

MyAdvantech

The Magazine for Global Advantechers and Partners

Spring 2010 No.6

Enhancing the Effectiveness of Network Deployment



Self-service Machines Make Life More Convenient
Advantech's Intelligent Office Environment



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Address
No.1, Alley 20, Lane 26, Rueiguang Road,
Neihu District, Taipei, Taiwan 114
Tel +886-2-2792-7818
Website www.advantech.com

Editorial Supervisor
Corporate Marketing

Editorial Committee

Meg Chen
Jie Tang
Jean Chu
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Ceres Wang
Tammy Chiu
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Miles Odonnell
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James Kiley
Tiffany Chou
Claire Cheng
Tiffany Fan
Alex Chung

Art Director
Jie Tang

Editorial CONDÉ NAST
INTERCULTURE GROUP –
Interculture Custom Media
Director Sophia Liao
Address 15F, No.51, Sec.2, Jilung Road,
Taipei, Taiwan 110
Tel +886-2-2732-8899
Managing Editor Peggy Lai
Art Editor Jane Yang

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The Changing World Inspires a Smarter Lifestyle

Sweeping technological developments are giving rise to a more intelligence-driven lifestyle for many people around the world. This in turn advances greater application opportunities for a growing number of emerging industries—opportunities which spell an even more promising future for IBM.

For years IBM devoted tremendous resources into IT and hardware products, but over the past decade it has successfully reinvented itself by branching into business and enterprise services, while continuously looking to increase its revenue share in the area of information services. This development process has reshaped IBM's corporate architecture and modified its business philosophy. In addition to ensuring its corporate development and steady revenue growth, IBM—a company once touted as a trailblazer in the high-tech industry—hopes to do more to sustain the earth's eco-future by taking on more Corporate Social Responsibility (CSR) missions. These new directions inspired IBM's "Smarter Planet" strategy.

The Smarter Planet concept represents an umbrella of ideas and courses of action, and in terms of execution, IBM chose to conduct a sweeping promotional campaign by tapping into its leading status in the market. At the same time, through the implementation of its Smarter Cities campaign, it hopes to provide a convenience-centered lifestyle and work environment, a new corporate operating practice, and high-performing services by integrating innovation, technology and green living ideas, so that the Smarter Planet idea can be realized day in, day out for everyone.

IBM has enjoyed solid partnerships in telecommunications, financial, high-tech and manufacturing, with many global companies

and conglomerates. By putting the Smarter Cities ideas into effect, IBM hopes to employ its existing IT strengths to integrate technology with people's everyday lives; enabling smarter utility services, infrastructures, medical systems, food management, water resources etc, to enhance our lifestyles and protect the environment. IBM also aims to take greater responsibility to address important global issues, such as alternative energy resource development and climate change.

Advantech is IBM's long-standing partner, and takes a significant role in the implementation of Smarter Cities. IBM understands that its value lies in the effective application and analysis of intelligence engineering; while, Advantech plays a role in applying and integrating those ideas into our everyday lives. Advantech shares similar experiences with IBM in terms of their corporate reinvention process. Advantech is currently undergoing a "Globally Integrated Enterprise" transformation, and it hopes to make its value exceptional by means of service upgrades. As well as growing a successful enterprise, Advantech hopes to create a smarter living environment for all by empowering and enabling more of the applications that create the Smarter Cities.

"Dedication to each client's success tops the list of IBM's values. IBM has been a steadfast partner in Advantech's development history and corporate transformation. Likewise, I believe that because our two companies embrace similar business philosophies in advancing smarter industries and market development, IBM and Advantech will have many future opportunities to inspire each other and create even greater successes," said Edison Chen, Business Solution and Asset Leader at IBM.

Edison Chen, Ph.D.
IBM GBS GCG,
Business Solution and Asset Leader

Building Mutual Trust and Success Together

An Interview with Harald Verloop, Division Manager of Alpatron Medical Systems

With the medical market rapidly developing, there is more and more competition in this area, and this means distributors and suppliers need to respond quickly to the customer. Based on a good working relationship, Alpatron Medical Systems with Advantech not only provide a full range of medical products, but also comprehensive support teams that can meet end user needs.

Script by Sharlene Yu
Photos by Advantech
Interview with Harald Verloop, Division Manager of Alpatron Medical Systems



Through the implementation of technology, health care organizations are able to automate many day-to-day hospital processes, increase efficiency, reduce costs, improve the quality of care, and increase patient satisfaction. As a distributor of medical equipment, Alpatron Medical Systems provides Web-based solutions to display, print, store and distribute images, sound and other medical data for hospitals, diagnostic centers, private clinics and healthcare groups. “Today, we are the leading medical solutions provider in the Netherlands and have the biggest market share in the medical market,” said Harald Verloop, Division Manager of Alpatron Medical Systems.

Plentiful Products to Meet the Customers’ Needs

Alpatron Medical Systems focus on safety, reliability, and integrated medical solutions. They design advanced configurations to meet specific needs as well as specializing in patient infotainment, bedside TV and telephones, trolley/mounting systems, and medical monitors and peripherals. In early 2002, Alpatron Medical Systems were looking for a partner who could cooperate with them to provide a multi-purpose camera system for ENT (ear, nose, throats) systems. “It was our first contact with Advantech and we found that the features in Advantech’s products fitted our customers’ needs perfectly. With the medical market growing, collaboration with Advantech has expanded with medical computers, clinical and medical IT workstations, and many other types of medical equipment,” said Mr. Verloop. Advantech has a full roster of medical products to fit all requirements, R&D teams dedicated to medical technology research and implementation, and extensive customization capabilities.

Unique Demands Need Exclusive Products

The most important thing to understand in the medical market is that health care organizations have their own unique requirements for electronic products in terms of sealed units, thermal and acoustic properties, electromagnetic interference control, longevity, certification, and adherence to strict rules and regulations. Harald Verloop emphasized that other industries may choose standard computer or electronic products to fit their needs but there are no standard products in the medical

industry. “Each hospital or health care organization has their own needs. General purpose computers cannot adapt to particular demands for flexible options, different sized displays, products with no cabling, compact devices, and long life times and safety certifications.” Mr. Verloop said.

For many years, Advantech has provided a wide range of certified computing systems and services to the world’s largest medical technology providers that ensured the quality of design and manufacturing of medical devices. In one such case, Advantech’s products satisfied critical patient care needs for Medisch Spectrum Twente hospital, which is the largest non-academic hospital in the Netherlands. Advantech products offered Alpatron Medical Systems the ability to help the hospital to process automation and real-time data solutions, providing special large size displays with sealed enclosures that are resistant to dust, spills, water damage.

Excellent Support, the Best Partner

“Advantech is a trusted partner.” said Mr. Verloop. He explained that with the medical market developing, there is more and more competition. “You need to quickly respond to the client, and sometimes issues need to be resolved in a very short time. Advantech not only has short delivery times, but can also respond quickly to our special requirements. With regard to fast turnaround projects, you have to complete everything according to the customer’s demands, and then answer to the client all within two days—otherwise they may cancel the deal. Comprehensive support is required for good working relationships and Advantech’s global sales and service organization guarantees rapid time-to-market and dedicated local support.

Last year, Alpatron Medical Systems won Advantech’s best partner of the year in the medical market; the second time they have won this award. As technology continues to advance and change so fast, Mr Verloop stressed that cooperation with Advantech not only provides new products with new features, but also shared knowledge that is invaluable so they can keep ahead of the market. “Since health care organizations will become totally digitized, the relationship between Alpatron Medical Systems and Advantech will grow over the time. We are evolving quickly, deploying the latest technological innovations, and offering ever more advanced services to our customers.” said Mr. Verloop. ■

Corporate Overview

Alpatron Medical Systems based in the Netherlands, is a distributor of medical equipment to display, print, store and distribute images, sound and other medical data. As a key strategic partner for hospitals and health care organizations, Alpatron Medical Systems works closely with highly reputable companies to provide a comprehensive range of medical products, such as: PACS, monitors, computers, peripherals, trolleys, assembly systems, and patient infotainment.





Self-service Machines Make Life More Convenient

Script by Anita
Photos by TPG and Advantech
Interview with Kurt Chen,
Product Planning Engineer of Advantech
Industrial Automation Group, and
Jonney Chang, Product Manager of
Advantech Industrial Automation Group

Automation technologies are providing the basis for a variety of convenient services, and even some of the most routine activities, such as borrowing books, renting movies or shopping in the supermarket have become automated experiences. Consumer-oriented businesses worldwide are adopting automation systems to build self-service kiosks that enable added convenience for all customers.

Supermarket shopping can be a leisurely experience, right up until checkout. Often there are never enough checkout stations open, and customers with overloaded carts have to fight over spaces in line. Recently, many supermarkets have added self-checkout kiosks that do not need to be manned by employees, meaning that each customer will have easy access to a checkout station if they are willing to take the time to scan their own goods. They can simply use a hand-held scanner to check their items, confirm the amount and billing methods through a convenient touchscreen and be on their way.

Intelligent Self-Service Checkout

With the evolution of technology, automated systems are gaining popularity for a variety of services. South Korea's National Central Library uses Advantech's technology in their Self-Service Book Borrowing and Returning System to manage their collection and provide added convenience to the public. Each system adopts a Windows XP Embedded OS with five USB-4751 modules and a USB-4622. Furthermore, the remote maintenance software, DiagAnywhere, can provide auto diagnosis in order to help control centers fully manage the terminals scattered around the city. The software can monitor up to 16 terminals at the same time which helps eliminate on-site operation and maintenance.

Kurt Chen, Product Planning Engineer of Advantech's Industrial Automation Group, pointed out that the USB-4700 series provide fast transmissions without the need for an external power supply. These modules integrate pluggable terminal blocks to save costs and space requirements for control systems.

The self-service system has changed the library borrowing model. Readers no longer need to go to the

library and search through rows and rows for a specific book. Through an online bibliography, they can now easily reserve a book, pick it up from an assigned location, and then simply return it to any applicable self-service machine. Libraries can also enhance and improve their lending services by analyzing readers' behavior and borrowing practices. This allows them to cooperate with specific publishers based on borrowing trends to anticipate what types of books are becoming popular.

Similarly, there are an increasing number of stores looking to implement self-checkout systems to enhance customer experience and decrease long waits at checkout. Supermarkets in Europe have adopted Advantech's TPC-66T Touch Panel Computer, which provides a reliable and convenient touchscreen-based HMI for their systems. Jonney Chang, Product Manager of Advantech Industrial Automation Group, said that the design of TPC-66T is quite flexible. Featuring built in USB and COM ports, they can connect to a variety of devices in the store, such as barcode scanners.

Most stores find the best solution is to provide a combination of both self-checkout machines and traditional cashiers. Inventory can still be easily managed because both the cash registers and the self-checkout systems can link to the same database through the store's wireless network. All information can be integrated on the back-end server, helping maintain stock and providing useful data to analyze shopping patterns and buying behavior.

Self-service borrowing machines and self-checkout systems not only enable businesses to reduce costs and streamline workflow, but they also provide excellent convenience for their customers. ■



Advantech's headquarters in Taipei, Taiwan seems just like any other office from the outside, but in fact it is one of a new breed of intelligent buildings. The building offers improved security, energy-efficiency, and comfort to staff through advanced building automation technology. The system is integrated with a variety of automated features with easy monitoring allowing on-site employees to manage the system in real-time.

Web-based building applications have been changing business operations in many ways, allowing engineers to control systems via Internet and monitor all kinds of facilities, such as lighting, heating, air conditioning, and fire alarm systems. Through an integrated control platform, security guards no longer need to leave their stations to turn off lights or deal with accidental alarms. Now they can monitor and manage many remote applications through their console.

Advantech was keen to build an intelligent office to highlight the next generation of building automation technology. The central control platform is connected to a variety of devices inside the building in order to provide comprehensive control. These facilities include access control, parking management, central monitoring, closed-circuit television (CCTV), lighting control, air conditioning, fire alarm, and the other electrical and mechanical equipment such as ventilation and elevators.

For example, the operating platform of the central control room can monitor the status of the air supply equipment on each floor and in each office block. Moreover, the system also allows remote setup of indoor temperatures, so that staff can always experience a comfortable office environment.

The most prominent feature of central control system is the way it adopts an open network architecture. Alex Hsiao, of Advantech's Industrial Automation Group said that the operating platforms in the security and the central control rooms can observe the status of each device in real-time. The system is able to offer a safe and comfortable working environment with excellent energy-saving capabilities.

Advantech's Intelligent Office Environment

Script by Leo
Photos by Advantech and Condé Nast Interculture Group
Interview with Alex Hsiao, Director of Advantech Industrial Automation



BA timing control increases security and energy saving

Monitoring the operating status of equipment is one of the base functions of this building automation system. In any building, the most significant energy consuming devices are the lighting and heating/air conditioning. Through the use of timing control, engineers and employees can optimize the usage of these devices to significantly save energy and costs.

In Advantech's central control system, the lighting equipment not only can be automatically turned on/off by schedule, but also linked with security mechanisms. Alex noted that Advantech sets the alert period in the evening at 8:00pm to until 7:00am the next day; in that period, if anyone wants to turn on the air conditioning and lighting equipment the system will automatically inform the guards through an alert.

In addition to lighting and air conditioning, timing control is also used in access control which targets the entrances and security doors on each floor. Combined with infrared sensors, this design achieves a complete security solution. In the alert period, if the infrared sensors detect that the entrances or security doors are turned on, the system will immediately sound an alarm. In the meantime, the security guard can watch these doors in real-time on the screen via CCTV surveillance to confirm whether there is an intruder or not.

In order to ensure the mechanical and electrical equipment can operate in the best condition, maintenance tips are included in the central control system, which can send specially timed notices and maintenance reminders based on operation hours to guarantee those devices are always working optimally. Without system assistance, the mechanics only have rough estimates of device status based on warranty information or paper records, which can very easily be neglected or omitted.

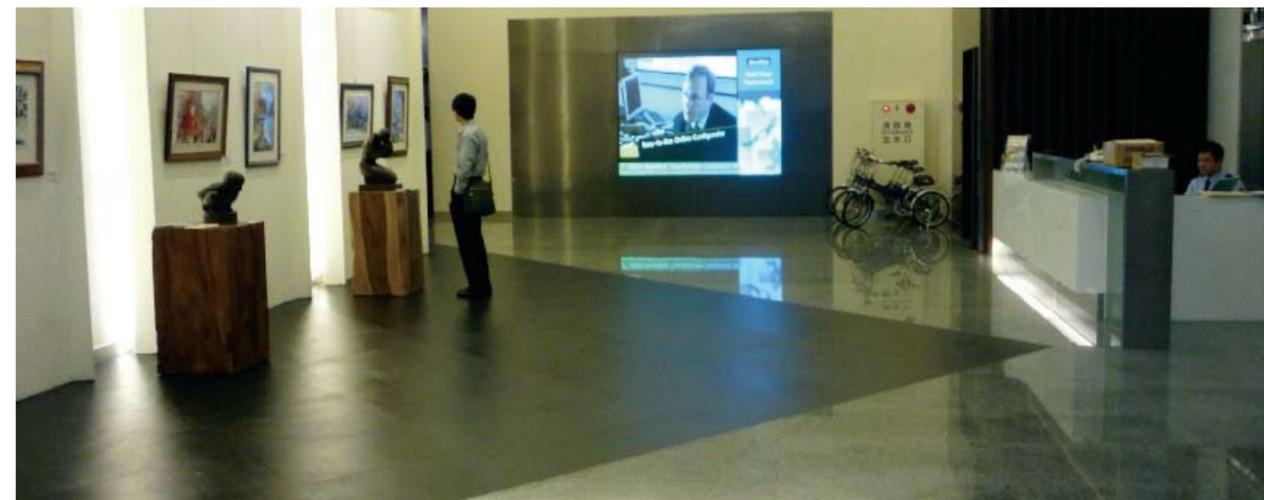
BA solutions offer both flexibility and adaptability

Alex said that the most difficult part of developing an intelligent building is system integration, simply due to the number of various devices from a multitude of manufacturers with different interfaces and drivers. How can a system link these interfaces? How can the information be seamlessly transferred? It's clearly a big challenge. In order to make this process easier, Advantech developed the BAS-3000 series, which includes Direct Digital Controllers (DDC) and WebAccess control software. Adopting an open network architecture significantly helps complete the solution and suit the needs of connecting to a variety of interfaces.

Alex pointed that Advantech's DDC controller is designed for Building Automation control applications. In addition to providing network connections, the system combines Auto Tune PID logic control and supplies offline simulations with online debugging, reducing onsite testing and simplifying integration.

WebAccess software is a highly integrated and expandable platform that can not only integrate information from equipment, but also provides other systems with data. Due to the open database architecture, WebAccess supports SQL queries and ODBC open link interfaces. Users can design their own report formats or combine the monitoring information from different applications, so that the Building Automation system can be closer to customers' demands.

Advantech's Building Automation solutions are already very energy-efficient systems, but as Advantech continues to be actively engaged in energy management and control research and development, many new features and technology are being integrated every day. In the future, Advantech has plans to introduce smart meters and other new technologies to provide more detailed energy reports, analysis, and advanced automated capabilities for engineers. ■



Ubiquitous Smart Living



Trusted ePlatform Services



Living with a Sense of Comfort and Convenience at Home, the Office, or a Hotel

- Advantech residential terminals can automate scenario lighting and environmental controls such as audio/video equipment, projections, curtains, lighting scenes, and HVAC.
- Home or hotel owners can access their central control terminal remotely over the internet to communicate directly, either via PC or via mobile phone.
- Control intruder security systems by replaying video from outside cameras to fixed access control points.



- UBIQ-231**
- 21.5" Full size Touchscreen
 - Infrared Control
 - Colorful Displays by combination



- UBIQ-360**
- 21" (16:9) Full size and Portable Touchscreen
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 - Flexible Control Mode
 - Smart Learning mode
 - 7" glass/7.4" touch by project



- UBIQ-480**
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 - Infrared Control
 - Infrared Control
 - RF
 - Customizable with Colorful Displays
 - 7" glass/7.4" touch by project



- UBIQ-481**
- 10.1" (16:9) Full size Touchscreen
 - Infrared Control
 - Infrared Control
 - Support RFID
 - Customizable with Colorful Displays
 - 7" glass/7.4" touch by project

Advantech Headquarters
 No.1, Alley 20, Lane 28, Xueguang Road,
 Neihu District, Taipei, Taiwan 11491, R.O.C.
 Tel: 886-2-2782-7011
 Email: sales@advantech.com.tw





Purchase Rates Increase with The Touch of a Finger Interactive Digital Signage Injects New Energy into Retail

Script by Anita
Photos by Advantech
Interview with Henry Xie, Nike channel marketing manager and Wang Kaiping, TK3C's Circulation Division Manager

What is the best way to stop customers in their tracks? Is it a dazzling sign, glamorous decorations, or an elaborate display? Or is it something even more attractive and eye catching, something that empowers customers to access product information and promotions with the touch of a finger? This summer, Nike, the leading sporting goods superstore and TK3C, a powerful retailer in electronics, have chosen interactive Digital Signage Stations (DSS) from Advantech's Intelligent Services division (AiS) as the key focus for their marketing strategies. Both retailers hope to lead a breakthrough in applications for digital signage. With AiS DSS, retailers can expect to reach their customers in newer more creative ways.

During the World Games in Kaohsiung, a high-school student met up with some friends in the Hanshin Arena and began a five-on-five street basketball challenge sponsored by Nike. After the match, they visited the Nike booth and wandered into the store to check out the latest Nike trainers. One of the students approached a digital signage touchscreen running the latest basketball shoe advert—a pro basketball player, shown wearing the coolest new shoes, leaps into the air as if flying, followed by a cutaway introducing the shoe's product information. The student was impressed by the direct impact of the advert and immediately wanted a pair of his own. This is typical of the experiences that retail designers, Nike and TK3C are trying to create.

In another example, in Taipei, at TK3C's flagship store, the retailer was hosting a lively, members-only reception to launch a variety of bargain-priced products to consumers. A couple who were out window shopping casually walked into the store. Overwhelmed by information from ads, posters and flyers they were confused. But in the lobby of the shop, a digital signage station was dynamically playing the day's special offers. Curiously, they touched the screen and began browsing through the special products section. They came across a special promotion for a product they had been considering for some time, and after a short discussion decided to buy the product. Both these examples demonstrate the power of interactive digital signage stations and their ability to enhance the retail experience for customers.

Creating Interactive Conversations Between Customers and Brands

Nike's branding strategy is famous for its innovative and eye-catching marketing approach. Customers have come to expect imaginative displays and exciting multi-media presentations at Nike shops. However, there is some concern that these one-way, push marketing tools do not sit easily with customers. Nike channel marketing manager Henry Xie noted, "It's important that customers identify Nike as a young and dynamic brand, and interaction is one the most effective ways. We try to integrate various technologies and Advantech's interactive digital signage stations are a superb highly visible marketing tool for our retail stores."

Nike was ready and willing to explore the DSS possibilities at

the World Games in Kaohsiung in July. In the Hanshin Arena they organized a street marketing event titled "Nike Basketball Hall Challenge", and built a temporary store in the square where they placed the digital signage equipment. After careful assessment, Nike planned two types of content: advertising for their new basketball shoes, and T-shirts designed especially for the global event. The purpose of the campaign was to provide simple interaction where the public could not only gain an understanding of the Nike brand image, but also be immersed in the spirit of the games. Henry Xie said, "The product design process and concept is no simple task to clearly communicate, but the vivid audio-visual presentation will allow consumers not only to enjoy listening to the story, but also to gain a fuller understanding of the product."

For about half a month starting in mid-July, a DSS system was installed temporarily in the shop in Kaohsiung; in addition to attracting a lot of attention in stores, the DSS system led to increased revenues from successful sales of basketball shoes and T-shirts. Henry Xie said, "Although Nike added a new shop in the same area as an existing Nike branch, revenue in both shops saw great growth at the same time. Not only did it bring revenue to Nike, but it also created a dialog between us and the customer. We can say this market campaign was a great success."

Henry Xie believes that Advantech DSS have an intuitive user interface. It's simple, it's easy to use, and not having to learn how to use the digital signage makes customers willing to try it. For Nike, replacing stored content for a product is as simple as updating the website content. By not having to go through a complex process of program changes, the interactive digital signage system operates with an emphasis on efficiency—a key marketing principle.

Browsing the Latest Special Promotions with Digital Signage

Meanwhile in Taipei, at TK3C's flagship store, digital signage has been adopted as the tool of choice to deliver live product promotions and special offers. With over 3000 electronics items to manage, and changes in item preference and status dictated by fierce market forces, TK3C is able to update the latest information with a simple mouse click—and they often do so several times a day. As a result, they've designed promotional content for their special events which attract as many members as possible, while



helping them understand the nature of the products. “The Advantech Digital Signage Station uses a large panel touchscreen which is similar to the popular Apple iPhone, and we think consumers will want to engage with it,” said TK3C’s Circulation Division Manager, Wang Kaiping. “This leads to consumer curiosity, which is the first element of successful marketing,” he added.

The second element of successful marketing is simplicity. As the store’s customer base is very broad, interactive digital signage must be simple and not require staff assistance. To this end, TK3C specifically designed a menu button on the bottom of the screen. “This way, even a tall machine is still easily operable by a small child,” said Wang.

Since TK3C provides a wide range of products, it is essential to give customers enough time and space to choose goods. For this purpose TK3C deployed an interactive e-check machine designed to give customers more autonomy in spending. The digital signage system’s real-time update mechanism is able to quickly display the latest sell price to customers, resulting in higher purchase rates. “Since July, after only two months in the store, customers have taken the initiative, resulting in high rates of usage for the digital signage system. With this information, more TK3C stores are considering installing this equipment in the future, and they are also actively thinking about the possibility of other applications,” said Wang.

Faced with a diverse customer base, web shoppers, and competition from various types of stores, it is often difficult to understand consumer preferences. There is thus considerable interest in using a “fresh” channel to deliver marketing messages to shoppers when they are in the store—messages that can bolster the store’s image, and increase the customer’s desire to shop.

What’s Next?

In the past, the retail sector traditionally used electronic billboards to advertise. Although these are able to deliver audio and video information, system inactivity and one-way transmission of data leads to messages being lost or overlooked by customers. In contrast, next generation digital signage systems feature interaction through user-



friendly interactivity that allow customers to read messages as they like. Whether deployed in Nike’s storytelling fashion, or in TK3C’s series of special promotions, the message of these new generation displays is simple: at the touch of a finger customers can search for items they’re interested in—enjoyably and without stress. These displays bring consumer needs closer to the retailer, and help give the customers the incentive they need to make purchases.

But there is much more to digital signage than just supporting retail store marketing applications; in the future accessories will include RFID readers, microphones, cameras, voice recognition, video interaction, and DSS systems will be capable of proposing purchases, suggesting accessories or alternatives. In the retail industry, better product consulting leads to higher customer satisfaction, which in turn leads to higher purchase rates. Through the integration of the latest technologies, the boundaries of digital signage development are unlimited. In the near future, expect to see a slew of new and exciting digital signage applications, fueled by new creative ideas with a focus on the customer. ■

Mobile Interactive Digital Signage Solutions



Realizing Boundless Dynamic Communication

Advantech Intelligent Services (AIS) provides full-function digital signage solutions, featuring integration capability and optimized computing system and user-friendly signage software. In addition to a high performance signage player box, AIS also offers new mobile digital signage station and all-in-one touch LCD signage player to satisfy a variety of market applications. Users can have a more cost-effective and easy-to-use functionality to create content, manage assets, develop playlists, schedule playback and play content on various digital signage devices.



- Retail**
- Overall Broadcast Signage System
 - Stand Signage
 - Presentation Kiosk
 - Mirror Board



- Hospital**
- Signage with Queue Management System
 - Self-order Information Kiosk
 - Electronic Bulletin Board



- Company**
- Overall Over-communication Signage System
 - Live Video Broadcast System
 - Broadcast/Conference Center



- Hotel**
- Live Beverage Point Board
 - Direction Board
 - Network Broadcast Signage System





Enhancing the Effectiveness of Network Deployment

PoE-enabled devices allow network connections without extra power lines

Script by Cathy
Photos by Advantech

The digital society has certainly arrived. All kinds of advanced network equipment have become popular in industrial applications, including VOIP, IP Cameras, network switches, wireless base stations, residential gateways and more. Network deployment can now even be more convenient than before through Power over Ethernet technology.

Many technicians face overwhelming problems when trying to add or expand on networks in an industrial environment, especially when having to also expand power wiring in remote or already cluttered spaces. But those issues have all but been eliminated with the advent of PoE technology. PoE-enabled devices can support many kinds of network equipment, such as wireless network base stations and IP Cameras. PoE can easily resolve power supply problems by providing power through Ethernet cables. It also eliminates environmental constraints and power outages while enhancing the simplicity and convenience of the system overall.

PoE can eliminate environmental limits where deployment can be very difficult or expensive, such as in high-rise buildings. IP Cameras, for example, need to be placed in many locations around a building for security purposes, but should also be as inconspicuous as possible. Therefore installing power cords can be very troublesome.

PoE Applications are Growing

The market for new equipment with PoE technology is flourishing. According to a recent Venture Development Corporation (VDC) report, the market size of devices with PoE technology has reached up to \$5.2 billion USD, with an annual growth of 38%. There are many features of

PoE technology than encourage this adoption rate, such as fewer costs for electrical distribution, less downtime, easier maintenance, and more flexible installation.

In addition to networking environments, wireless network base stations and access control card scanners are also part of the basic equipment for today's enterprises. Moreover, as intelligent buildings become more popular, a variety of additional devices, such as security cameras, identifiable intercom systems or network base stations also need to be integrated.

The PoE standard (IEEE 802.3af) provides 12.95W of power at present, but the latest standard, IEEE 802.3at (sometimes called PoE+) supports up to 30W of power, which greatly improves the applicability of these devices. In the meantime, IEEE standard association is also working toward a greater power supply specifications which will be able to reach more than 45W of power.

While PoE technology continues toward high power supply, the ongoing growth of applications will extend to include network printers, notebooks, and other Internet-based products. Thus, PoE technology is valuable for large-scale organizations and enterprises that need to deploy network and security systems because it can effectively simplify network deployment and save operating costs. ■

PoE is a Powerful Tool for Industrial Applications

PoE is adapted to a variety of harsh environments and can increase the operational efficiency of any enterprise.

Advantech's Power over Ethernet (PoE) switches are becoming quite popular in telecom, video surveillance, transportation and intelligent building applications. Not only can they significantly help improve installation costs, but also streamline the entire system by eliminating the need for extra power lines.

Script by Cathy
Photos by Advantech
Interview with Jeffrey Wang, Product Manager at Advantech's Industrial Automation Group



Power over Ethernet (PoE) is a technology that allows devices to accept and transmit power through standard Ethernet cables. This allows the costs of investment and operation to be substantially reduced. Advantech's Industrial Automation Group provides industrial-grade PoE switches which have been adopted around the world.

There are a couple application examples that can be highlighted. The first is for a WiMAX telecom company in Japan who selected Advantech's PoE solution to be the switches for their WiMAX base stations. The second is video surveillance system for an intelligent community in Vancouver, BC Canada, who chose Advantech's industrial-grade PoE switches to save implementation costs.

The biggest WiMAX telecommunication company in Japan, Hitachi Kokusai Denki, provides WiMAX service in seven major cities, and plans to extend its network coverage to 90% of the territory across Japan within the next few

years. The most efficient way to establish transfer facilities for public wireless LAN is to establish them on rooftops of existing buildings. In the past this project would take a very long time and require a very large budget because it's difficult to build such an expansive network system with standard power lines. Furthermore, because this system will be installed outdoors, all products must be able to withstand extreme environmental conditions. Therefore, Hitachi Kokusai Denki chose Advantech's new Power over Ethernet (PoE) switches as the solution for this project.

WiMAX Base Stations

Advantech's EKI-2525P PoE switches feature a compact size and support 4 PoE ports at 15.4W of power per port. These switches greatly enhance the convenience of network installation and decrease the costs of establishment. EKI-2525P also feature a compact metal housing with IP30

protection, 3,000 VDC surge (EFT) protection, 4,000 VDC ESD protection, and wide operating temperatures (-10 ~ 60° C). These remarkable characteristics make EKI-2525P an excellent product for wireless LAN installations.

Excellent Solution for Remote Video Surveillance

The video surveillance intercom system in Vancouver, Canada, uses Advantech's industrial-grade PoE switches to connect the various intercom devices in their intelligent community. These switches connect to the local area network and link to the intelligent community management center in order to build a reliable intercom communication system. As the community's intercom system is installed outdoors, Advantech's rugged EKI-2526PI PoE switches were the best choice.

Through Advantech's EKI-2526PI PoE switches, a secure, intelligent community can be accomplished. The

switches simplify network establishment and allow the integration of audio, video and network services without having to install additional power lines. Public services in the community can link up effectively; moreover the individual houses and community management centers can connect very quickly.

Can Be Deployed in a Variety of Applications

Product Manager of Advantech's Industrial Automation Group, Jeffrey Wang, said that industrial PoE switches are gaining rapid growth because of their ruggedness and the rising popularity of network applications. Advantech's PoE solutions are not only IEEE802.3af compliant, but also meet the IEEE802.3at standard; providing up to 25W of power per port. Advantech's PoE-enabled switches can be adopted in a variety of harsh environments and are the best choice for network deployment applications anywhere. ■



Intelligent Management Solutions—

iManager for COM Integration and Improved Reliability

Script by Phil Wang
Photos by Advantech

Specifications based on the rigorous demands of smart and vertical sectors. Driven by the forever changing progress of technology, these relentless changes can sometimes overwhelm a system integrators' efficiency. Advantech's iManager for COM is a perfect solution that provides a standardized API, integrating several unique functions needed by embedded system integrators to help lighten the design load and speed their products' time-to-market.

Systems integrators are positioned on the frontline to directly deal with customers in the industrial control systems supply chain. One of the job descriptions for integrators, therefore, is that they must be client-driven, and have vertical industry savvy and systems expertise. Application programs in every system are the collaboration of both client and integrator. In the OS, however, client-centric customization isn't necessary for certain functional programs; yet integrators have to produce the same programs repeatedly. This is where Advantech's iManager for COM fits the bill by expanding the original hardware design service further and by incorporating firmware management—thereby minimizing project development difficulty.

Better Stability Starts with Hardware

"iManager for COM" is a relatively new way of thinking in industrial computing; but Advantech is no stranger to

this because they developed SUSI (Secure & Unified Smart Interface) - a combined suite of API for efficient hardware & software integration that preceded iManager for COM nearly four years ago, but was bred from the same basic idea.

SUSI is an OS-embedded software, allowing program writers to easily administer control of: displays, monitoring, power saving and security functions via the API. SUSI has helped many customers with their vertical industry focused designs; yet since it operates directly in the OS, it's susceptible to breakdowns when the OS fails. That's why Advantech introduced iManager for COM— an effective continuation of SUSI's API and more. The biggest difference between them lies in access; SUSI is attached to the OS, while iManager for COM is a built-in solution on the chip to integrate both soft- and hardware for greater operating efficiency. In other words, even if the OS fails, iManager for COM can still function normally to provide watertight protection for applications.

iManager for COM's Four Major Benefits

iManager for COM delivers four major benefits: simplified integration, enhanced system reliability, a secured system, and easy configuration. iManager for COM's unified software API can spare system integrators the time and resource to conduct software design modifications in full during system upgrades and carrier board replacements;

the original systems remain as functional as ever. All the kernels are built-in during system integration, so all developers have to do is to string them together. For system reliability, iManager for COM embedded on the carrier board is not susceptible to OS crashes. During overheating or abnormal voltage spikes, iManager for COM is programmed to take measures (such as automatic shutdowns) to protect the systems; also, eSOS - an Emergency Secondary OS for system recovery is in place to run an automatic diagnosis on the hardware when remote systems crash. eSOS then sends an email to notify the distant manager. The system manager can thus get the low-down on the situation and decide what action to take.

iManager for COM is also empowered with robust hardware monitoring mechanisms, among which is Smart Fan, where the control program is embedded into the board's chip independently to enhance stability so the client can easily adjust the fan's speed. In general, applications are subject to possible failures if the board overheats, so the fan is generally programmed to start running as soon as the systems are activated until they are shut down. iManager for COM with Smart Fan monitors system temperatures, and starts running only when the temperature reaches the preset value, and stops when the temperature drops below that value. With this feature a systems' stability can be dramatically increased to better conserve energy and minimize noise.

To address security concerns, iManager for COM designates a space so integrators can store important data there, with additional encryption on the chip. In older versions, encryption was placed in the BIOS, but iManager for COM now provides an additional layer of encryption for double protection, rendering it a perfect solution for financial and medical industries where security demands to protect sensitive data are high. Also, iManager for COM is designed with a friendly graphical interface to facilitate system design configuration, while significantly cutting down iManager's event setting time.

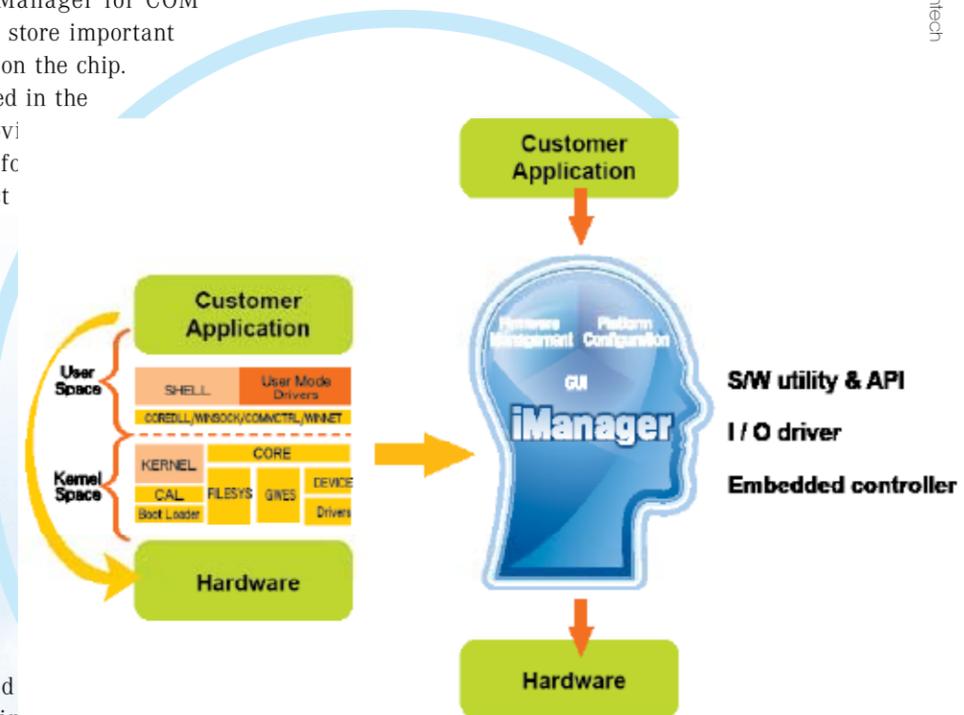
A Shift in Market Positioning Tightens Supply and Demand

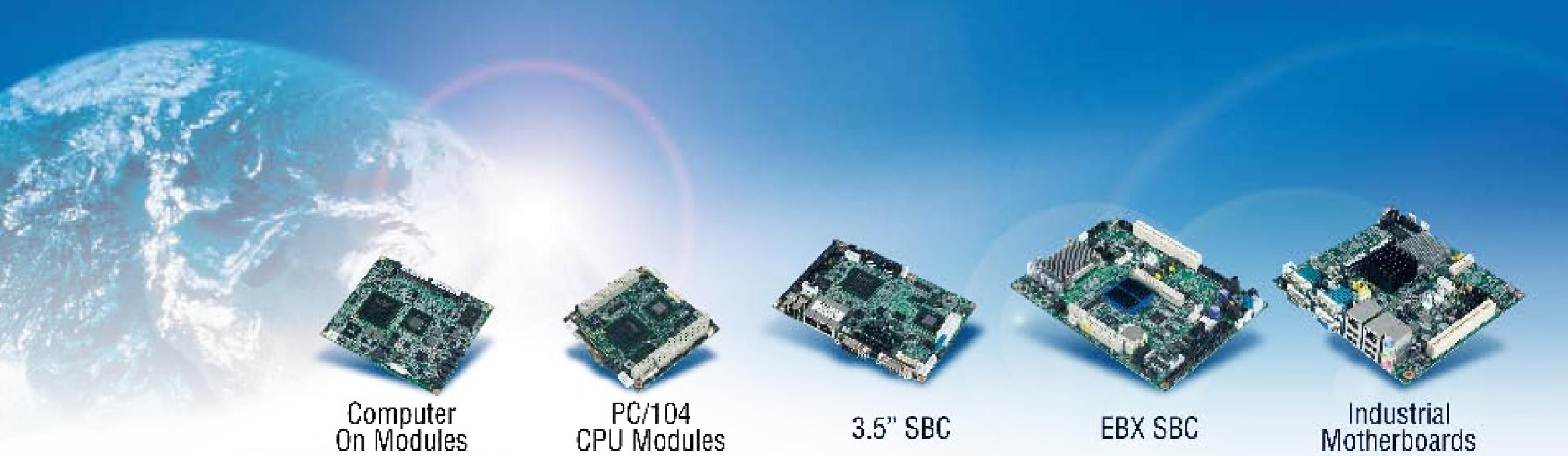
Advantech's market position has undergone many adjustments over the years. The company has evolved from a simple industrial computing products supplier of the past, to become a trusted partner to its clients in the industrial

and embedded computing industry. This shift in role is mirrored in Advantech's product designs. For the market, industrial computing products have been classified as hardware-centric.

The inclusion of these functions signifies that Advantech is not viewing the market as a simple hardware supplier; rather a company that considers itself a reliable partner to system integrators and suppliers. Both SUSI and iManager were launched with that philosophy in mind. These two solutions offer powerful configuration features and versatile APIs. And because system integrators have to carefully balance the needs of clients while developing their hardware designs, they often overlook API considerations—the launch of SUSI was a much needed breather for integrators as a result. Rather than just settling for SUSI, Advantech introduced iManager for COM to make up for what SUSI was lacking—speeding up system design efficiency even more.

Advantech understands the crucial role it plays in the industrial computing supply chain to address numerous demands and provide necessary solutions so that everyone can benefit. And in doing so, it's fulfilling its role as the world's leading, professional industrial computer maker. The introduction of iManager for COM is more than the integration of hard-/software technologies, it's about understanding its relationship with the clients; and by virtue of expanding its service scope, Advantech can forge an even closer partnership with valued customers. ■





Computer
On Modules

PC/104
CPU Modules

3.5" SBC

EBX SBC

Industrial
Motherboards

Comprehensive Range of Embedded Boards Based on Intel Atom/Core i7 Processors

Script by Embedded Core Group

As 2010 unfolds, new directions in the embedded computer market are appearing. Traditionally, the embedded market contained a small niche range of products and applications, but now that market is expanding. Newer applications have appeared, including smart phones, STB, VoIP products, automobile communication systems, digital home appliances, mobile internet devices, e-books, and GPS products. These new opportunities result in more and more technology companies putting a lot of effort into research and development for related products, and just recently

Intel® announced that it is releasing several new processors especially for the embedded market.

The embedded market continues to grow and evolve as suppliers look to offer broader and more fully integrated solutions across the development, deployment, and management of embedded devices/systems. Regardless of what type of application is being developed, the requirements for quality optimization, performance, manageability, and better efficiency will still be the most important features. Recently, Intel® released their low-

power, high performance, multi-core Atom™ and Core™ i7/i5 processors with revolutionary two-chip architecture specially developed for the embedded market. These will result in smaller designs that are more efficient from power and cooling standpoints, and will enable smaller form factor designs. In conjunction, Advantech was able to rapidly launch a full range of embedded boards based on these new generation processors because of its “early design-in” program that provides the latest computing platforms ahead of the curve. These launch initiatives include a kick-off focused design team, design unification to facilitate BIOS/ software API implementation, and customer samples for early design-in projects. The great benefit for the customer is that Advantech is able to provide many new products with the latest technology ahead of schedule.

Full Spectrum of Atom™-based Embedded Platforms

Advantech developed a series of embedded platforms based on the new Intel® Atom™ processors in various form factors that include: computer on modules (COM), single board computers (SBC), and industrial motherboards. The Advantech COM-Ultra SOM-7562 (84 x 55 mm) is the most suitable solution for personal handheld applications. The COM-Micro SOM-6763 and ETX 3.0 SOM-4463 were ready at the end of Q1, 2010. For single board computers, the 3.5" PCM-9362, 5.25" PCM-9562, and PC/104 CPU module PCM-3362 are all available for compact application development.

Advantech will also soon be introducing a new industrial motherboard, the AIMB-212, which will bring higher power efficiency to the Mini-ITX motherboard class. Finally, Advantech offers the half-size SBC PCI-7031 for highly expandable applications.

Full Series of Core™ i7/i5 Embedded Boards

The Intel® Core™ i7/i5 processors deliver ultimate performance with maximum 8-thread processing capability and support for DDR3-1333 MHz memory up to 16 GB. With ultimate computing power for multi-task processing and strong I/O capability, they are ideal platforms for today's industrial applications. The Intel® Core™ i7/i5 processor based platforms range from computer on modules, to single board computers, and industrial motherboards. The COM-Express SOM-5788 is the most suitable solution for graphics intensive and dual display applications. AIMB-270/280 bring top performance combined with power savings to the Mini-ITX motherboard class, as does AIMB-580 to the MicroATX class, and AIMB-780 to the ATX class. Finally, PCE-5125 will provide an ideal solution for the PICMG 1.3 SBC class. All of these products provide superb all-round performance, expandability, and versatility for a wide range of applications, and API's and utilities are bundled with all Advantech boards to facilitate application development. ■



The Benefits of PAC Solutions

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Script by
John Wilhite,
Advantech
Corporation,
Industrial
Automation Group
Photos by
Advantech

PACs Provide More Solutions for Industrial Automation than PLCs

Since the introduction of the PLC, the uses of self contained automation controllers have changed the complexion and architecture of the control system itself. The development of the PC and its evolution into a ubiquitous control device has relegated the PLC to smaller, simpler control systems. The PC is now seen in many forms; embedded controllers in transmitters and machines, industrial controllers, industrial computers, and even mobile devices in the industrial environment.

The Evolution of the Automation Controller

PLCs began as simple relay replacements with

proprietary real-time operating systems. One of the reasons for this was cost—in the late 1960s, memory and processing power were extremely expensive by current standards. Over the years, PLCs became larger, with more processing power and more memory, and more capabilities for I/O channels, and eventually the ability to do mathematics in function blocks instead of just ladder logic programming.

In the early 1980s, the small “personal” computer was developed as a general purpose computing device that was intended to be inexpensive enough for anyone to afford and powerful enough that anyone could use them for high-power computing projects, such as electronic spreadsheets, which had just become available. The problem was that the PC was not designed for industrial use on the plant

or factory floor. It had a removable casing, cooling vents and an open fan. These made the life expectancy of PCs on the plant floor short. Of course, this led immediately to repackaging PCs in industrially-hardened enclosures, using Mil-Spec componentry and extended temperature circuit boards. Some of the first applications these Industrial Computers were used for were high speed data acquisition for aerospace, motion control, and machine vision systems.

In the early 2000s, Craig Resnick of ARC Advisory Group gave a name to industrial computers re-packaged in a design that was very similar in form factor to the conventional PLC. He called them Programmable Automation Controllers, or PACs. Resnick’s PAC combined the features of a PC-based industrial computer with the control capabilities of a typical PLC. He noted that a PAC should combine the reliability of a PLC with the computing power and commercial, off-the-shelf operating system and software capabilities of the PC.

PACs are now used for process control, data acquisition, remote monitoring, machine vision and motion control. Because PACs are special purpose versions of PCs, they share the onboard capabilities of networking over standard networks such as Ethernet with their desk-mounted cousins. Most PACs have integrated capabilities for the standard network interface protocols such as TCP/IP, SMTP, and an outgrowth of Microsoft’s data exchange protocol, OLE for Process Control, but now simply referred to as OPC. PACs can integrate multiple legacy industrial field networks, such as Modbus, RS-232/422, RS-485, CANbus, DeviceNet, Profibus, Foundation fieldbus and others, over standard Ethernet networks, either wired or wireless.

Compressing the Manufacturing Model: Automation Gets Simpler

The rapid growth in capabilities of the PAC has made it possible to compress the standard multiple layer manufacturing model. The original Purdue Manufacturing Model had five levels, from the process itself to the

enterprise business system level. Advances in processing power and control at Level 1 with the convergence of field controllers and distributed control systems, which has been attributed to the PAC has permitted Levels 1, 2, and 3 to be compacted into one level, leaving a Plant Control and Operations level, and an ERP/MES level, as shown by the next graphic. Basic control and even safety critical control in some cases, Operator Interface, and higher level HMI/SCADA functions have been integrated into a single platform design based on the PAC.

PAC: One Control Platform

The PAC system integrates control, information processing, and networking on a single controller. Because the PAC is an industrial computer in a PLC form factor, it has all the features of a PC, including large memory storage, hard drive, operating system, and, if desired, even multi-core processors. Regardless of whether the installation is a batch system, continuous process system, hybrid; high speed machine control or a machine vision system, the PAC provides a single control system capable of performing all of these application tasks—and in some cases multiple tasks at the same time.

PACs can be integrated into the local HMI or a local HMI display panel can be located close to the PAC installation. PACs can even function as mobile data servers with onboard SQL server and storage technology so that data can be pre-processed, used for control purposes in the PAC, and transmitted to the Enterprise database. Here is an example of a typical PAC’s data manipulation capability:

One concern about PACs has always been the non-deterministic performance of Windows and its derivatives, and Ethernet and its derivatives. Advantech, for example, has tested its PAC platform for deterministic (Real-time) performance and has shown what they say is a proven 1 ms update time for 32 digital I/O modules. This confirms the continued usage of PACs for high speed data acquisition, motion control and machine vision applications



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where update rates of under 20 ms are critical to control performance.

Emerging Applications

The versatility of the PAC platform is clearly shown by the wide variety of applications for which it has been used—both in manufacturing and outside the traditional manufacturing applications set.

Integrating control, HMI, information processing and networking into a single control system makes it possible to use the platform in applications as disparate as gas pump management at a retail gasoline station, mobile GPS applications in trucking and delivery, automated testing platforms in discrete electronics assembly, final product inspection, RFID integration, and even asset management, in addition to the traditional process and discrete control system applications.

And in the traditional process industries, the versatility of the PAC can be shown by its use in a concrete batch control system. Replacing an existing PLC and IPC architecture by a single control platform on the Advantech APAX PAC resolved all the communication issues between the PLC (which used serial communications) and the IPC, which was Ethernet enabled. It permitted the SoftLogic control program and the HMI software to run simultaneously on the integrated PAC system. The PAC included remote monitoring capability for real-time data directly from the control center using open standard Modbus/TCP protocol over standard 100Mb Ethernet.

It's What's Inside that Counts

A PAC is not simply a personal computer or single board computer put in a ruggedized enclosure. The nature of industrial automation applications like the cement batching application discussed above means that PACs need to be designed specifically to be PACs with higher standards for design and components than the standard PC or even the standard IPC. Features like High Common Mode rejection, software power filters, over voltage protection, over temperature shutdown protection, over current shutdown protection and short circuit protection are standard in the modern PAC, while they may not be in any adapted single board design. While the PAC is more versatile than the PLC, the design of a PAC must be according to IEC-61131-2, type 1...the same standard of design as a PLC.

The modern PAC is generally more reliable than a PLC, and certainly in a class by itself in comparison with IPCs and OEM single board designs. With its strict certification as a PLC, and dual controller architecture, dual power input, and backup system functions, it is rugged, durable, and capable.

The fact that design of PACs is an outgrowth of small computer design means that as small computer design improve; the PAC will improve and change, becoming the controller of the future. ■

PAC Technology

The Compression of the Automation Platform



Information On-Screen: Video Surveillance in Industrial Automation

Script by CC Lin & Paul Wacker, Advantech Corporation, Industrial Automation Group

Photos by Advantech

Seeing is believing, according to the old saying. The challenge, however, is how to see intelligently. Staring at a screen is not the answer, since in such a setting it's too easy to lose focus and miss an important event. Fortunately, advances in digital video compression and other technologies have made the job easier. They provide a way to combine what the camera sees with other data, presenting information in real time so that a more intelligent decision can be made. They also allow tracking video to be synchronized with alarm logs and stored for later analysis.

A Surveillance Disconnect

Traditionally, video surveillance was only for security. Cameras mounted at strategic points transmitted what was going on and guards sitting at desks had to monitor a bank of screens. The cameras were analog affairs, with the data stored on tape, if at all. The advent of digital cameras and video technologies provided some improvements and enhancements but did little to fundamentally change this scenario.

For industrial automation applications, there's a lot wrong with this picture. For one thing, studies by Sandia National Laboratories have shown that people can only concentrate on a target for a limited amount of time. After 10 to 20 minutes, their attention wanders and crucial details are lost.

Video surveillance for industrial automation:

- Increases safety
- Improves productivity
- Cuts response time
- Enables more intelligent decisions
- Enhances record keeping



Industrial automation applications can involve dangerous situations or circumstances where the wrong decision can be very costly. Consequently, what's needed for these uses is some way to improve video monitoring. That is difficult to do with traditional technology and methods. For one thing, typical surveillance only provides a visual view because that is what is important for security. Other information, such as temperature or pressure in a tank, is not. So this data is not on the screen and not synchronized to the feed.

What's more, conventional systems can only play back that video by time and date. Such information as logs or alarms cannot be used to find a particular image or sequence of images, as there is no direct link between the two. It is possible, clearly, to use time-stamps to achieve this linkage, but a manual operation to do this can be tedious and error-prone.

Watching a Furnace Safely

These problems keep industrial automation applications from realizing some significant benefits. Consider a few scenarios where video surveillance could be helpful.

The first involves hazardous applications, such as an area with some combination of a boiler, furnace, compressor, and gas piping. Another somewhat similar setting might involve a gas or chemical storage tank. Keeping operators, technicians, and engineers out of these locations is a good practice, since it minimizes their exposure to what could be a life threatening situation. At the same time, however, seeing what's going on inside these areas can help with scheduled maintenance and in diagnosing unscheduled shutdowns or other problems. If a high pressure alarm sounds, for example, an operator could use video surveillance to check on the situation, with the images providing another means in addition to the data from sensors to assess what is happening.

Thus, being able to see at a safe distance could be very helpful in what are fairly common industrial circumstances. Not only can it increase safety but it can also help maximize uptime.

A second broad industrial category where video surveillance could prove useful involves environmental monitoring. In both of these examples, video surveillance also means that plant staff can effectively be in many places at once. By using cameras, they can visually scan a number of locations quite quickly. Thus, the technology boosts productivity.



Video for Less

As these examples show, video surveillance can bring some important benefits. Now, thanks to technical improvements, those benefits - and much more - are easier to achieve in an industrial automation setting.

The first technology advance is deployment of video compression technology built to meet the MPEG-4 and H.264 standard. Developed by the Moving Picture Experts Group - hence the letters in MPEG-4 - and others, these standards specify how video is to be compressed, allowing a 720 by 480 30 frame per second image to be transmitted at bit rates that range from a few tens of kilobits up to several megabits per second. Much of that

bandwidth range is well below the capacity of landline broadband or 3G wireless networks. That makes it possible to deliver relatively high quality video to laptops, handheld devices, mobile terminals, and elsewhere.

The second technological enhancement involves IP cameras. Better and cheaper sensors, along with less expensive electronics and optics, have made these cameras inexpensive while still allowing them to produce relatively high quality video. These cameras can also be accessed and controlled using standard IP addresses, a capability that enables networked video surveillance.

The surveillance they make possible have proven popular, as a look at market statistics illustrates. According to the UK-based business and technology consultancy IMS Research, the market for network video surveillance will grow by nearly a third this year, despite the global slowdown. The projected 29 percent increase for this category compares to a tenth that, or 3 percent, for the analog surveillance market.

The growth of the traditional market is expected to remain low, while the growth rate for network-based video surveillance is expected to pick up. Estimates are that the compound annual growth rate will be about 38 percent, with the market value hitting \$4 billion U.S. by 2011. In another indication of that growth, consider what will happen to the video. The data generated will hit 3.3 exabytes, or 3.3 billion gigabytes, by 2012 and will consume \$750 million worth of external storage by that year, according to IMS.

Augmenting Industrial Automation

For industrial automation applications, what does this new technology mean? It provides a way to marry video with other data in a manner that offers multiple benefits. These include increased safety, greater productivity, and

the ability to respond quicker and more intelligently to an unusual situation or crisis. There are also potential gains in improved record keeping and incident post-mortems.

All of these benefits are possible because the video feed from the new breed of cameras is digital in nature. Either data set can be carried anywhere by an IP compatible protocol, with all of the data subject to processing and display by a handheld device, laptop, or computer.

For industrial settings, this means that IO data can be displayed on the screen, along with the visual data. What that is done, operators and engineers no longer have to monitor two systems. Instead they only need follow one. The information content can be defined such that only the most important aspects are displayed. The size, color, and position of this content can be set up as needed. What appears can be more than a static array of numbers or a simple view from a camera. Action items that need attention can flash or change color if, for example, an alarm happens.

The key is not simply that information is displayed. Rather, it is that the data is filtered and the important elements are highlighted, thereby quickly allowing the viewer to focus in on what is critical while ignoring what is not. At the same time, additional data is available if the viewer wants to drill deeper or investigate something unusual.

In such an arrangement, one essential ingredient is the ability to quickly and successfully filter the vital from the trivial. In the type of free-flowing situation depicted in the movies and researched at universities, this filtering can be a challenging task to do properly, requiring tremendous amounts of computing power and very sophisticated algorithms.

An industrial automation application, on the other hand, is a much more constrained setting. The important parameters are known, along with the values of those readings which should cause an alarm. Because of this, today's technology is up to the task.

Benefits and Examples

To see how video surveillance can be used in industrial automation, consider the following scenarios. All are fairly standard industrial situations.

Plants often have to clean their waste air discharge of pollutants or contaminants for regulatory, safety or other reasons. While this can be done in a number of ways, one method that is used involves a flare. The flame consumes the pollutants and transforms them into something more environmentally friendly. Alternatively, if the contaminant is explosive, a controlled burn can eliminate it from the waste stream, which increases safety.

In the case of a flare, information about the concentrations of oxides of nitrogen and sulfur generated

by the combustion can be superimposed on the scene, along with the temperature of the flare. Like the video itself, all of this information can be real-time. With this setup, an operator or engineer would be able to see the flame and all pertinent data about it at the same time.

For a chemical tank, the typical video conveys little information of importance, since it often is just an image of the outside of the tank. However, with the new technology the situation can be significantly improved. The level of the liquid inside the tank and its temperature can show up on an image of the facility, with both being updated constantly.

Another automation application can be found in moving goods into and out of a factory, a very common industrial operation. With the right hardware and software, a video image of a truck entering a site can be displayed, along with its license plate number and weight. The plate number can be extracted using pattern recognition and a camera while the weight can come from a scale.

This integration of video with other data can be particularly helpful during an alarm situation, since operators and engineers need only scan one screen to get all the important, relevant information. This data linkage also means that the video data, alarms and logs are synchronized. Thus, the entire stream can be searched, which could prove important when events are analyzed later.

To get all of these benefits when an industrial automation video surveillance solution is implemented, it is important to pick a provider that has expertise in both areas. Advantech, for example, has a strong automation portfolio and extensive experience in digital video solutions. The company's industrial video surveillance products include software and video capture cards for PCI, PCI-104 and USB IO. Many offer hardware compression on the card, which reduces the load on the host. There also are PCI boards with software compression, suitable for those situations when enough processing power is available and dedicated hardware is not needed.

Conclusion

Technological advances mean that video surveillance solutions can now bring substantial benefits to industrial settings. Safety can be improved, with plant personnel able to monitor dangerous operations remotely. This also can increase productivity, since staff can use surveillance to keep an eye on many different locations at the same time.

Because of digital technology, the benefits are greater than that. Industrially relevant information - like pressure, temperature, or fluid level - can be superimposed on the image. This makes video surveillance more useful and improves the ability to make the correct decision during an incident. Combining information in this manner also makes recorded video more meaningful, since it can now be linked to alarms and log listings of measured parameters. ■



Jansin He
Sales Director
Advantech China

It has been ten years since I joined Advantech. I first got to know about Advantech from when I was in college. I majored in Industrial Automation and we used Advantech products for our projects. After graduation in 1998, I became an automation engineer in an iron and steel company where I also used and maintained Advantech products. I joined Advantech at the end of 1999 and worked in Sales and then as a Sales Manager in NCG/ICG. I was transferred to AiSC in 2009 and worked as Sales Director with MC. Chiang in ACN to develop the market in Signage, UbiQ and Surveillance.

I am very happy to be a member of Advantech while it has been growing at full speed and to contribute my share during these ten years. Actually, there are many colleagues and friends around who have similar experience as me. Some of them have worked at Advantech longer than I have. When we hold a get-together, we often recall the wonderful things that happened over these ten years and look at old photos. We are gratified that we have devoted ten years of our precious time to Advantech. And even though we are anxious to help Advantech develop at an even faster speed, we are happy because we know we have spared no effort because we love Advantech from the bottom of our hearts!

AiSC, as a new member of the Advantech family, will open brand new markets and set up new business models for Advantech. AiSC will focus on vertical markets and is expected to develop in the direction of project integration by taking solution sales as its main task. We will be closer to the market and end users and we will guide Advantech to the development of more marketable products and solutions.



Neil Chang
CTOS Production Manager
Advantech Milpitas

I first joined Advantech in August of 1997, right after college with a degree in Industrial Engineering, not knowing where I need to begin until Advantech offered me a position as test technician. The AASC production in North America was small compared to the current capacity which is 7 times larger. As I look back over the past 12 years journey with Advantech, it all seems to have happened in a short time, and along the way, as I learned more I grew as well witnessing Advantech grow.

After a few months I was promoted to Production Engineer. And a short year later, I was promoted to supervise the team. From there, I spent 7 years as a Production Supervisor, enjoying great experiences and continuously improving both personally as well professionally to support sales and customer needs.

In March of 2006, I was offered a more challenging position as Assistant Production Manager to lead AASC production and shipping. During those three years of service I gained most of my management experience from my Advantech colleagues, sales and customers; working closely with a strong production and quality team to support and ship the best quality products to North America BTOS, CTOS, DTOS and SIS customers. In November 2009, I was promoted as CTOS Production Manager and to this day, continue to fulfill the customization needs from vertical market and branding customers.

I enjoy playing golf, which is my favorite sport since it is such a challenge for each green and hole. I spend most of my free time with family but I also enjoy the Advantech flying eagle golf club where I enjoy playing with my Advantech colleagues.

I'm Andreas Roth, a Key Account Manager based since 2008 in our office in Munich, the beautiful capital of Bavaria.

I started my career with an apprenticeship, and gained work experience in commissioning fossil fuel power plants. After two years I decided that's not all there is and went back to school.

After graduating, my goal was clear: explore the world and get experience in foreign countries. My journey started with a trip through the USA working for an importer-exporter and a scanner company. Returning to Germany, I worked as a project manager for two international companies in the power plant and parcel/automotive logistics branches.

Working on several projects in the USA, South Africa, Asia and Europe gave me a solid knowledge base in international automation and sales.

Finally I started a family in 1995 and changed job, working for a local company in PLC and Fieldbus soft- and hardware development. As a technical salesman I got my first impressions of product sales in Germany, Austria and Switzerland.

And when i am not working, I love to go with my family traveling around the world. Activities I also enjoy are playing volleyball and skiing/snowboarding. And I love the mountains, especially on my motorbike.

All these activities and knowledge help to enable me to join you in being a successful part of the Advantech family. Thanks.



Andreas Roth
Key Account Manager
Advantech Europe

Greetings from Advantech Singapore! My name is Cynthia, and I began my exciting career as an HR & Admin Executive with ASG in July 2009.

Some years before getting into HR work, I was working as a shop supervisor in a leading ladies' wear boutique. Although that was a fulfilling job which allowed me to experience meeting new people every day, it wasn't a career that I wanted still to be in when my hair turned grey. It was then that I made the bold decision to switch to the HR industry as it would allow me to continue meeting people and help shape others' careers. My switch was also made possible as I diligently pursued a professional HR course with the Singapore Human Resource Institute. Now, five years on, my passion for the job is still going strong.

At Advantech, my job requires me to oversee the HR functions not only of Advantech Singapore but also branches in countries such as India and Malaysia, since Singapore is the South Asia Pacific Headquarters. Other than the usual HR functions such as recruitment, training & development and performance management, I get to plan and implement workplace health promotion programs that promote work-life balance and mental wellbeing as well as various staff welfare and benefits initiatives.

I must say this is a very fulfilling job as it allows me to learn and grow with the company. I'm proud to be part of the Advantech family, and as a HR professional I am dedicated to marketing Advantech as an employer of choice as the opportunities are beyond what you can imagine.



Cynthia Chua
HR & Admin Executive
Advantech Singapore

A Strong Branding Presence in Australia

With the planned expansion, AAU is not only reaching its sales target but is also setting higher goals.

Script by Sharlene Yu
Photos by Advantech
Interview with Santo Gazzo, Advantech Australia (AAU) General Manager

Australia is rich in natural resources. It is a major exporter of commodity products, particularly wheat and wool, minerals such as iron-ore and gold, and energy in the forms of liquefied natural gas and coal. "The mining and agricultural sectors play a large role in Australia's economy," said Santo Gazzo, Advantech Australia (AAU) General Manager. He also pointed out that AAU has been a key supplier of products either directly or indirectly to these markets, particularly in the areas of transportation and farming management.

AAU was established in 2001 and has 28 employees across two offices situated in Melbourne and Sydney. Following the global financial crisis, Australia's growth was the envy of the developed world. "Australia is one of the lucky countries with an economy riding on the back of China's growth," Santo said. The strength of Australia's mining sector helped it to avoid recession, and AAU with solution partners has also had great success in this area. Last year, AAU worked with Minesite Technologies to provide a mobile resource management system to meet the mining industry's requirements. The provision of specialist products to the mining industry is a big challenge. Conditions in mines and mineshafts are often cramped, dirty and grueling, with workers facing hot and uncomfortable environments. For that reason, they need special products to fit their needs, such as compact and rugged computers. As a result, Advantech's industrial grade products have gained a good reputation, the plan now is to expand this success to other underground mines worldwide.

AAU has a strong presence in the Industrial Automation and OEM markets in both Australia and New Zealand, and is making good headway in emerging high growth vertical markets such as Medical, Digital Signage and Transportation. As part of a planned expansion, AAU is entering several new vertical markets. At present, AAU has setup an eCoverage team to increase corporate visibility. "Our eCoverage team includes three ladies: Alisha, Holli & Layla, together they have a team focus of 'delighting the customer,'" said Jasmine Harrison, Advantech's Australia Marketing Manager. The eCoverage team is also responsible for following up on DMF and vertical market DM, eDM & eStore marketing activities. In 2010, the vertical market focus was on Digital Signage, Transport & Fleet Management, and OEM & Medical. Furthermore, this team is also responsible for filling the seats for our Microsoft/Advantech 'Faster to Market' training seminars which are being held all over Australia, most recently in Melbourne. The partnership offers new avenues for both brands providing access to previously untouched markets.

Today, the Australian economy is doing better than many other nations. Recently, the central bank continued to raise interest rates to cool its growing economy. Looking forward, AAU is well on target to reach its quota targets in 2010 and has set a high standard after achieving 21% growth in its first 2 months. Looking to the future, AAU's goal is to be the leader in its respective field and further develop its strong branding presence and sales growth in the key growth regions and vertical markets. ■

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Advantech Headquarters
No. 1, Alley 20, Lane 25, Hsuehguang Road,
Neihu District, Taipei, Taiwan, 114, R.O.C.
Tel: 886-2-2792-7818
Fax: 886-2-2794-7804



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A person is rappelling down a rope against a background of a blue sky with white clouds. The person is in a horizontal position, holding the rope with both hands. The image is partially obscured by semi-transparent rectangular overlays.

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