

The industry has changed and the way to future profits will not be the same as they once were. Covid-19 impacts us all as we try to find new avenues to prosper. The gas tank is getting low for some, and new revenues and margins have



Siegfried Koch



Chester Carlson



Jackson Wang



Heinz and Jan-Michael Sieg (son)



Steve Miller

become urgent. Workers are staying at home, reducing office printing and forcing changes of direction to inkjet and away from laser and copier office-based machines. How can we all tap that? How do we adapt? How can we remain agile? The road is bumpy and is an uncomfortable ride. There is no certainty in the future. There is no guarantee that we can or will get to our destination.

But hold on, there never was. Those Engineers and Optimists never had a crystal ball. They never had certainty either.

The chipmaker never knows how long or how much money it will take to deliver the chip, but they know if they do not do it the certainty is they and the industry will lose out and the OEM wins.

Toner manufacturers need to develop the new toners, hoping the chip maker comes through otherwise there will be toner but no chip to make the cartridge

work. The OPC makers are in the same position. The chip is the key to the future, and it is vital that the Steve Miller's of the world, keep going and win their battles.

OEMs always under-estimate the ingenuity and talent of the Engineers and Optimists in our aftermarket industry. Someone always steps up to the plate to

Someone always steps up to the plate to replace those who did the same when it was their turn, back when.

replace those who did the same when it was their turn, back when.

Paper will not be going away any time soon, despite the paperless technologies. Putting printed images on paper will not go away either. Sure, what we print and why we print continues to change. And yes, we see a drop in printed paper usage. However, it's still a huge market

full of opportunities that lie on the road right in front of us.

What we learn from looking back is too keep going ... no matter what and where it takes us. Engineers and Optimists will continue to push this industry forward.

We owe a debt of gratitude to all those who stepped up at the right moment to get us to this point in time. We salute you all. ■



Steve Weedon is an award winning CEO who has held senior management positions at various OEMs as well as Katun Corp, Static Control Components and Cartridge World. He was the original founder of *The Recycler Magazine* and of trade shows in Europe. He is currently CEO at Print Rite Europe Ltd, Print Rite Pelikan Germany. Contact Weedon at <steve@prinrite-eu.com>



Stuart Lacey

Coming Full Circle

The manufacturers soon learnt that without consistent quality and reliability, they would not have a sustainable business.

In January 1990, I joined PPC Supplies in London as a young sales representative selling copier toners. Soon after, I was transferred to Paris managing their international exports.

PPC Supplies introduced one of the very first organic photo conductors manufactured by its partner Stanley in the US. But they were reluctant to expand into full solutions desperately required by the pioneers of the remanufacturing industry at that time. The embryonic industry had managed with whatever it could cobble together, but with the release of the SX cartridge and some of the more complicated (at that time) engines it was time to get serious with functional solutions.

I partnered with CF Supplies in Belgium to “grab the bull by the horns.” We were the first to develop complete combinations that guaranteed remanufacturers with consistency. Then, Static Control came to Europe and brought their incredible engineering capacity and knowhow from a much larger industry base in US. I joined them in 1995 and for 23 years saw our industry flourish despite every effort by the OEMs to make life as difficult as possible. The OEMs tried to squash this amazingly resourceful industry and some of the amazing pioneers that helped to build it.

It was inevitable someone was going to have the financial resources and industry clout to start building ‘new’ cartridges. Several larger players in Europe and America could have, but it was left to the resourceful Chinese who had an appetite for growth to finally take the plunge. Initially the products were unreliable and inconsistent, very much like the early days of the remanufactured cartridges. However, the manufacturers

soon learnt that without consistent quality and reliability, they would not have a sustainable business – no different to



anybody who was remanufacturing.

They learnt from the best in the industry. So, we shouldn’t be surprised to see them now producing, on the most part, excellent product. Unfortunately for the remanufacturers, the rise of the new build product has brought their demise. The sheer volumes and costings meant new product could be delivered at significantly lower prices – and with comparable, if not better quality.

The drive to scale up production, to reduce unit costs and compete for market share, has led to an acrimonious pricing war among the Chinese giants. There is little to distinguish between the individual factories and the products they produce. So, will this be a sustainable and profitable business for the future?

My answer to this is an emphatic “yes.”

After more than 31 years in this industry, I can safely say the demand for reliable and trustworthy products is unchanged. While the original concept of remanufacturing the OEM cartridge is mere shadow of its former self, we see an

ever-increasing demand from end-users and corporates, for locally manufactured products.

The pandemic has swept across the world and forced many nations to look at their domestic solvability. Constraints on imports, restrictions of travel, supply line disruption, unimaginable increase in shipping costs all add up to make a locally produced product far more relevant than it was just twelve months ago.

I am being asked more than ever if we can remanufacture the products we supply. We are also being asked, for the first time in many years if we can advise on opening bespoke remanufacturing plants. We

are being asked if we can train individuals or companies to start remanufacturing. In part its being driven to support the environment. However, the big push is to generate local manufacturing, create local employment and reduce the risk of supply issues.

I am convinced “remanufacturing” is turning full circle. New builds are now becoming the replacement for the OEM empty. Who is going to take the initiative in this in this embryonic industry to offer quality combinations to feed this opportunity?

Whoever does will get the lion’s share. ■

Stuart Lacey

RTGlobal
Partner
For Africa

South Africa-based Lacey is a 30-year pioneer of the office equipment and supplies industry and is keen to introduce key global suppliers to the big buyers across the African continent with RT VIP Expo one day intensive events in Nigeria, Tunisia and Ethiopia. Please contact <stuart@delace.co.za>

Dhruv Mahajan



Competition, Prices and Government Incentives Drives Growth

Established brands are sustainable and will deliver good profits and growth for your business.

It wasn't easy to write about the 40th anniversary of the global imaging industry in India. I'm just 32!

While I have spent 14 years in this industry, I am also well connected to those who have been in this industry since 1979. Can I call them seniors? They may not see it that way, but they provided me with the historical landmarks:

1. The first copiers used zinc oxide (ZnO) paper, then plates. Liquid toner machines arrived in the early 1970s. By 1979, shops and engineers found they could profitably sell aftermarket, compatible ZnO papers, inks and dispersants to reduce the costs of the parts to service the expensive machines;

2. In early 1980s re-inked recycled ribbons became widely available—firstly for typewriters and then dot-matrix ribbons. Shops in the large cities offered local solutions as imports were restricted, licensed and had 310% customs duty whacked on top;

3. In 1984 the government had a policy of giving bank loans to unemployed youth to set up photocopy shops. This led to a boom with at least 600,000 copy job shops across every town and village in India which led to tens of thousands of independent service engineers and a thriving aftermarket consumables market for all imaging products;

4. By 1985 the first laser printers were launched and dozens of entrepreneurs



with techie experience were soon refilling the very expensive original CX and SX toner cartridges with black toner powders and drums and making 800% markups;

5. India's economic reforms led to a welcome decline in customs tariff rates. From the "peak" rate of 310% in 1984, it became 150% by 1992, 40% by 1998 and 10% since 2007;

6. Today, imports account for over 90% of the imaging industry and all printers and copiers are 100% imported thanks to the government policy under ITA 2000 of zero percent customs duty;

7. The early foreign players in the industry were American leaders such as Katun and Static Control who saw the lucrative high growth and huge market potential. Then the Chinese factories created and catered to the demand of India's thousands of very small importers;

8. In recent times, the government is attempting to establish "Aatmanirbhar Bharat" to boost local manufacturing and is offering many industries between

4% and 8% incentives on incremental revenues where goods are manufactured locally in India. The "Made in India" policy is directed as a public procurement preference to promote patriotism with tax breaks;

Lessons learned from many struggling and failed company examples reveal it's very difficult to sustain a business in this industry in India. While it is a very large and fast-growing market, it is also hyper-competitive and highly price sensitive. A focus on quality, profitability, an enduring value, brand goodwill and user experience come second, or are, in some cases, entirely absent when it comes to brand and loyalty. Winning business by offering the lowest price alone is still the only way to get a foot in the door of your target customers.

Established brands are sustainable and will deliver good profits and growth for your business. Funnily enough, if there are those who try to copy your brand, or try to sell the same product as you, or claim to buy from the same Chinese supplier, it means you have arrived. ■

Dhruv Mahajan

**RT Global
Partner
for India**

Mahajan is based in New Delhi as the International Business Development Manager for OCT Imaging responsible for the Gulf and South-east Asia regions. Mahajan is partnering with RT to bring VIP Expo one day intensive events to cities in India each year. The OCT Imaging factory in Zhuhai has manufactured printer cartridges and distributed Mitsubishi drums and toners since 2011. Please contact him at <dhruvm@oct-imaging.com >



天威大廈
PRINT-RITE TOWER



Iconic Industry Pioneer Honored

— Print Rite's Founding CEO Arnald Ho celebrates being the first in China 40 years ago

 David Gibbons

40 years ago, in 1981, a brash young 22-year-old managed to convince family and friends to

but he had a lot of work in front of him.

International markets doubted Chinese-made products had the sufficient quality, consistency, and reliability to meet end-user expectations.

Ho took some of his Tian Wei (the Chinese pronunciation of Print-Rite) team with him to Europe and the USA to look for business partners and used the opportunity to better understand the market's needs.

He studied the world's ribbon makers and concluded that, from nation to nation, all the manufacturing processes for dot matrix printer ribbons were the same. "But I did notice something different," Ho said. "Their workers' fingers were just too big to put the ribbon into the cartridge quickly. That's when I realized their efficiency must be much lower than that of our workers in China."

At that time, OEM printers were just entering the Chinese market. "We saw tremendous opportunity within

loan him the HK\$100,000 (US\$12,900) he needed to start a business.

He rented a 35 sqm office, hired two technicians and 15 staff and started his 'Tian Wei' printer ribbon factory. Inkjet and laser printers had not quite hit the market, and everyone was using dot matrix printers.

Arnald Ho (pictured) was dreaming of becoming an industry entrepreneur,





A very young Arnald Ho at the opening ceremony of his ribbon factory in 1981.



The first factory Print-Rite established in Zhuhai was located in Nanping in 1988—the first printing consumables factory in China.

the printing business, but we also knew many printer OEMs had monopolies,” Ho said. “So, I came up with a bold idea: to manufacture our own printing consumables right here in China.”

Ho knew that China had the resources—the people and the technology—to successfully beat any of the best ribbon manufacturers in the world. So, he decided to invest in Zhuhai, making Print-Rite the first printing consumables company in mainland China. The Print-Rite ribbon factory in Zhuhai commenced operations in 1988 and was origin of the first Chinese-made printer ribbons to be used throughout the country and around the world.

The opening of China and the setting up of Zhuhai as a Special Economic Zone 40 years ago coincided with Ho’s own business plans. “We were lucky to be starting at the same time, and China’s open-door policies are one reason for our success. My little company was the first to make printer ribbons in China and we still make ribbons for dot matrix printers today.”

Interestingly, over the years since, nearly 600 other businesses got started and have made their names by creating 50,000 job



40

The number of years Print-Rite has been in business



3052

Number of patents registered as at July, 2021

opportunities and achieving annual sales of US\$40 billion to make Zhuhai a centre for the supply of printing consumables products to the world.

Then, in 1996, Print-Rite was also the first to remanufacture laser cartridges there.

Change

According to Ho, change is a very important part of a company’s DNA. “You have to be constantly prepared to change,” he said. “We moved from ribbons to inkjet, to laser, to 3D printing.” It is his belief that many iconic international imaging brands disappeared because they could not keep up with change.

Over the past 40 years, Ho has had to make many tough decisions. “Each decision involved change,” he said. “In the early days I started out as a trader, but I had to decide whether to move into manufacturing the components myself.” Ho had no idea about how to run a factory at the time but found good partners to help him change his business model.

According to Ho, there have been three main stages throughout Print-Rite’s 40 years of development all brought about due to change:



Print-Rite is awarded the Hong Kong Innovative Invention Silver Award for its newly launched 3D Metal Printing Technology on December 13, 2017



Arnald Ho unearths the first sod on his new tower project close the Macau border on June 19, 2008.



Arnald Ho explains the additive manufacturing process called 3-D printing at his newly opened display centre in Zhuhai on June 28, 2018

1. 1981-2004: Foundation

Print-Rite built its brand and developed various compatible products covering dot matrix ribbons, inkjet, laser printer consumables.

2. 2004-2010: Vertical Integration

Print-Rite integrated its upstream and downstream supply chain to transform manufacturing to smart manufacturing and create a flagship organisation.

3. 2010 to present: Upgrade

Print-Rite vigorously developed new businesses in 3D printing and digital printing and successfully upgraded from a manufacturer to a solution provider. In the near future, Print-Rite will integrate resources in the bulk procurement field and devote to OA integrated service

Throughout these 40 years, Print-Rite experienced its share of patent litigation cases. “Let me make it clear that Print-Rite has always respected third party’s intellectual property rights,” said Ho. “It is the first rule of our investment in new product development.” Ho believes OEM and aftermarket vendors are a natural match in the printing industry. “There



16

Number of awards related to innovation including the China Patent Gold Award and China Patent Excellence Award issued by the China Intellectual Property Office



52,000

Peak capacity of ribbons produced in one month

might be competition between the two, but they are not each other’s enemy, so long as each plays fairly.”

Ho reflected on the first lawsuit Print-Rite faced with Epson in 2000. At that time there was no patent guidance available. “After our first lawsuit with Epson, we learned very quickly about intellectual property and how the legal system works. We then realized we needed to protect our own technologies and designs.” The company now owns more than 3,000 registered patents developed inhouse.

“You have to respect the intellectual property of OEMs. You must not infringe!” Ho warned. “You must invest millions into re-engineering, designing, and endless research if you want to sell non-infringing products.” Ho says he has often been asked, but will never build, sell, or promote cartridges that infringe an OEM patent. Ho also added “Of course, the OEMs must learn to respect the intellectual property of the aftermarket too. It works both ways.”

Differentiation

Differentiation is another core ingredient in Print-Rite’s success story. “If you assemble

RtmWorld



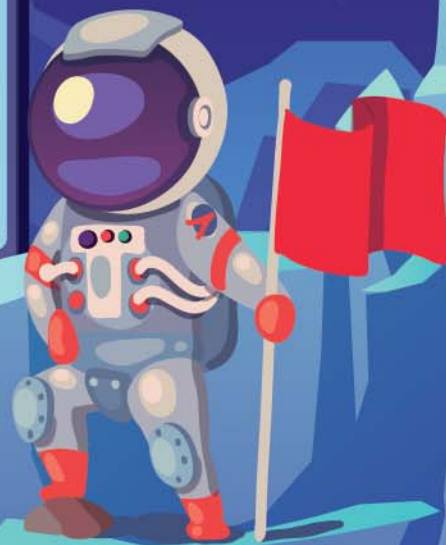
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Print-Rite picks up the exclusive brand licence to market and distribute “Pelikan” printer cartridges commencing July 1, 2017.

only,” Ho explained, “you are competing with 80% or 90% of the industry.” Forty years ago, the ribbon industry was divided into three sectors: those who made the moldings, those who manufactured the plastic (empty kits), and those who finished the product with the ribbon intact. “We were among the first companies in the world to combine these three processes into the one company,” Ho added.

Ho moved this integrated model across to his new inkjet cartridge business. Having already mastered inkjet ink production, and the plastic inkjet moldings and casings, Print-Rite was the first to develop aftermarket chips in 2003 for use in Epson inkjet cartridges. It was also the first company to remanufacture laser cartridges in China in 1996.

Using the same integration model in

2003, Ho then opened his own Zhuhai-based ICMI (China) toner production factory. In 2010, he acquired the AEG Photoconductor Shanghai drum plant, thus providing Print-Rite control of all the costs and quality in his laser business.

eCommerce has been another point of differentiation for aftermarket print consumables companies. Ho smiled. “I’m quite sure the horse enthusiasts all scoffed when the first motor cars arrived. As did the candlestick makers when the first electric light bulbs were turned on. eCommerce has already changed the way we do business. If you did not board that boat, you have already been left behind.”

The birthing of the significant aftermarket supplies industry at the same time Zhuhai was being developed as a

Special Economic Zone (SEZ) city has caught the attention of the newly opened Zhuhai Museum which has devoted space to sharing the Print-Rite story.

“We are very proud that Print-Rite products are exhibited at the Zhuhai Museum,” said Ho. The development of Print-Rite has always related to the growth of Zhuhai and we celebrate the achievements of the 40 years together.” Ho said that just as the museum promoted Print-Rite, he and the company he started also take the responsibility to oversee the development of the entire industry.

“The printing consumables industry is listed as one of the eight pillar industries by Zhuhai government and Print-Rite is motivated to continue providing leadership as we progress further together,” he said. ■

From Fishing Village World Capital

—the 40-year transformation of Zhuhai  David Gibbons

I have now lived and worked in Zhuhai for more than ten years. During this short time, I have seen amazing transformations including the construction of a fast rail link to the rest of China (which now has a more extensive network than the rest of the world put together) and the longest sea bridge in the world connecting mainland China at Zhuhai with Macau and Hong Kong.

It has been a rapid transformation for Zhuhai

in just 40 years following the March 5, 1979 orders by the Chinese Central Government in Beijing to establish four special economic zones (SEZs) in the thriving Guangdong Province in southern China.

The sleepy fishing village of Zhuhai was one of the four to be transformed into a

city of millions of residents ... and the world capital of printing consumables.

In 2014, the Chinese Academy of Social Sciences proclaimed, “Zhuhai is the most liveable city in China.” In recent times it is often referred to as the as being the being the Chinese “Riviera” and according to the 2020 census there are 1.76 million residents.

The implementation of Zhuhai as an SEZ was largely due to its strategic position

Commercial fishing in Zhuhai in 1976



e to



Many enterprises, including TopJet, have upgraded their facilities as Zhuhai develops into a dynamic modern city



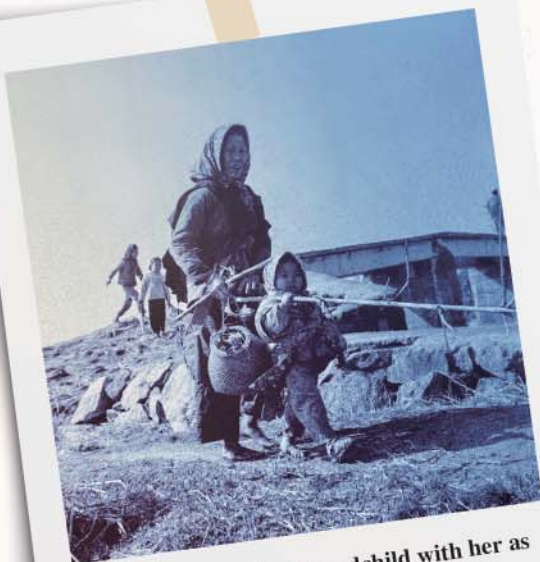
TOPjet
拓杰科技



Fishing in Zhuhai in 1978.



The first official meeting of city representatives in Zhuhai on 25 September 1980.



A woman takes her grandchild with her as she goes to work in the fields in a rural Zhuhai village in 1979.



An official urges the cameraman to step back as the first city officials arrive to celebrate the establishment of Zhuhai as a city on 20 November 1980.

adjacent to Macau, similar to Shenzhen's position with Hong Kong. Among the top 500 enterprises in the world, 19 have investment projects in Zhuhai including ExxonMobil, BP, Siemens, Carrefour and Matsushita.

Zhuhai literally means "pearl sea", which originates from the city's location at the mouth of the Pearl River as it meets the South China Sea. Today, Zhuhai is one of the key cities that make up the Greater Bay Area (GBA) which is the largest and most populated urban area in the world with 71.2 million people. The GBA—which includes Guangzhou, Shenzhen, Dongguan, Foshan, Zhongshan, Macau and Hong Kong—is comparable with the bay areas of London, New York, San Francisco, and Tokyo.

Zhuhai manufactures and supplies 70% of the world's ribbons, 60% of the world's aftermarket inkjet cartridges and 20% of the world's third-party laser toner cartridges. A comprehensive supply chain has been established in Zhuhai offering components as well as finished products which include remanufactured as well as new-build printer cartridges.

Much of the raw materials needed by the printer consumables industry can be provided locally.

With the establishment of the global printer consumables manufacturing industry, other new high-tech and heavy industries—including electronics, computer software, biotechnology, pharmacy, and petrochemical industries—have been established. A booming aviation industry, also based in Zhuhai which hosts China's air show, has seen the development of the AVIC AG600 Kunlong in 2017—one of the largest amphibious airplanes in the world.

The Zhuhai Museum (which provided many of the images for this article), was opened to the public on October 26, 2020 and chronicles the historic development of the city and its interdependence with the ocean.

The establishment of Print-Rite in 1981, at the same time the county was being proclaimed a city, is featured at the museum as the company that birthed the aftermarket imaging supplies industry in China 40 years ago.

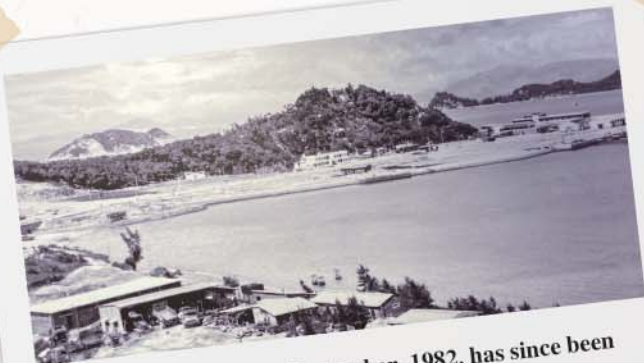
There have been many changes



Gongbei Port back in 1980 would be unable to handle the 10,000 people per hour transiting between Zhuhai and Macau in 2021.



Construction of the iconic Fisher Lady statue in Zhuhai Bay in 1983.



JiuZhou Port, back in September, 1982, has since been transformed so ferries can bring travellers to Zhuhai as a strategic gateway to China.



Rice farming in rural Bailian Dong, Zhuhai in 1983.



Zhuhai is also the capital for jewfish making up 80% of Guangdong's catch and 50% of all China.



President Xi visits a newly completed technology park in Zhuhai, on 22 October 2018.

over the past 40 years as the printer consumables industry has matured. Some companies have been publicly listed and many have moved into larger, more modern buildings, have introduced sophisticated automated production lines, have researched and filed their own patents, and have acquired second and third tier manufacturers as part of their horizontal and vertical supply chains.

Dinglong, for example, has established a strategic office in Zhuhai. This well-known chemical toner manufacturer based in Wuhan in Hubei province, was first in the Chinese office consumables industry to be publicly listed—at the Shenzhen Stock Exchange in China (300054.SZ). It celebrated its twenty-first anniversary in 2021. The group includes well-known component and finished goods companies and brands like Dinglong Chemical, Mito Color Imaging, Retech, Chipjet Technology, Speed Infotech Holdings, Printwell and Topcolor Image Products.

Ninestar was established in Zhuhai and is also celebrating its twenty-first anniversary in 2021. It is also publicly listed at the Shenzhen Stock Exchange (002180) as one of the top 500 listed companies in China. With its investment in its hi-tech printer park in Zhuhai, it is now ranked as one of the top five laser printer manufacturers in the world. The group has acquired several manufacturing businesses, not only in China, but in other countries including the USA. The Ninestar group includes Ninestar G&G Image, Apex Microelectronics, Pantum printers, Static Control Components and Lexmark.

And the development continues. Despite the global slowing of demand for printers and supplies, many

companies continue to grow stronger, particularly in Zhuhai, mainly through strategic relationships with each other. Companies like TopJet have refurbished their sites with the construction of a new tower in 2020, as did Print-Rite back in 2010 and *RT Media* in 2021.

The development of Ninestar's 900,000 square meter printer park, close to Zhuhai's Gaolan Port, began in 2019. It is being constructed with a total investment of US\$1.38 billion (9 billion RMB).

It will have the capacity to "intelligently" manufacture four million units per year with the expectation that many printer OEMs in Japan, Korea and the United States will look to China, and Zhuhai, to fulfill their hardware and imaging supplies needs into the future.

Zhuhai's story, as with the printer and supplies industry here, continues to adapt and develop briskly. ■



Zhuhai is rapidly becoming the world's largest hub for the manufacturing of printers.




Automation has allowed the hundreds of factories in Zhuhai to manufacture printing consumables more efficiently and is replacing hundreds of thousands of factory workers.




The newly commissioned Zhuhai Museum, which provided permission for images provided in this article, also houses a special tribute to Print-Rite as the first aftermarket supplies company to be established in Zhuhai.

How 3 Define



© Helen Duan, who is executive partner and general manager of Innopat Intellectual Property, has been involved in the IP field since 1991, and has gained considerable experience and success with more than ten US 337 investigations, the latest in April 2020 representing her client in defense of the Canon 337-1106 case. She has been awarded the "National Intellectual Property Leadership Talent" by the China National Intellectual Property Administration and is listed as an IP expert in China's national database.

37 Investigations and an Industry

 Helen Duan

The printing consumables aftermarket has been overcoming obstacles for 40 years. Despite the odds, it has made great progress.

Looking back, the global industry has experienced intense battles with the printer OEMs particularly with lawsuits in the European and the United States courts, the more recent battles over online takedowns on Amazon, and frequent and powerful 337 investigations in the US International Trade Commission (USITC).

As of June 30, 2021, there have been 17 seventeen 337 investigations in the printing consumables industry (for a detailed list, see page 33). Nine investigations ended up having General Exclusion Orders (GEOs) issued. In March 2021, Canon filed two 337 investigations and it is quite possible the USITC may again issue two GEOs. If so, that would bring the number of GEOs to 11.

In the face of continuous 337 investigations, China's domestic printing consumables companies have gone from being ignorant and timid to holding a more rational response. The experiences and lessons learned are worth our consideration. In this article, I list and review six typical 337 investigations that would have impacted and defined the printing consumables industry, not just in the USA and China but beyond.

Section 337 Investigations in the U.S.

Section 337 investigations are quasi-judicial procedures conducted by the USITC over intellectual property infringements and other unfair competition behaviors in import trade. may result which include general exclusion orders (GEOs), limited exclusion orders (LEOs), and Cease and Desist Orders (CDOs). GEOs and LEOs are enforced by the U.S. Customs.

A product which is the subject of a GEO is deemed to be infringing and is prohibited to be imported to the U.S. regardless of the origin of the imported product. All manufacturers, importers, and distributors of the product would be impacted, even if they are not the accused company or even

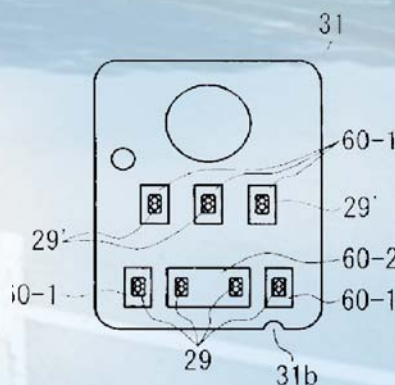
involved in the case. The products are simply "blacklisted" and cannot be imported or sold in the U.S. Some GEOs play the role of "clearing the field."

LEOs prohibit the infringing products of the accused companies from entering the U.S. market. CDOs prohibits infringing companies from engaging in activities related to infringement, including prohibiting the sale, inventory, publicity and advertising of infringing products in the U.S. Unlike the exclusion orders, a CDO is not enforced by the U.S. Customs but is implemented by the USITC itself.

1. 337-TA-565 Epson Cartridge Case

The 565 case was the first 337 investigation to be faced by the printing consumables aftermarket. On February 17, 2006, Seiko Epson (Epson) filed a 337 investigation complaint, accusing 24 companies (including nine Chinese companies) of importing and/or selling inkjet cartridge products in the United States, infringing 11 patents it holds in the U.S. and requested the USITC to issue a GEO.

The patents asserted in the 565 case mainly involve the sponge, sealing ring and chip of the ink cartridge, such as the 7-contact chip ink cartridge. The U.S. patent US6502917 (917) in the case shown in Figure 1 below shows the arrangement of the chips.



Attached drawing of the '917 patent



Picture of allegedly infringing product

Due to the concern the products may infringe the patents from a lack of understanding of 337 investigation rules, many companies were "non-participating" or found to be in default. Some companies actively participated in the case, which took about one and a half years, and on October 19, 2007, the USITC issued a GEO, LEO, and CDO.

The participating company appealed to the U.S. Court of Appeals for the Federal Circuit (CAFC). The CAFC upheld the USITC ruling. Later, some companies carried out a Customs Ruling and USITC Advisory Opinion, which took several years and cost a lot of money.

As a result, the ruling in this case dealt a huge blow to China's compatible ink cartridge industry, which was on the rise at the time. The orders prevented many compatible inkjet products from being imported into the United States.

It is worth mentioning that the Print-Rite Group was the first company in China involved with inkjet consumables. As early as 2000, Print-Rite had made innovative work around designs for the OEM inkjet-related patents. The company launched its innovative 86T ink cartridges for which it was awarded the 9th China Patent Gold Award, jointly issued by the State Intellectual

Property Office of PRC (SIPO) and the World Intellectual Property Organization (WIPO).



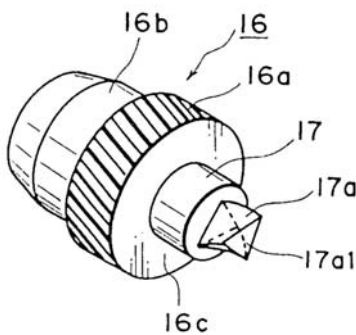
Print-Rite "86T" Ink Cartridge Series



Print-Rite "86T" China Patent Gold Award

2. 337-TA-731 Canon Toner Cartridge Case

The 731 case is the first 337 investigation to be filed by Canon Inc. of Japan, and it is also the first 337 investigation related to laser printing consumables. Around 1995, Canon began to deploy a driving force transmission component called the "twisted gear" and filed patent applications in Japan, the United States, Europe, and China etc.



Twisted gear



Photosensitive drum with twisted gears

On June 28, 2010, Canon filed a 337 investigation, accusing 20 companies (including six Chinese companies) that the toner cartridge products imported and/or sold in the United States infringed two of its US patents US5903803 and US6128454, and requested the USITC to issue a limited exclusion.

The primary company involved in this case began to actively respond to the. As it was considered it might be difficult to invalidate Canon's patent along with the high costs involved, all defendants signed a consent order with Canon in April 2011, agreeing not to import or sell the toner cartridges involved in the US. After lasting about a year, the case was officially ended on May 5, 2011.

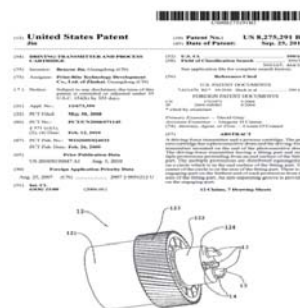
3. 337-TA-829 Canon Toner Cartridge Case

It took Canon less than a year after concluding the 337-TA-731 investigation to file a second 337 investigation. On January 23, 2012, Canon accused 34 companies, including four Chinese companies of importing toner cartridges into the U.S. that infringed two of its U.S. patents. These two patents were the same as the patents in the 731 case. But this case had a broader scope and Canon requested the USITC to issue a GEO.

In the 829 case, one defendant ended the investigation based on a consent order, with all other defendants not responding and found to be in default. After nearly a year and a half, on June 28, 2013, the USITC issued GEO and CDO.

In the 731 case, Canon had only requested a limited exclusion order for the listed respondents. In the end, all respondents were terminated from the investigation by signing consent orders. This may be the correct strategy for the patent right holder. It first target specific enterprises to "pilot" blockade, and then proceed to the entire industry, as was achieved with the 829 investigation.

As with the 565 case (mentioned above), Print-Rite was also not listed as a respondent in the 731 and 829 cases. This is because the company had innovatively designed its own solution for the OEM's twisted gear patent back in 2007. It launched its innovative design of the "No-Twist gear" and obtained its own U.S. patent (US8275291).



Print-Rite "No-Twist" US patent authorization

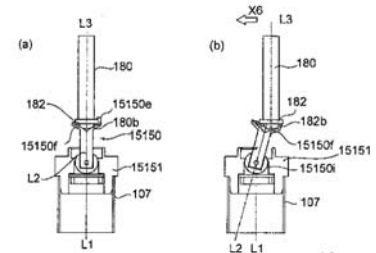


Report from Zhuhai Special Zone News

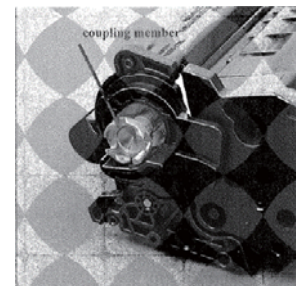
4. 337-TA-918 Canon Toner Cartridge Case

Around 2007, Canon began to deploy its "dongle gear" design on a global scale and carried out the layout and application of related patents on a global scale.

On May 7, 2014, Canon filed a 337 investigation complaint with the USITC accusing 33 companies, including 11 Chinese companies of importing and/or selling toner cartridges in the United States that infringed nine of its US patents. It requested a GEO.



"Dongle gear" structure



CE505A toner cartridge

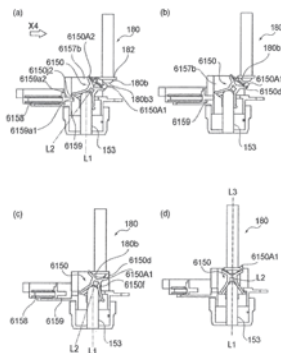
Of the Chinese defendants, only one company failed to respond and the remaining companies actively responded to the complaint. The investigation lasted fifteen months and on August 31, 2015, the USITC issued a GEO and a CDO.

To my understanding, the "dongle gear" is a technical update iteration carried out by the patent right holder considering the performance of the "twisted gear" product and the protection period of the patent. From technological innovation to its worldwide patent protection, it can be regarded as a classic R&D and IP model.

5. 337-TA-1106 Canon Toner Cartridge Case

Around 2013, Canon upgraded and innovated its "dongle gear" design. Between 2016 and 2017, it used the US patent continuation application to file new patent applications and to further expand the scope of claims of the patents asserted in the 337-TA-918 case.

Within six months of this batch of continuing patent applications being granted, a new 337 investigation complaint was filed on February 28, 2018, accusing 49 companies, including 14 Chinese companies of importing and/or selling products in the United States that infringed its nine of its US patents. It was instituted as the 337-TA-1106 investigation.



"Dongle gear" continuation application structure

The main defendants in the 1106 case, Ninestar and Print-Rite, each responded actively.

On August 30, 2018, the USITC held a "Markman hearing" where both sides debated the scope of protection of the patent claims involved in the case. On February 28, 2019, the USITC Administrative Law Judge (ALJ) made a restrictive interpretation in favor of the defendant. Then, on March 13, 2019, the

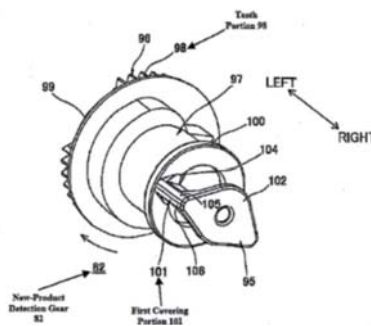
ALJ made an initial determination and ruled Ninestar, Print-Rite, and others involved in the case had not infringed. On May 20, 2019, the USITC affirmed the ruling made by the ALJ and terminated the investigation. On April 20, 2020, the CAFC upheld the USITC non-infringement determination.

Compatible consumables manufacturers such as Ninestar and Print-Rite achieved a full victory in this case—an important milestone victory after a decades-long battle over intellectual property disputes.

6. 337-TA-1174 Brother Toner Cartridge Case

The 1174 case is the first 337-investigation filed by Brother Japan (Brother). On August 19, 2019, Brother filed a 337 investigation complaint with the USITC, accusing 32 companies, including eight Chinese companies, of importing and/or selling toner cartridges in the U.S. that infringed its five U.S. patents. Unlike the previous 337 investigation, most of the defendants in the '1174 case were Amazon sellers or distributors, with only one manufacturer being named.

The 1174 patent relates to Brother's detection gear, conductive electrode and gear chain.



Detection gear structure



Products involved

A total of 11 companies responded to the complaint. While actively defending, some of the companies in the complaint successively launched new non-infringing designs and confirmed with Brother through "Joint Stipulation" that the new innovative design would not be subject to any exclusion order.

The matter lasted one year and three months. On November 23, 2021, the USITC made its final determination and issued a GEO and CDOs.

From the above several typical cases, it can be seen that the characteristics of 337-investigations is having relatively short trial periods, high response costs and severe remedies.

The 40-year history of the aftermarket reveals it is either invests earlier for innovation or later for litigation. When dealing with OEM intellectual property rights, it is necessary to make Freedom to Operate (FTO) to exercise innovative design. When facing litigation, it should be professionally and rationally proceeded.

Only with continuous investment in technological innovation together with respect for intellectual property rights and rules can the aftermarket steadily survive and stand firm in an increasingly competitive market.

Snap your fingers and 40 years flashes by. We can look to the past to give us direction as we look to a future voyage filled with innovation. Snap your fingers, and the next 40 with innovation will be a better experience. ■

No	Case number	Complainant	Date	Products involved
1	337-TA-565	Epson	2006-2-17	Certain ink cartridges and components thereof
2	337-TA-581	HP	2006-8-1	Certain inkjet ink supplies and components thereof
3	337-TA-691	HP	2009-9-23	Certain inkjet ink supplies and components thereof
4	337-TA-711	HP	2010-3-5	Certain inkjet ink cartridges with printheads and components thereof
5	337-TA-723	HP	2010-5-25	Certain inkjet ink cartridges with printheads and components thereof
6	337-TA-730	HP	2010-6-25	certain inkjet ink supplies and components thereof
7	337-TA-731	Canon	2010-6-28	Certain toner cartridges and components thereof
8	337-TA-740	Lexmark	2010-8-20	Certain toner cartridges and components thereof
9	337-TA-829	Canon	2012-1-23	Certain toner cartridges and components thereof
10	337-TA-918	Canon	2014-5-7	Certain toner cartridges and components thereof
11	337-TA-946	Epson	2014-12-23	Certain ink cartridges and components thereof
12	337-TA-960	Canon	2015-6-12	Certain toner supply containers and components thereof
13	337-TA-1011	HP	2016-5-27	Certain inkjet printers, printheads, and ink cartridges, components thereof, and products containing same
14	337-TA-1106	Canon	2018-2-28	Certain toner cartridges and components thereof
15	337-TA-1174	Brother	2019-8-19	Certain toner cartridges, components thereof, and systmes containing same
16	337-TA-1259	Canon	2021-3-8	Certain toner supply containers and components thereof
17	337-TA-1260	Canon	2021-3-8	Certain toner supply containers and components thereof



Gustavo Molinatti

Revealing the True Latino, Visionary and Pioneering Spirit

We should not fail to highlight the work of these aftermarket pioneers, many of whom are still in business.

Where were you 40 years ago? In some other business? At university or at school? You may not have even been born yet.

I was in my teens, in my third year of high school and with many doubts about what professional career I might follow. I liked law and veterinary medicine. But I followed my family legacy and studied architecture.

And what about the rest of the planet? 40 years ago, the world was a very different place. In the United States, actor Ronald Reagan took possession of the presidency, and the first space shuttle mission was launched. In Latin America, many countries such as Brazil, Argentina, Chile and Uruguay were still under the rule of military dictatorships and beginning a slow transition towards democracy. They were difficult times, socially, politically and economically.

In the midst of all this, a few visionaries perceived the business potential of third-party printing supplies. Later it became known as the aftermarket. Even before the advent of laser and inkjet printers these pioneers took their first steps in offering alternative products to the market. Gabriel

Gomez Quintero from Componentes de Colombia was one such pioneer. He started a factory of generic tapes for manual typewriters in 1982. "Competitors did not believe in generic brands and neither did the original leaders of IBM and Olivetti," Quintero said. "Then we went on to make ribbons for electric typewriters, dot matrix printers, ATMs, dataphones and supermarket checkouts. In Colombia we consolidated four generic factories. In 2002 we started the remanufacturing of toner for laser printers, which we still do today, basically with the support of Static Control."

Another well-remembered aftermarket pioneer in Latin America is Don Arturo Choís, who emigrated from Peru to Colombia in 1981. In 1984, he joined the Nu-Kote office supplies division—a Burroughs firm. He holds the position of Operations manager for Latin America. In 1990, Nu-kote acquired the Colombian firm Onix Ltda. Which used to produce office supplies.

In Mexico, the first to start a remanufacturing business was Eloy Ríos

from Cad Toner. "I have been in this industry for 36 years," he told me. "In 1988, as Cad Toner, we acquired a small franchise from a company in Austin (Texas, United States) called LaserCharge, which allowed us to learn how to remanufacture toner cartridges. Yes, we refilled the first cartridge in Mexico." With some nostalgia, Ríos reflected, "I fondly remember the objective at the time was to recharge one toner cartridge each day to obtain the balance point that would allow us to meet the expenses of our small family business which included my wife, a driver and a recharger. Over time it became a solid company in Mexico."

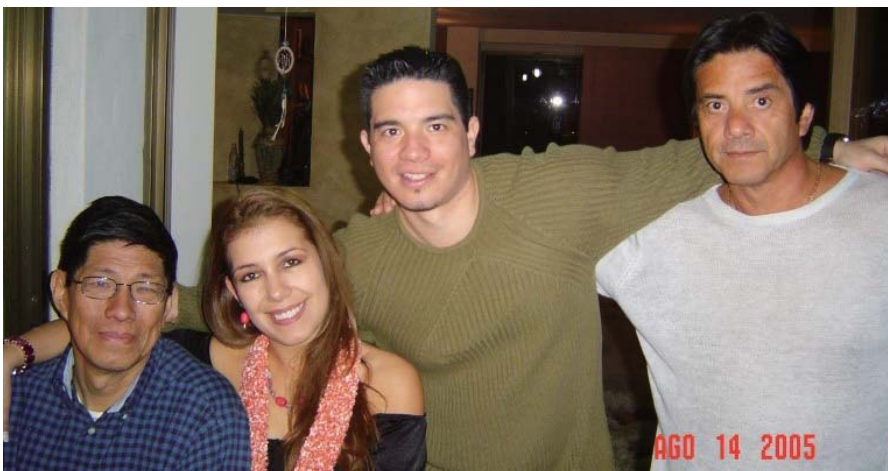
Starting in the 90s, several other companies from across Latin America, especially in Mexico, Brazil, Argentina and Colombia, entered the world of third-party printing supplies. It was only towards the end of the decade and the beginning of the new century that remanufacturing emerged with great force across the entire continent.

In drawing a 40-year timeline of the industry, we should not fail to highlight the work of these aftermarket pioneers, many of whom are still in business. I join you in applauding them through this edition of the magazine for their vision and leadership, which allowed thousands of Latino companies to access a promising business for decades. ■

Gustavo Molinatti

**RTGlobal
Partner
for LATAM**

Molinatti is based in Buenos Aires, Argentina and is publisher of Guía del Reciclador—the Spanish language magazine first published in 2002 for the Latin American printer cartridge aftermarket. He has organized more than 20 technical and MPS training events in several countries and is helping RT bring VIP Expo events to Brazil, Argentina, and Perú. Please contact <info@guíadelreciclador.com>



Don Arturo Choís (left), pioneer of the aftermarket in Colombia, built together with his sons one of the most recognized companies in Colombia: Compañía Manufacturera Onix S.A.

5 QUESTIONS

Coming of Age, Lessons in the Desert and Dealing with Pricing Pressures

Benjamin Young was one of three partners that started Speed Infotech 20 years ago. Today, as part of the Dinglong Group of companies, Young has been promoted as the head of all imaging supplies for the whole group.

Companies within the Dinglong Group are celebrating key birthdays this year: Dinglong Chemical is 21, Speed and ReTech are both 20. What does this level of experience mean for buyers?

Our customers are the winners because having such industry experience means we have a deep understanding of how industry ecosystem works and of the healthy growth trends. Having such in-depth insights allows us to create added value for our customers.

It also means we can be innovative and it gives us the confidence to be truly cooperative. In fact, we can now take the position to advocate these qualities at an industry level, not just as a company.

Given well known brands like Dinglong Chemical, Mito, Printwell, Chipjet, Speed and ReTech, why should buyers view the Dinglong Group as a one-stop-shop solution?

We can genuinely provide an experienced, one-stop-shop solution for reman, new build, for ink, for toner and other imaging supplies. Dinglong uses its influence as a strength to put all the steps in place for a strong upstream supply chain to ensure consistent quality products to meet our customers' needs. The most important is, we are the one-stop partner for all.

What did you achieve by taking team leaders from the various companies on a trek through the Gobi desert in 2021?

In no man's land, the wind is all that you hear. The desert is all that you can see. It was an unforgettable opportunity to listen to

your own heart and to your own soul. It has a profound impact upon you personally.

It also develops a sense of "the team." Only by being connected can you conquer 88km in 3 days by hiking in such a desolate place. The Gobi desert pushed us to go beyond our imagination to truly grasp the relationship between the individual and the team. We discovered the truth: "One can go fast, but the team can go further."

On this journey, the Dinglong Imaging and Printing business unit also examined its inner thoughts, and realized that the team and the customers are an integral part of "going further."

Why have you been so publicly outspoken in warning Chinese manufacturers to stop the deadly price-wars?

Having a reasonable price constitutes a "crucial" part of product. But it is not the full picture. Other "crucial" parts include quality and service if you are to satisfy your customers.

Low pricing with no limits will destroy the whole industry, not just one company. If you are forced to cut all

your costs you cannot afford the best raw materials and R&D support and you end up settling on an ordinary product with ordinary results.

Having reached key birthday milestones what new level of responsibility does it place on you for the future of this industry?

As I said, we can use this valuable experience to advocate for industry innovation and cooperation.

- Dinglong pours innovation into the development of key components such as toners, chips, and rollers;
- Dinglong encourages fair competition and discourages malicious monopoly;
- Dinglong adds value for its customers;
- Dinglong insists on being a pioneer!

We initiate innovation and healthy competition has always been at the core of Dinglong and always will be. ■



Benjamin Young, General Manager of Printing and Imaging Business Unit, Hubei Dinglong Co., Ltd., <benjamin@speed-china.com>

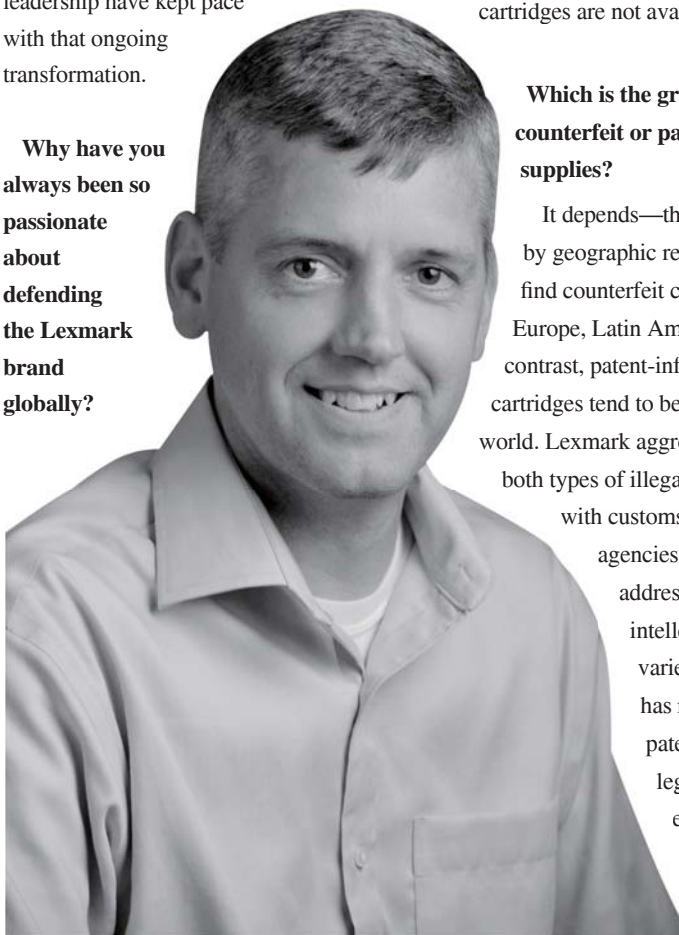
5 QUESTIONS

Lexmark's Global Brand Manager Accepts ISC Chairman Role to Defend OEM Brands

Lexmark is celebrating its 30 year anniversary. What has been key to the company's success?

From the very beginning, customers have been our focus, and remain so, today. Lexmark's vision statement "We help our customers make a lasting impression on their world" directs our day-to-day purpose. Our ability to move quickly, being responsive and meeting customer priorities as they evolve, has driven our success. Advances in print, imaging and digital technology are transforming how our customers work. We are proud that our hardware and software solutions leadership have kept pace with that ongoing transformation.

Why have you always been so passionate about defending the Lexmark brand globally?



We're passionate about our products and our brand. It's my job to support and defend the Lexmark brand globally. Our customers and channel partners count on us to provide high quality, genuine Lexmark supplies and parts. My mission is to protect them from inferior, trademark-infringing counterfeit toner cartridges and patent-infringing compatible cartridges. Lexmark's Brand Protection program uses a variety of methods—from on-the-ground investigations to online monitoring and cloud-based tools—to ensure a level playing field for our partners. We're doing everything we can to guarantee that illegal cartridges are not available in the marketplace.

Which is the greater problem: counterfeit or patent-infringing imaging supplies?

It depends—the issue really varies by geographic region. Typically, we find counterfeit cartridges in eastern Europe, Latin America and Asia; by contrast, patent-infringing compatible cartridges tend to be available all over the world. Lexmark aggressively defends against both types of illegal cartridges. We work with customs and law enforcement agencies around the world to address counterfeiting. While intellectual property coverage varies by country, Lexmark has repeatedly addressed patent infringement via civil legal action. We've also enforced our intellectual property rights at major trade shows, including

Remanexpo in Frankfurt and *RemaxWorld Expo* in Zhuhai.

How does a purchaser know they are buying a genuine Lexmark cartridge?

If you think the price is too good to be true, it probably is. Be familiar with Lexmark market prices before making a purchase. Make sure you buy products only from Lexmark or an authorized reseller. Packaging that appears to have been tampered with, resealed, contains spelling mistakes, or looks reused may not be genuine product. We use security labels to help identify genuine Lexmark products. Visit Lexmark.com/identify to authenticate security labels and cartridge serial numbers. For additional information on other printer brands, visit the ISC and ICCE websites.

Why have you taken such a serious responsibility with ICCE and ISC?

The members of both organizations—the ICCE in Europe, and the ISC in the US—are committed to fighting counterfeit and fraudulent activities. We're all in the same boat: we want to safeguard our channel partners and customers. I've been very fortunate to work with a group of committed, like-minded brand protection professionals. These trade organizations give the printer OEMs a forum to share best practices, to coordinate advocacy activities, and to develop relationships with law enforcement. They also allow us to present a united front against common brand protection-related issues in our industry. It's a real privilege to participate in both groups and to help guide their activities. ■

Andrew Gardner, Brand Manager, Lexmark, < andrew.gardner@lexmark.com >



Mark Dawson

How Consolidation, Protection and Sustainability Are Impacting Us

Only when we have alignment between wealth creation and sustainability, will real progress be made.

As I was reading about Lexmark's 30th Anniversary, I was reminded of the events that led to the creation of my first employer.

In 1978, nine years before I graduated from university, and long before I knew what private equity was, an investment company called Clayton Dubilier was founded in New York. In 1991, they spun Lexmark out of IBM's printer and keyboard manufacturing business.

However, this was not the first deal by Clayton Dubilier in our space. By the late 1980s, the mainframe computer market was dominated by: Honeywell; NCR; Control Data; General Electric; DEC; RCA; Sperry Rand; Burroughs and IBM. Consolidation was inevitable. One notable transaction saw Burroughs acquire Sperry for \$4.78 BN in 1986, creating Unisys.

Simultaneously, Unisys divested several periphery activities. One was the business forms and supplies division. With a turnover of \$150M, it employed 1,300. The new company was called Nu-Kote. The \$50 million leveraged management buyout was driven by Clayton Dubilier.

Six months later I had graduated from university. Student life had saddled me with a large overdraft. Notions of backpacking around the world were dismissed by a humourless bank manager.

I had to get a job.

Nu-kote operated a factory in the UK. Business was booming. The portfolio of OEM customers included Epson, OKI, Triumph Adler, and (of course) Unisys.

Brother had opened a new typewriter plant nearby. Nu-kote won the deal to supply the ribbons. They were recruiting graduate management trainees. One was



in the Quality Assurance Team to help commission a robotic assembly line.

I got the gig in 1987.

As I reflect on the last 34 years, three things stand out.

Firstly, there is "consolidation." It was overdue in 1986. It is now overdue for printing and copying. COVID-19 may have delayed some diaries, but it accelerates the need. It is coming and not just in the OEM sector. It will bring both threats and opportunities. Be ready.

Secondly, there is OEM "protection." Back in 1987, there was no "aftermarket". The OEMs built machines. We built supplies. This changed with the advent of inkjet and laser. OEMs adopted the "razor and razor blades" sales strategy. The race to place devices at or below cost has been in full swing ever since. OEM supplies revenues are more critical than ever. Expect even more IP challenges, more subscription models, and more technology to try and lock us out. Stakes are high. OEMs will take bigger risks in compromising consumer rights and choices.

Third is "sustainability". The divorce between equipment and supplies manufacturers was one of the drivers for the birth of laser cartridge remanufacturing.

The other was sustainability. Back in the 90s we had the Rio Earth Summit, Agenda 21, the Kyoto Protocol, and its focus on human made CO2. Many summits, meetings, agreements, and protocols followed, including Paris in 2015. Now we head towards COP Glasgow in November 2021, as the EU announces plans for carbon neutrality by 2050.

There is broad political agreement that while progress has been made, it is not enough. If we really want to leave a sustainable planet for our children and grandchildren, not only must we do more, but we must be quicker.

Yet, for the OEMs, consumption is the "drug of choice." Only when we have alignment between wealth creation and sustainability, will real progress be made. Delayed obsolescence, design for repair, and longer product lifecycles must be central to competitive advantage. Not the opposite.

The circular economy shows us the way and provides remanufacturing with an increasingly important role in our industry. Users need us! Are we shouting loudly enough! ■

Mark Dawson

RT Global
Partner
for EMEA

Mark Dawson is RT Imaging World's Regional Partner for Europe and the Middle East. He joined the imaging supplies industry in 1987 and has held senior positions with both American and European corporations, including MSE and Clover. He is currently building RTC/IOP (Real Time Communication BV) whose mission is to help independent resellers find new revenue streams and optimize margins. Dawson has partnered with RT to provide consultancy for manufacturers with plans to increase share in Europe and the Middle East. For more information, please contact him at <mark@iopbv.com>



The global industry

turns 40

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