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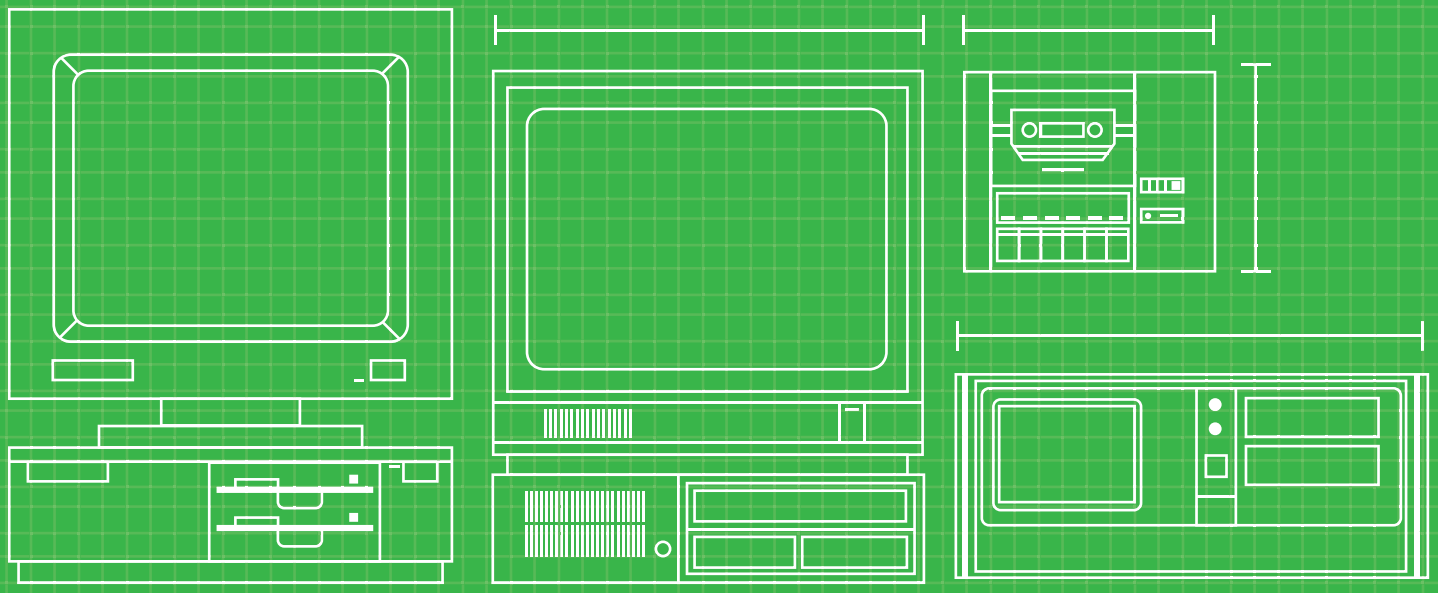

PROFILES: PERSPECTIVES OF AN E-SCRAP PIONEER

What was electronics recycling like before certification, the tech bubble or the Internet age? E-scrap has come a long way, according to one of the industry's early innovators, highlighted in our recurring E-scrap Profiles series.

BY JENNY SCHUCHERT

The electronics reuse and recycling industry has experienced exponential growth in recent decades as organizations in every sector seek protection from data, environmental, brand and compliance risks. The response to the need was a rapid but responsible, its evolution was guided by a handful of forward-thinking innovators. One of them is Ray Chapman.

Chapman, whose career in the electronics business began with the introduction of the home computer in 1974, was one of the first to recognize the growing problem of electronics waste and resolved to do something about it. His story is a clear example of how the industry has grown along with clients' understanding and requirements.

"There was an established demand for the recycling of certain components from electronics," recalls Chapman, who in 1987 founded Texas-based Resource Concepts, Inc. (RCI), one of the first companies to offer data security, secure disposal and electronics recycling. "By the late 1980s, hundreds of companies were removing components from circuit boards and selling them to one of the big board recyclers or smelters that were environmentally responsible at the time.

"The problem was the excess electronics other than circuit boards that were filling warehouses and creating liability, with no value and no option to recycle. I had the same problem when I formed RCI. I decided that I needed to figure out some type of reuse and recycling concept."

STARTING OUT IN A NEW MARKET

One of the moves that made Chapman an innovator was his decision to locate his company's 153,000-square-foot facility near well-established residential neighborhoods and to have a 5,000-square-foot retail store to sell refurbished equipment to the public. Chapman's company offered free recycling for RCI's home city of Carrollton, Texas. He charged neighboring cities, and other clients, to recycle their e-scrap including copiers, servers, printers, TVs, networking equipment, phones, as well as computing equipment.

"At one point we were the 'ink cartridge recycling returns center' for Dell and we recycled 10,000 printer cartridges a day. RCI even provided cell phone repair and refurbishment for Motorola, Nokia and Sony Ericsson."

Chapman's clients rarely had cohesive information about their inventories and didn't think they needed it. The emphasis was on finding someone to remove the outmoded electronics. Few questions were asked about where the equipment went. Data security was rarely discussed.

"I spent a great deal of my time getting large corporations to understand why they should care and what the opportunities and risks were in both data security and environmental disposal," Chapman says. "It is hard to believe now, but growing the company was a challenge at first because neither the demand nor the capital was there and the revenue streams were limited. The whole environmental recycling concept just hadn't caught on yet."

Reggie Chesson, a former RCI executive and current commercial vice president at Sims Recycling Solutions, identified one of RCI's early successes under Chapman as a Dell laptop refurbishing program in the late 90s and early 2000s. "We had a slogan that, 'Three broken come in and two refurbished go out,'" says Chesson. "The remaining PC was recycled, and we could sell the refurbished units ourselves, or on eBay. We received a percentage of the sales revenues. Any remaining parts harvested were sold or recycled. It was an excellent business model."

Chapman was out in front, Chesson remembers. "It was a decade after RCI's deal with Dell when TechTurn became the first Microsoft authorized refurbisher (MAR) in 2008. As a MAR, they were allowed to install operating systems on refurbished Microsoft systems and receive a higher resale value."

From refurbishment to recycling

At the same time that Chapman was focused on refurbishing and resale, he was also deeply involved in the critically needed, but untested, area of electronics recycling.

"In 1987, I started trying to come up with ways to separate and recycle base materials," he says. "A couple of years into the project, I was using shredders and separation tables and hired an engineer to help me design a complete system for automatic separation. Ultimately, I had seven patents for technology innovations in the safe destruction and recovery of materials from electronics recycling. I also had a patent for the automatic process of removing surface mount component devices from circuit boards."

In these early days, Chapman and RCI was one of the few recycling companies developing ways to use the by-products from electronics base materials without resorting to landfill disposal.

"I had chemist Al Smith on board," Chapman explained. "We participated in joint projects with national laboratories through the U.S. Department of Energy to develop long-term solutions in technology recycling. We developed ways to use the by-products in plastic, concrete and multiple other items. We also worked with several universities on electronic recycling and de-manufacturing techniques. We even used by-products to make recycled award plaques and trophies that were used by the EPA, the DOE, corporations and environmental groups."

Chapman maintains that, although better processing and more automated sorting and recycling options are available today, much of the equipment for processing end-of-life electronics remains the same. The biggest difference is that instead of low commodity market prices for extracted precious metals and high energy costs for running the equipment, the reverse is now true.

"To give you some idea of commodity pricing in 1992, gold was $350 an ounce. Today, it is $1,800. The recovery price of ferrous metals in 1992 was 2 cents a pound. Today, it is 18 cents a pound. The same price difference applies to the other metals recovered. These days, it pays for the recyclers to install multi-sorting systems to recover more of the pure metals stream. Back then, it didn't."

Chapman pointed out that 20 to 30 years ago, large organizations hesitated to pay a per-pound price for recycling because there was little understanding of the negative environmental impact hazardous e-waste represented when thrown in a landfill. This naiveté led to vendor horror stories like stacks of old equipment in large piles outside a disposal vendor's facilities or electronics dumped as is into landfills. In contrast, Chapman's company established best practices to recycle equipment through many of the same downstream relationships that information technology asset disposition (ITAD) and e-scrap vendors use today.

"The turning point for RCI happened when the environmental engineers from one of the largest oil companies conducted an audit, reviewing our environmental process and the flow of our by-products. The engineers recommended sending all of their electronics to RCI," Chapman recalls. "That was a boost to RCI's client list and general environmental awareness."

Environmental issues soon became a focal point and differentiator between competitors in the industry, with RCI an early signer of the original Basel Action Network (BAN) pledge of true stewardship. According to Chapman, most recyclers today are committed to practicing the highest standards of responsible recycling. Most adhere to Responsible Recycling (R2) or e-Stewards standards, and are ISO 9001, 14001 and OHSAS 18001 certified.

Not that long ago, inventory control by ITAD vendors was not mandatory for many clients. It was not unusual for the vendor to arrive at the client's offices, pick up equipment and then only inventory the equipment when it arrived at the ITAD vendor's organization.

"Ray was an innovator in this area as well," Sims' Chesson explains. "We had great software that was ahead of everyone else at the time. The inventory was completed and configurations tracked before, during and after the disposition process."

The software collected identifying information such as serial numbers, product description, functionality and asset tag numbers, regardless of the equipment's disposition path. This level of diligence is now standard practice for ITAD vendors.

Bringing data security to the forefront

As his business grew, Chapman collected more and more stories about organizations with data security practices that had more holes than structure, setting the scene for brand reputation issues, compliance disasters and environmental liability concerns.

One such example was a 1995 hospital contract, recalls Chapman.

"The original scope of work called for refurbishment and no data removal. Representatives of the client emphasized over and over again that they had wiped the equipment themselves. At the first incoming inspection, we found all of the equipment had data on it, some containing hospital patient records. We showed our client and immediately the project became much bigger. A long-term relationship was born."

Chesson points out that, "Data security

has certainly passed environmental concerns as a chief differentiator and services requirement in our industry. Chapman has made quite an impact by building strong, secure business practices and sharing his experiences. He set the bar high for the rest of us."

Moving forward

Chapman sold his company in 2004, but he remains involved as an industry observer. He recently shared his experiences at ACE 2011, a conference and exhibition held annually by the International Association of IT Asset Managers, Inc. (IAITAM) and where e-scrap was a major agenda issue this year. ITAD vendors were highly involved in the conference as exhibitors, attendees and presenters.

In 1998, the American Electronics Association (AEA) honored Texas' technology pioneers. Among them was the Nobel Prize winner in physics, Jack Kilby of Texas Instruments, honored for inventing the integrated circuit upon which all modern electronics are based. Also honored was Ray Chapman for his patents and groundbreaking technology that contributed to environmentally-safe e-scrap recycling, an ironic result of Kilby's invention of the integrated circuit. ESN

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