Achieving Environmental and TCO Goals with Greener Retail Solutions

POS Innovations Addressing Conservation, Reliability, Manageability and Serviceability

Executive Summary

Global warming and other environmental concerns are changing the way people live and do business. Consumers worldwide are increasingly showing their preference for companies who practice social and environmental responsibility. Seeing opportunities to differentiate themselves and build customer loyalty, retailers are implementing 'green' initiatives that improve brand image and lower IT spending.

IBM and Intel are working together to offer cost-effective green retail solutions designed to help retailers in a fiercely competitive industry meet their environmental goals. These solutions have eco-friendly features and support 'sustainability' through product longevity and material reuse programs. One example is the IBM SurePOS* 700 Series, a family of point-of-sale (POS) systems that reduces energy consumption by as much as 30 percent and carries service life cycles up to seven years. This collaboration is driving innovation and forward-looking planning, and resulting in more environmentally responsible retail solutions.

Still, retailers face a challenging marketplace, where margins are constantly under pressure. Fortunately, some of the latest technologies and ecologically-driven advances are enabling win-win strategies for both 'going green' and reducing total cost of ownership (TCO). This white paper reviews some of the latest POS solutions and features addressing conservation, reliability, manageability and serviceability. Green retail solutions are helping retailers protect the environment and save money by making their operations more efficient.

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Practicing Environmental Responsibility

Consumers are demanding more action from manufacturers and retailers to protect the environment. As customer loyalty is increasingly linked to companies practicing greater social responsibility, retailers understand how eco-friendly solutions can positively impact customer perception and satisfaction. In response, retailers are taking a closer look at greener solutions that are not only good for the environment, but also reduce TCO.

Furthering environmental responsibility, the IBM Retail Green Initiative develops conservation-oriented technology solutions that enable retailers to meet their ecological goals. "Our objective is to help retailers better position themselves with consumers, who increasingly value companies that are working to minimize their impact on the planet," says Steven Ladwig, general manager, IBM Retail Store Solutions.

IBM uses state-of-the-art design and manufacturing processes to extend the life of its retail products, enhancing sustainability and preserving retailers' IT infrastructure investments. IBM values vendors, like Intel, who are guided by an environmental philosophy that influences product design, manufacturing operations, technology development and public policies.

In many cases, green programs can also improve the company's bottom line. This can be seen in the retail industry where some of the latest POS innovations are reducing TCO as well as addressing environmental concerns.

Factors Affecting Retailer TCO

Retailers weigh a large number of considerations when selecting new POS systems. The initial POS capital spend is just one factor affecting the cost equation that spans the operational lifetime of equipment. In fact, the initial purchase price of a POS system represents just 20-45 percent of the overall total cost of owner-ship[1]. During a recent study, IDC's Global Retail Insights found that retailers organize their TCO thinking around four major factors that heavily influence indirect costs over the lifetime of POS equipment:

- Reliability and Usability
- Manageability
- Serviceability
- Environmental Focus

Considering factors such as these, many retailers are expanding their selection criteria and examining the environmental impact of their POS systems – or multiple systems – and how it can lower life cycle costs. IBM POS systems, for example, are lowering costs by becoming more energy efficient, in part due to the use of multi-core processors designed to improve processor performance while reducing average energy usage as much as 35-40 percent.

> "Retailers are proactively informing customers about their green efforts. Tesco, the world's third-biggest retailer, recently had a press release announcing plans to measure and publish its total direct carbon footprint as part of its commitment to tackle climate change."
>
> Alan Outlaw, Corporate Director of SMB, IBM Retail Store Solutions.

"A large retailer considering replacing 5,000 POS terminals with new units operating with 33 percent more energy efficiency can reduce direct annual energy costs for the terminals alone by $131,000, or nearly $1 million over the average seven year asset life of the POS terminal," says Scott Langdoc of IDC Global Retail Insights.

IBM SurePOS* 700 Family

New Eco-Friendly Point-of-Sale Systems

Retail IT professionals seeking to reduce TCO while helping the environment can meet these objectives with the IBM SurePOS* 700 Series. It combines new proactive systems-monitoring features and the high-performance Intel® Core™2 Duo processor, allowing large retailers to avoid costly, unexpected downtime and reduce system energy consumption by as much as 30 percent. The new SurePOS 700 delivers the latest POS technologies, combined with a growing focus on low power consumption and other eco-friendly features that meet both business and country requirements.

The SurePOS 700 series is a powerful standards-based platform with built-in manageability and service features for increasing availability and reducing the associated hassles and costs of technical support. Retailers can realize maximum system availability and lower IT costs using the IBM Director,* an integrated, easy-to-use suite of tools offering flexible systems management capabilities. These unique features are available to reduce POS infrastructure complexity and TCO, while providing a scalable design that helps retailers operate an efficient and resilient business as they grow.

IBM designed this system specifically for retail environments. Systems undergo advanced manufacturing tests including board flex testing, power cycling and pre-shipment integration. IBM's highly reliable design protects the system from damaging factors such as:

• Electrostatic shock
• Fluctuations in temperature and humidity
• Dust pollution
• Harmful vibrations

With the SurePOS 700 series, IBM delivers retail-hardened systems designed to extend product lifetime, which lowers retailers' TCO and increases the sustainability of the planet.

IBM Green Philosophy

"IBM has corporate policies of protecting the environment and conserving energy and natural resources dating back to the early 1970s," says Steven Ladwig, general manager IBM Retail Store Solutions. Furthering its environmental commitment, IBM plans to invest over $1 billion per year over the next decade in green technologies and services aimed at the data center. This program includes the Retail Green Initiative, which is focused on educating its retail clients on the environmentally responsible options available to them. Among other areas, the initiative offers education on the value of sustainable shipment packaging and the use of recycled materials.

This program is expected to enhance retailers' image with consumers who value environmentally responsible brands. "IBM technologies and services not only help retailers appeal to consumer requirements, but also help protect the environment and save money by making their operations more efficient," says Steve Ladwig.

IBM employs innovative design and manufacturing techniques, including the use of recycled plastics, to produce conservation-oriented solutions so retailers can meet their ecological goals. Approximately 80 percent of products and features shipped by the IBM Retail Store Solutions (RSS) in 2006 contained some amount of recycled plastic. IBM RSS products also contain no paints in their material finishes, instead using powder coating for metal and impregnated color for plastic to reduce harmful emissions that may occur in the painting processes.

IBM continues to invest in manufacturing and design processes that give the retail industry the tools they need to implement their own environmental policies and make it easier for them to identify and select the most environmentally friendly retail solutions available.

Learn more about IBM's corporate responsibility initiatives and commitment to our environment at **www.ibm.com/ibm/responsibility** and **www.ibm.com/ibm/environment**.

Why IBM Selected the Intel® Core™2 Duo Processor

The SurePOS 700 is specifically designed for performance, efficiency and value. IBM chose the high-performance Intel Core 2 Duo processor because it excelled in all these areas, while enabling faster checkouts and higher clerk productivity. The processor has both higher performance and greater energy efficiency than predecessor single-core processors. The Intel Core 2 Duo processor also supports many TCO lowering features, which brings greater value to the system.

Energy-efficient POS systems provide a number of benefits such as improving reliability, accommodating hotter environments and lowering cost. Since Intel Core 2 Duo processors dissipate less power while still delivering exceptional performance, they enable POS systems to run cooler and more reliably. "Intel processors produce less heat, so it's easier to design systems that can operate in a hot environment, like when cash registers are rolled outside for sidewalk sales," says Dave Landers, system unit development manager for IBM Retail Store Solutions.

By producing less heat, Intel® multi-core processors do not require exotic thermal solutions and operate with fewer fans, which improves reliability, saves space and decreases system cost. "Standard PCs typically use front-to-back cooling, but POS systems often have a lot of I/O devices (e.g., scanners, printers and monitors) in the back that inhibit airflow. Low power Intel processors allow us to use less airflow and cool from side-to-side," says David Steiner, IT specialist and subject matter expert at IBM Global Services.

Intel platforms are also standards-based, integrating the latest technologies and maintaining compatibility with legacy hardware and software. These platforms support customers who are still running older software, like DOS for graphical user interface. They also satisfy customers' needs for security and virus detection and allow IBM to take the best of PC technology and apply their retail market segment knowledge to meet special requirements.

Ensuring systems meet sustainability goals, IBM provides feedback to the Intel embedded processor division to identify which processors should be included on the long life support roadmap. Intel processors are a key component in POS systems for achieving TCO and green retail solutions. Intel multi-core processors are helping SurePOS 700 systems meet TCO and green goals by providing greater performance, energy-efficiency and operational value.

Intel Green Philosophy

Intel Corporation has a long history of commitment to the environment, starting with its founder, Gordon Moore. At Intel, the support for renewable energy is a top priority, and it is proud to be part of the U.S. Environmental Protection Agency's (EPA) Green Power Partner program. The company purchased renewable energy certificates amounting to 1.3 billion kilowatt hours of energy a year; the EPA estimates this has the equivalent effect of eliminating carbon dioxide (CO_2) emissions for more than 185,000 automobiles or the electricity needed to power more than 130,000 average American homes annually.

Intel also practices environmentally responsible product design and manufacturing. As part of their broad environmental commitment, Intel is removing lead and halogen from all its products by engineering innovative replacement materials while preserving product integrity. Regulatory compliance is a cornerstone of Intel's business; as part of reducing their environmental footprint, they work with suppliers, customers and industry groups to create products and materials that meet the European Union's Restriction of Hazardous Substances Directive.

Intel is building more energy-efficient manufacturing sites including the new Intel Design Center currently under construction in Haifa, Israel. The site was designed to achieve silver certification from the Leadership in Energy and Environmental Design (LEED) system, which was developed by the U.S. Green Building Council. The design center features sophisticated temperature controls, an irrigation system that will use only recycled water and ultra-efficient air conditioning and electrical systems that save and recycle energy.

With consistent environmental commitment, Intel is driving eco-smart product design and partnering with other companies to make a difference.

To learn more about Intel's corporate environment programs, please visit **www.intel.com/intel/environment**.

Benefits of Intel Multi-Core Platforms in POS Applications

The latest multi-core processors from Intel deliver more performance, standards-based support and software backwards compatibility. Here are some Intel® architecture features that enhance POS responsiveness, investment protection and product longevity:

- **More processor cores in the system**
  - Runs checkout, security and financial applications on separate cores to increase responsiveness

- **Standards-based support**
  - Allows retailers to adopt the latest technology, as well as protects their investment in legacy hardware and software components

- **Software backwards compatibility**
  - Enables newer POS systems to run older programs (e.g., DOS-based user interfaces)

- **Revolutionary performance-per-watt**
  - Simplifies the design-in of high-performance processors in space-constrained POS systems

- **Intel® SpeedStep® Technology**
  - Saves power by putting the processor into a lower power mode when computing demand is low

- **Embedded life cycle support (with a minimum availability of seven years)**
  - Protects product development and platform certification investments

In addition to these architecture advantages, equipment makers typically find maintaining software code for general purpose processors, like the Intel® Core™2 Duo processor, is easier than for application-specific hardware. This is because Intel® processors are supported by a broad ecosystem offering a wide range of mature development tools.
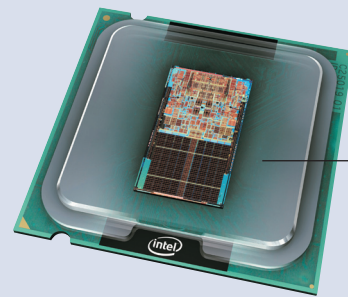
- 2 CPU Cores
- 4 MB L2 Cache
- 65 watts
- Embedded Life Cycle Support

Intel® Core™2 Duo Processor E4300

Practicing Social Responsibility

Retailers can protect the environment, conserve energy and reduce TCO at the same time. By deploying green retail solutions, they benefit from the latest technology and proactively practice social responsibility at the same time. The SurePOS 700 Series is just one example of IBM and Intel working together to offer green retail solutions that help address the environmental concerns of their customers and their customers' customers.

"Because retailers have interactions with nearly every consumer worldwide, they are in a unique position to have a profound impact on environmental awareness." says Joe Jensen, general manager of Marketing and Platform Programs at Intel Communications Infrastructure Group

For more information about the IBM SurePOS 700 Series, please visit **www-03.ibm.com/products/retail/products/pos/700/specs.html**.

For more information about Intel embedded processors, please visit **http://www.intel.com/products/embedded**.