2018 HIGHLIGHTS

SUSTAINABILITY REPORT
A LETTER FROM OUR CEO

In 1996, Clover was founded with the simple vision that we could take an empty printer cartridge and remanufacture it into a high quality product using fewer resources and with less environmental impact than a new-build cartridge. And, while a lot has changed in the imaging industry over the last two decades, this unwavering commitment to environmental sustainability and responsible business practices has not.

22 years ago, the word sustainability was not the buzzword that it is today, but from the beginning it has been one of Clover’s core values and the foundation of our circular business model. We are a business that by our very nature weaves sustainability into all aspects of our operations. As more and more businesses and consumers become committed to purchasing sustainable products manufactured by socially responsible companies, Clover is uniquely positioned to make a significant impact on the way we produce and consume goods.

As you will see in this year’s Sustainability Report, we continue to make tremendous progress in advancing our sustainability initiatives. In 2018 alone, Clover diverted over 42 million cartridges from landfills. That amounts to over 10 million pounds of materials put back into use. Reuse, however, is only one aspect of our sustainability strategy. Every team at Clover, from research and development to manufacturing and distribution, contributed to our efforts by developing new and better ways to reduce our overall footprint, minimize waste and maximize efficiencies. As this report highlights, creative teams in every department have been empowered to develop innovative solutions to help us achieve our ambitious sustainability goals.

This is just the beginning. As the world’s largest remanufacturer of imaging supplies, it is incumbent upon our leadership to drive corporate environmental responsibility and raise industry standards. In support of this endeavor, you will see us continue our investments in automation and research and development, and to champion projects that positively impact the earth by extending the useful life of the products we produce.

Our commitment to the environment and the communities where we live and work began in 1996 and remains the same today. It is reflected in the efforts of our team members who work tirelessly every day to create quality, environmentally superior products that create a better future for all of us. We continue to embrace sustainability as a core value and are proud to share our 2018 Sustainability Report.

George Milton
CEO | Clover Imaging Group
Clover’s annual Sustainability Report details our ongoing commitment to strengthening our environmental objectives, lessening our environmental footprint, and empowering our employees to make a difference.
This year, as we publish our tenth report, we are very proud of the strong foundation of environmental sustainability we have built throughout the years.

**Highlights featured in the 2018 report include**

- Reforestation Efforts
- Artificial Intelligence Machine Learning Technology
- Remanufacturing Operations
- Cartridge Collections
WE THINK BIG

Our Top Sustainability Initiatives

01. Minimize our carbon impact
02. Prioritize remanufacturing, reclaim as much reusable material as possible
03. Maximize recapture of raw materials in collections
04. Measure impact of water and energy consumption and minimization of waste
05. Promote waste reduction throughout our operations
06. End-of-life processing for all assets collected that cannot be remanufactured
07. Recycle our cardboard, mixed paper and metals when possible
08. Exceed global industry practices for responsible materials recycling
GLOBAL COLLECTIONS & REMANUFACTURING SCOPE

COLLECTED

- 42,587,795 units
- 10,646,949 pounds

REMANUFACTURED

- 16,551,128 units
- 4,137,782 pounds

GLOBAL CERTIFICATIONS

- ISO 14001:2015
- ISO 50001:2011
- ISO 14001:2015
- ISO 9001:2015
- ISO 45001:2018

*Model’s management system has been certified to ISO 14001:2015.
SUSTAINABLE PRODUCTS FOR A BRIGHTER FUTURE

Remanufactured Printer Cartridges
They consume less materials and use fewer natural resources than single use cartridges. It’s important to note that when a printer cartridge is remanufactured by Clover, it is a reused cartridge – a cartridge that would have otherwise ended up in an overburdened landfill. Reuse is the highest form of environmental responsibility and is superior to recycling in that it does not use non-renewable resources to breakdown plastic and metal. Multiple government agencies, including the Environmental Protection Agency, have stated that a printer cartridge and all its components should always first be evaluated for refurbishment. If refurbishment is not possible then responsible recycling should be pursued.*

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** Data from a 2010 Clover-funded Life Cycle Analysis (LCA) conducted by RIT on the SEB 12A.
Clover evaluates every empty cartridge that is received – first for remanufacturing potential, and secondarily for material recovery through recycling. Each re-manufacturable cartridge is put through our multi-step remanufacturing process and returned to the marketplace. If a cartridge is not re-manufacturable, all viable components are harvested for use in the remanufacturing of other cartridges or recycled to produce other products. By harvesting these components from the waste stream, we conserve the nonrenewable resources that would otherwise be required to make them from scratch.

“There is no such thing as ‘away’ when we throw anything away it must go somewhere.”

— Annie Leonard
A Circular Process Driving Towards ZERO WASTE
Clover’s intellectual property portfolio now consists of 69 issued patents and 27 patents pending (U.S. and foreign).

Many of the technological advances described in these patents focus specifically on promoting the efficient use of resources by facilitating the reuse of existing components during remanufacturing operations. Clover’s vertical integration and investment into automation engineering allows us to take control of key aspects of our business in order to provide our customers with a highly sustainable and superior quality product while reducing our environmental footprint.
OUR NORTH AMERICAN BUSINESS OPERATIONS
Clover is proud to partner with PrintReleaf, the industry-leading certification system and software platform for automated global reforestation. PrintReleaf uses patented technology to track paper consumption and calculate the number of trees harvested. Using this data, PrintReleaf guarantees to certifiably reforest the number of trees used by each client.

The PrintReleaf platform seamlessly integrates with the managed print services we offer our resellers and their clients, providing them with the opportunity to offset their paper footprint while contributing to global reforestation efforts on a monthly basis.

407,770 Trees reforested through Print Releaf Exchange
The Clover Transportation and Logistics team worked throughout 2018 to minimize our carbon footprint. Our teams made emissions reduction and lower energy usage a key tenet to our operating plan. In conjunction with our internal partners, customers, and vendors, we identified areas for increased focus.
We identified the following areas for increased focus:

1. Reduce over-the-road shipments resulting in less miles driven and thus lower carbon emissions.
2. Increase our use of rail and intermodal shipments resulting in fewer trucks being used.
3. Devise better load build strategies for more condensed and less frequent shipments to maximize every shipment’s energy usage.
4. Optimize our distribution network to lower the overall miles driven for every delivery, resulting in less miles and less energy usage.
Through our focus and collaboration, we achieved significant results on our goals!

Clover’s Transportation and Logistics team holds sustainability and limited environmental impact as a key pillar of our best-in-class delivery programs. We will continue to seek out new and innovative ways to limit carbon emissions through process engineering and technology enhancements.

- **13.5% reduction in travel**
  Outbound over-the-road shipments reduced 13.5% year over year (YOY).

- **20% reduction in travel**
  Inbound shipments were reduced 20% YOY through stronger build and frequency strategies.

- **6% increase in load capacity**
  We saw a 6% increase in our load capacity YOY for our rail shipments and continue to increase our packages per container by 12.4% on our small package zone skipping program.

- **6.6% decrease in miles per shipment**
  Decrease in miles per shipment by 6.6% YOY through best location shipment routing.
FROM SMALL STEPS TO GIANT LEAPS

We are leveraging Microsoft’s AI machine-learning technology to drive a smaller footprint
DISTRIBUTION

In 2018

Clover completely changed the way we receive, store, pick, and process our finished goods.

In partnership with Microsoft, we developed a machine-learning, artificial intelligence-based sales forecasting system to help minimize waste and enhance our overall operations. These enhancements included more predictive tools that help consolidate our storage footprint while providing more accurate forecasting to ensure better service levels for our customers. We also made hardware upgrades that increase our picking efficiencies, thereby reducing our processing hours and energy usage.

Our Distribution Centers are active participants in the reusing, reducing, and recycling initiatives instituted by the other functional areas within Clover. These initiatives include the reuse of packaging material, recycling of plastic and corrugate, and reduction of landfill waste through facility recycling efforts.
Reducing chemicals and waste in the remanufacturing process

Our Research and Development team devotes increasingly more effort each year towards achieving new sustainability milestones. This past year, R&D developed a more effective cartridge cleaning solution. By working more effectively, this new solution translates to reduced cost and less waste.

In addition, the R&D team created more economical approaches to processing cartridges. While the approaches are multifaceted, they include the reuse of cartridge components in the remanufacturing process, optimizing print yields by altering toner fill amounts to reduce toner waste, and significantly reducing and/or completely eliminating the use of chemicals in our cleaning processes.

With these new approaches, our team has reduced processing time per unit, reduced material use, and increased output, all of which positively impact our overall environmental footprint.
OUR SUSTAINABLE PACKAGING FRAMEWORK

Responsible environmental behavior through packaging, reuse and recycling
Sustainable Forestry Initiative®

All vendors providing final exterior packaging for Clover’s finished inkjet and laser cartridges are certified by the SFI program, which is based on the premise that responsible environmental behavior and sound business decisions can co-exist. Each of these partners has been SFI-certified to practice sustainable forestry on all lands it manages.
PACKAGE REUSE & RECYCLING EFFORTS

7,514 lbs
HDPE Foam
Recycled

382,250
Molded Pulp End Caps
Reused

871,886
Cartridge Shipping Protectors
Reused

4,424
HDPE Foam End Caps
Reused