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Fact Sheet

Intel® Delivers IoT-Ready Computing Technology to Vending Industry

The vending industry today is undergoing a digital makeover as machines become internet connected to engage and attract more patrons. Taking it a step further by adding intelligence to machines can make the vending experience more personal, interactive and fun for consumers while allowing brands and operators to utilize new business opportunities, cloud services and data analytics.

To help enable intelligent vending solutions, Intel developed the Intel® Reference Design for Intelligent Vending. The reference design provides a scalable and flexible solution for re-architecting traditional vending machines into highly-capable, internet-connected machines that can offer engaging consumer experiences, drive business transformation, support new transaction models and reduce operating costs.

Engaging Consumer Experiences

- Interactive touch screens, HD video and multimedia displays invite customers to easily browse products, view details, and make informed selections.
- With gesture recognition, machines can engage patrons with captivating games and contests, or allow product selection by “pointing” a finger at the display.
- Social media integration enables product manufacturers to expand their customer reach, increase interaction, and drive brand loyalty.

Driving Business Transformation

- Intelligent vending machines can make it easier to implement new business strategies and gather business intelligence.
- Connected machines can give manufacturers and operators more insight into the drivers of sales and customer satisfaction by tracking both what was purchased and what was examined but not selected.
- Intelligent machines can detect and deliver marketing content specifically to individual patrons with directed advertisements based on demographics.

Supporting New Transaction Models

- The vending industry need no longer rely on patrons to have cash in their pockets.
- Intelligent vending machines deliver more payment options, like credit and debit cards, QR codes, smartphones using near field communications, and other contactless payment methods.

Reducing Operating Costs

- Diagnose and repair systems remotely to reduce machine downtime and service costs.
- To keep business running smoothly, machines can stay in contact with operators via the cloud by sending real-time notifications that report any technical or supply problems with text or online messages.
- Automate and streamline business by tying machines to corporate systems, such as Enterprise Resource Planning (ERP) and central pricing.

Intel® Reference Design for Intelligent Vending

The vast majority of today's machines are designed with a vending machine controller (VMC) that manages many basic and independent subsystems, such as payment, refrigeration and lighting control, coin and product handling. Since the VMC is usually based on a low-end microcontroller, it lacks the computing power, connectivity, security, manageability, and ease of reprogramming needed to support advanced services.

To simplify the task of upgrading the computing power of vending systems, Intel developed the Intel® Reference Design for Intelligent Vending. The Intel Reference Design for Intelligent Vending provides a fast and easy recipe for re-architecting traditional vending machines into highly-capable, internet-connected machines. The reference design contains the hardware and software components vending machine manufacturers need to architect future machines or to retrofit existing ones. As a result, manufacturers are able to reduce time to market, simplify design and ensure the latest computing technologies are used effectively.

- **Computing System:** An Intel® processor-based platform replaces traditional vending machine controllers (VMC) to provide machines with wired Ethernet or broadband wireless connectivity to the outside world and the computing power needed to deploy emerging services. Vending machine manufacturers can choose from Intel® Core™ vPro™ processors and Intel® Atom™ processors, which can run the same code (i.e., backward compatible) and are supported by a very large, established ecosystem of independent software vendors (ISVs).
- **I/O Interface Model:** Today's vending machines use a wide range of bus protocols to communicate between the VMC and machine peripherals, such as product handling and lighting control. The Intel reference design contains a vending machine I/O (VMI) board that supports these I/O interfaces and more. Vending equipment manufacturers can incorporate the module design by purchasing a VMI from a board vendor, such as Advantech*, or by requesting a board vendor to build a customized version of the module.
- **Software Stack:** The Intel Reference Design for Intelligent Vending software stack includes an operating system, programming interfaces (APIs) to machine peripherals, and various applications. The Intel reference design provides, free of charge, more than a dozen APIs that can be used by application software to more easily access typical machine peripherals, such as a coin dispenser or refrigeration unit.

Advantech*, Canteloupe*, Ingenico*, Promate*, and SAP* are among the companies in Intel's rich partner ecosystem who currently have products based on the Intel® Reference Design for Intelligent Vending.

Developers can access more details on Intel Reference Design for Intelligent Vending at <http://www.intel.com/vending>

Deployment-ready, I/O interface modules are also available from members of the [Intel® Internet of Things Solutions Alliance](#).

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