MyAdvantech

The Magazine for Global Advantechers and Partners

Autumn **2013 No.13**

Enabling New Intelligent Services for the Future

Bicycle Rental System Completes the Last Mile

Empowered Customer Care in Banking

Turnkey Signage Solutions

The Key to Accelerating Signage Deployment

From traditional promotions to the emerging digital media, Digital Out Of Home (DOOH) applications have been used widely in various fields, and will also significantly grow in the next few years.

MIO Extension Total Solution

Build Intelligent Systems Quickly

ADVANTECH

Enabling an Intelligent Planet

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WebAccess+ Alliance for Building Collaborative Partner Relationships

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Enabling an Intelligent Planet

Build a Win-Win Partnership by Joining Advantech's WebAccess+ Alliance

Integrated solutions, focused vertical markets, and partnerships are three essential factors to grasp business growth opportunities in the new era of the Internet of Things. Advantech's WebAccess+ Alliance is an innovative cooperation platform with a base of the IoT Solution software - WebAccess - to link with hardware, partners' strength and strategic co-marketing to get into focused vertical markets, such as water, oil & gas, intelligent buildings, factory automation, and renewable energy. Through the WebAccess+ Alliance, our selected partners can get a host of co-marketing opportunities and complete technical support.

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Intelligent Services are Everywhere!

What are Intelligent Services?

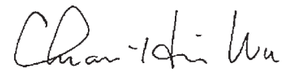
Intelligent services utilize the underlying embedded technology that's all around us. For example, some of the following scenarios will be familiar: As usual, you visit the bank and wait your turn to be served, but now, when you draw a number from the new smart queuing system, a ticket will allocate you to a designated counter where the particular services you want have been assigned to a particular specialist bank teller. In a hospital, patients spend less time in the waiting room because their registration has already been completed through the interactive Digital Signage Kiosk in the entrance lobby. And on the ward floor, mobile nursing carts help nurses to offer high-quality point-of-care and patients use bedside infotainment systems to pass the time during their hospitalization. Outside, a delivery van has arrived at the convenience store and its arrival has generated a message that has been sent to the logistics center via an in-vehicle system, allowing administrators to fully control their fleets.

People may not be aware that all the embedded devices and services around us have quietly changed and this change has contributed to a new era of intelligent services, which wouldn't have been possible unless strong support from background automated systems were in place. In the past, automation equipment was mainly designed for manufacturing industries. Although the applications have broadened to all kinds of vertical sectors, they were still not truly intelligent. So called intelligent devices typically include four main features: mutual interaction, multi-channel services, customizable functions, and real-time device management.

Cloud computing has made a huge contribution to intelligent services recently. Through a variety of cloud-based applications and services, enterprises and public agencies have been able to break through the constraints of time and location to provide instant services especially via the "Industrial Cloud". After fully integrating the hardware infrastructure, various "on-demand" services can now be offered via the cloud. In the future, data and software will be stored in large, shared and scalable data centers, and thus any terminal device with networking capability can utilize the benefits of the cloud for: processing and analysis, storage and backup, running applications and much more.

Moreover, designing a customizable system for all the different application fields is a key development in order to create ubiquitous intelligent services for everyone. Advantech has specialized in automation for over 30 years and we not only have vast industry experience, but we also understand vertical applications in depth. Our expertise can help System Integrators and end users accelerate their product development by integrating all software and hardware architectures. Because, integration and total solutions are crucial for today's successful e-business, Advantech's comprehensive product lines are designed to meet one-stop shopping demands by providing "Industrial Packages" - highly integrated solutions for System Integrators to boost their market competitiveness.

As we gradually build up the background infrastructure, services will be gradually extended to each corner of the industrial and embedded world and then we can accomplish the goal of intelligent services everywhere, for everyone.



CH Wu
Vice President of Advantech iServices & Applied Computing Group

Electronic Toll Collection Transportation Solution

The 99.98% toll-collection rate of the new ETC Electronic Toll Collection system has attracted attention from many countries. This intelligent transportation system was constructed in Taiwan by FETC (Far Eastern Electronic Toll Collection Co.) and Advantech. In the future, FETC plans to cooperate with all project partners to promote the project worldwide to demonstrate their innovation and R&D capabilities.

By Sharlene Yu and Pictures from FETC
Interview with Y.C. Chang, President of the Far Eastern Electronic Toll Collection Co. (FETC)

Since the ETC (Electronic Toll Collection) system launched the free eTag installation project in 2012 May, over 2 million users have completed the eTag application to date. According to FETC, the total number of valid users, including previous OBU users, officially exceeded 3.3 million last December. Currently, ETC's rate has broke through 70%. Its CEO and general manager Dr. YC Chang said, "For this public-private partnered BOT project, even though it faced challenges from: contract pressure within government, penalty clauses, supervision from the media and endless user requests, FETC regards these as a motivating force to "progress forward". This Intelligent Transportation Solution (ITS), combined with Advantech's ICT technology and FETC's intelligent logic expertise, whose platform forms the basis of this total solution, will create many opportunities, not just domestically, but in the supply chain of the entire intelligent transportation sector.

Unique Drive-through Toll Gates

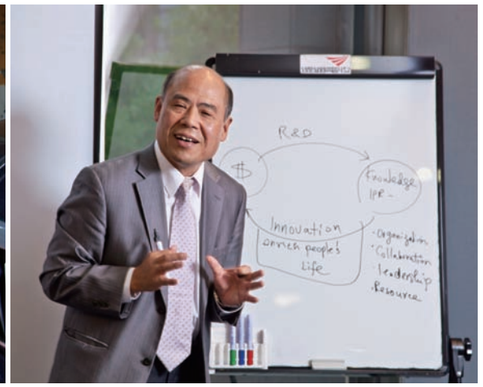
Ever since FETC's ETC project was carried out in Taiwan, its toll-collecting rate has reached 99.98% each day which has been praised among transportation experts from overseas specializing in electronic toll collection systems, and its advanced technical features have drawn many experts to Taiwan to learn more about it. In mainland China alone, over ten delegations from Hunan, Guangdong, Zhejiang and others came to Taiwan to understand the ETC system for themselves. Dr. Chang explained, "To solve traffic jams, several provinces and cities in mainland China want to levy congestion charges, but if they selected the non-electronic license plate recognition systems currently used abroad, this would produce poor accuracy or require twice as much labor to implement. Because of this, Chinese customers showed great interest in FETC's ITS solution."

Dr. Chang further explained, "FETC integrates traffic, information flow, and currency into the ETC system, and then uses a variety of techniques like Radio Frequency Identification (RFID) labels, laser beam detection, Optical Character Recognition (OCR), License-Plate Recognition (LPR), Vehicle Positioning System (VPS), Dedicated Short-Range Communications (DSRC), and cloud applications, along with Advantech's industrial servers, to create an advanced 21st century intelligent traffic system for Taiwan's drivers.

What's more, the ETC system contains precise eTagging from its advanced OCR capability. "Different from the standard barrier-type electronic toll collection services used abroad, this system is without barriers and has low-speed drive through gates which detect vehicles passing through and automatically charges them. Electronic labels alone are not enough to achieve a 99.98% successful toll-collection rate, so the ETC system uses advanced license-plate recognition to complete the auto-debiting process without error; no matter how dirty, obscure or how un-recognizable the license plates may be," said Dr Zhang with sense of pride and satisfaction.

Without Advantech There Would be no 99.98% KPI

Because ETC systems are applied to toll gantries installed on the highway, RFID sensors used to detect eTags in vehicles are naturally installed on the top, and a high resolution camera is used to record license plates.



Finally, all the data will be transported via an industrial computer to a central administration room. Dr. Chang explained how Advantech played a key role, "Because servers were installed beside toll gantries, they must be able to operate stably in the harshest of environments where vehicle vibration, dust and wind blows 24/7. Without this capability, it wouldn't have been possible to achieve the 99.98% KPI result if any of the toll booths, among the hundreds installed island-wide failed, and we were so glad that we didn't have to seek outside assistance because Taiwan already has a partner like Advantech, which provided us with highly reliable industrial computer platforms and services."

The engineer in charge of the project from Advantech made an additional remark, "As early as two years ago, Advantech started offering technical services on ETC test equipment. Advantech installed 500 industrial computers along whole stretches of the highway before charging-by-mileage was officially launched. Those Advantech products were not just high-performance servers or processors, which satisfied ETC's needs for high-speed data access and high-performance computing; but their power, hard discs, and network features were designed in multiple redundant patterns to guarantee non-stop data access. All hardware design conforms to industrial specifications with features such as shock resistance, and wide temperature operation and humidity. Not to mention, built-in remote monitoring software which allows users to monitor the software or hardware status of all the computers spread island-wide from the central administration room."

World Class Intelligent Transportation Goes Global

As to future cooperation between FETC and Advantech, Dr. Chang said, "Apart from ETC applications in Taiwan, we hope to promote this highly precise system in other countries through the system integration influence of FETC and the embedded solution experience of Advantech, because I believe no other transportation system around the world can generate such a high KPI currently."

In addition, Dr. Chang particularly stressed FETC's contribution to Taiwanese industry and said, "Nowadays, the service platform that integrates all our systems can undertake over a million transactions every day, and can scale to several times larger if we need to. We hope more developers will have the chance to co-create new business opportunities in the intelligent transportation field." Despite going through ups and downs, and sleepless nights, Dr. Chang expressed his hope to showcase their innovation and RD capability to a wider global audience. ■

FETC (Far Eastern Electronic Toll Collection Co.)

In order to cooperate with the national transportation policies, FETC was commissioned by Taiwan Area National Freeway Bureau to set up the Electronic Toll Collection (ETC) service. FETC not only combined the best experiences from the shareholders but absorbed the superior operational strategies from the globe and imported the most advanced technology. Meanwhile, clinging to the following fundamental principles: be contingent, be truthful, and be innovative are our business approaches to provide the best ETC services.

Bicycle Rental System Completes the Last Mile

Despite some bumps in the road, this successful Bicycle Rental System now provides a smooth ride for German commuters.

By Miles Odonnel and Pictures from Fortec
Interview with Markus Bullinger, Management Board of Fortec Elektronik AG

Back in 2000, a startup company started supplying rental bicycles to commuters in Germany. These were intended to solve that "last mile" problem: how to get the commuter from the transportation station to their destination, and the original deployment of bicycles did just that. People could rent the bicycles, ride to wherever they needed to go, dismount and relock them. This was quite convenient for the renters; they could leave the bicycles wherever they wanted. And they did.

Unfortunately this was not so convenient for those who were managing the bicycles. The bikes tended to migrate out from city centers, and were not always easy to find. Once found, many bikes had repeatedly to be transported back into town. Although it was a useful service, and many people benefited, it was becoming too much for the private company to handle.

This is where the German public railway system, Deutsche Bahn (DB), became interested. They felt the bicycle service was worth preserving, so around 2000, DB bought the assets and took over the service.

DB continued with the return-where-you-like system for a while, but ultimately decided that fixed points for pick up and return, though slightly less convenient for users, made more sense from a long range viability point of view. So DB needed a robust, weather resistant, unmanned, self check-out/check-in stations, with tracking and payment

capabilities. DB selected Fortec Elektronik AG, a DIN EN ISO 9001 certified German supplier of industrial PCs and systems, to create the solution.

The Challenge

Fortec was looking for a tough system board that could withstand the rigors of life in an outdoor kiosk, with hot sunshine in the summer and below freezing temperatures in the winter, something that could work dependably 24/7 without fault or complaint. Markus Bullinger, long in charge of business operations at Fortec, and with particular oversight of embedded computing, cited the high quality of Advantech products, as well as excellent availability, and knowledgeable nearby technical support (Advantech has a support station in Amberg), as deciding factors that induced Fortec to choose the Advantech SOM-4461 to serve as the heart of their Bicycle Rental System.

Fortec designed a custom baseboard to support the SOM-4461, and coupled it with a touchscreen user interface. A UMTS router connected directly with the DB back-office ticketing system. Each bicycle was outfitted with an electronic ID and GPS tracker. Data communications between the kiosk and the bikes was via short-range wireless, so the system would be aware of returned units without the bike having to be plugged in.

An early snag in the project occurred when these short-range devices failed to communicate dependably with the UMTS router. But that happens to be one of Fortec's strengths, and engineers at Fortec developed a custom, short-range broadcast board that bridged the gap.

Fortec handled the software side too, developing a smooth interface that takes care of all aspects of the rental transaction. And to the DB system, renting out a bicycle does not look much different from selling a train ticket. It's just another kind of rentable, moving seat.

How It Works: Customer Point of View

The customer uses a credit card or a DB "BahnCard" to register, either online or at the BRS kiosk. After use, the customer returns the bike to any of the DB bike rental stations and relocks it. Billing is automatic, pro-rated according to the time of use, with a choice of "by-the-day" or "by-the-minute" rates. The basic rate is 15 Euros for a regular bike for an entire 24-hour day, with discount plans for students and frequent users. Additional revenue is generated by the sale of advertising space on the bicycles themselves.

Currently the system handles two types of bicycles: regular, and electric assisted. The electric assisted models are popular because a person can go farther and still arrive cool and sweat-free. Plans are underway to extend the travel range of the electric assisted models.

People Like the Bikes and the System Expands

"Advantech's proven technology and Fortec's expertise enabled the customer to roll out this bicycle rental system throughout all major cities in Germany," Mr Bullinger said. During the past ten years, the bicycle rental system has extended to cover Berlin, Stuttgart, Aachen, Lüneburg, Kiel, Hamburg, Karlsruhe, and Kassel, and now comprises some 10,000 bikes.

DB is now working with Fortec on an experiment to expand the rental system to include electric automobiles as well, which offer the double advantage of weather protection and extended travel reach. For eCar rental, the user gets a near-field sticker applied to her or his driver's license, and swipes that sticker for authentication at check out time. But the basics of the system are the same as for bicycles.

This successful Bicycle Rental System continues to help the people in Germany get to and from work quickly and easily—just another part of smart commuting, and another important facet of the Intelligent City. ■

Smart Coffee Vending Tastes Even Better

Perk Dynamics are changing the way we dispense coffee beverages in the retail and self-service sectors. Their ground breaking solutions increase operational efficiency and help retailers improve profits and customer satisfaction.

By Martin Marshall and Pictures from Perk Dynamics
Interview with John Sharpley, President of Perk Dynamics

Welcome to the World of Smart Coffee Vending

Incredibly, over 2 billion cups of coffee are consumed every day. Perhaps even more astounding is that this figure continues to rise. Coffee has always been the beverage of choice for today's mobile and urban workforce and as more and more people around the globe adopt aspiring lifestyles, the demand for high quality, fresh ground and brewed coffee constantly grows, trending away from lower quality instant products. Consequently, coffee shops, restaurants, and vending machines have never been busier. However, whereas vended coffee beverages from newer, smarter machines that address today's market dynamics are set to take off, offering convenience, efficiency, cost savings, and up-selling opportunities, coffee shop operations are damaging profitability in many smaller shops and restaurants due to lack of controls on production. With the current procedures in place, staff can produce drinks without payment for friends and family and even commit employee fraud.

Self Service Solutions To Go

In 2007, John and Dillon Sharpley, experts in retail management systems, set out to cure this common problem by offering a solution that would return coffee shop operations to profitability. Thus, John and Dillon came up with idea to connect an espresso machine to their retail management software that could guarantee a record of all beverages produced. Working with key espresso machine manufacturers and using high quality ingredients, they brought their ground-breaking solution to the self-service sector. Their idea was so well received they formed Perk Dynamics to share their innovation with the Cafe' Specialty Beverage Industry. Perk Dynamics has commercialized this solution, known as AutoPerk and delivered it to an industry hungry for automated production controls. Based out of Shawnee, Oklahoma, Perk Dynamics, LLC is a software development company focused on improving the process of beverage order flow to increase profits and customer satisfaction in establishments that serve coffee, tea and other specialty beverages. With AutoPerk, customers are given control to improve the consistency of each beverage, streamline beverage delivery, increase operational efficiency, and control inventory (coffee, milk and sugar type and quantity). This increases both consumer satisfaction and profits while reducing waste.

Maximum Flavor, Maximum Profit

Perk Dynamics products are designed to improve customer service, streamline operations, and provide accurate real-time data. Their self-service systems are designed for hotels, hospitals, work places, and retail spaces. The team also produces a system for table dining environments in restaurants. Their self service solutions feature an integrated POS (Point of Sale) touch panel computer for ordering and payment, an automated barista for cafe quality coffee and espresso drinks, and a streamlined touchscreen queuing system. At the core of the system, AutoPerk™ software functions as the Customer Facing Self-Checkout. It carefully controls the coffee settings, ensuring the order is properly fulfilled as well as monitoring figures for sales, inventory, and other key performance indicators. Advantech's UTC-515 Touch Computer then comes in as the HMI (Human Machine Interface) for the automated barista. A 2D barcode scanner allows customers to scan coupons and other promos while a Magnetic Stripe Reader module accepts credit cards for payment. Customers simply use the responsive UTC-515 touch screen to select their flavoring and other options for their coffee and AutoPerk takes care of the rest. Mr. Dillon Sharpley, VP of R&D of Perk Dynamics speaks to the underlying intelligence of the system, "These days, technology provides all kinds of interactive functionality, we now have touchscreen interaction and wireless connectivity, NFC and instant payments. What this means is that we can measure and control stock and therefore profit margins better than ever before. For coffee vending, this means maximum profitability without compromising on quality."

Looking Ahead

As vending machines integrate more advanced capabilities and become more connected, new features will perhaps be incorporated like telemetry, cashless payment and facial recognition, but a perfect cup of coffee will always stay the same—let's all drink to that. ■

Empowered Customer Care in Banking

The banking industry is being transformed. Thanks to branch automation management, banks using the Customer Visit System® (CVM) have improved services, personalizing the customer experience with a more friendly touch.

By Richard Ponce and Pictures form SEDCO
Interview with Mr. Ali Farah, Business Development Director, SEDCO

There are plenty of people in the bank, plenty of lines to wait in, and plenty of time to be lost waiting to get to the teller window. But on this trip, it's a little different. On the way to the bank, you remotely place yourself in queue using a Smartphone app. You walk in. The bank manager wanders over and greets you by name. Maybe she asks how your last business trip went, or how you're settling in to the new house. There's not a lot of time for talk though, as it's your turn at the window. The teller greets you by name as well and asks how the new car is running. It's all quite surreal; you might feel a bit as if the bank is being run by your best friends. When you leave, the manager asks if everything went well and says she's looking forward to your next visit. The entire experience is relaxed and efficient.

SEDCO, established in 1983, is turning this kind of customer experience into a reality. With some 60 partners covering countries in the Arab world, Africa, and Europe, the company assists its "customers to succeed by providing them with innovative, high quality, reliable IT solutions and services delivered by a friendly, efficient and professional team." In 2007, SEDCO created Customer Visit Management (CVM), a revolutionary branch automation system that focuses on all aspects of the customer visit and is tightly integrated with internal processes and back-end systems. CVM can trace its beginnings to queuing systems, but it elevates the customer visit to a whole new level. It has the ability to delight customers with a personalized touch.

CVM Connects You to the Bank's CRM Data

If you've done business at the bank before, the CVM system already knows who you are. It knows a lot about you as it identifies you and gets your data from back-end systems and your past visits. If you've signed up and downloaded the app, you can even use your phone to pre-book appointments, and receive updates via SMS. The system knows about you from the bank's CRM (Customer Relationship Management) data. The manager and teller were told you were a VIP customer, and so you were treated accordingly. For walk-ins there are self-service kiosks strategically set up to sign in, get a place in the queue, and get a printed ticket as well. While waiting, digital signage displays show wait times, information about the bank, and highlight its products and services.

CVM Helps Management Improve Relationships

CVM is a fully-integrated solution that brings together hardware and software in a platform that seamlessly connects to the bank's existing IT systems. It can connect to and access data from CRM, HR, Marketing, QA, and other core processes at the bank. These data tie into CVM's functions, allowing it to handle remote booking, customer detection, customer identification, self-service functions, digital signage displays, queuing and routing, customer feedback, business intelligence, and monitoring and planning.

CVM allows the central office to have a snapshot of all the key performance indicators and metrics for each branch, a great business tool that can identify weaknesses at the branch or employee level, and give management the data needed to take appropriate action. With metrics about wait, service, and turnover times at hand, this difficult job is greatly simplified.

Quality Hardware, Support and Distribution

SEDCO is a large player in its market. Working with Advantech, thousands of pieces have been successfully placed into operation. Mr. Ali Farah, Director of Business Development for SEDCO said that Advantech's quality, support and distribution capabilities were key attributes in SEDCO's choice of a hardware provider. Advantech's systems deliver industrial-grade reliability and superior performance in a small footprint, taking up minimal space and getting the job done. First up is its UTC-515, an all-in-one computing system equipped with a wide format, touch-based LCD panel. Key peripherals and display systems are easy to integrate and make up the backbone of SEDCO's self-service kiosks, delivering updated information through a simple, interactive interface. Next up is ARK-DS520, an advanced (ION2-based) Graphics Digital Signage Platform used to drive Advantech's DSS-series of digital signage displays. ARK-DS520 supports an integrated NVIDIA GT218 graphics module and provides full HD playback. It supports multiple displays, and numerous I/O combinations for connectivity. It also supports SUSIAccess and embedded APIs, designed to help developers quickly get to market.

Where SEDCO is Heading Next

As the old saying goes, "The customer is king." In today's world, you either have to set the bar high and deliver superlative customer performance or someone else will and you'll be left out in the cold.

The future is bright for customer-centric solutions. SEDCO is growing, and has plans to expand into new markets in CIS (Commonwealth of Independent States) and Latin America. Advantech's global presence allows it to be there to assist in that growth. Focusing on the customer and delivering high-quality, innovative solutions are keys to a successful future. ■

Enabling New Intelligent Services for the Future

With a wealth of professional experience in diverse vertical fields, Advantech is capable of enabling “Intelligence” in real products and services. Intelligent applications and services will eventually be around us everywhere in our lives.

By Wanger and Pictures from Advantech
Interview with CH Wu, Vice President of Advantech iServices & Applied Computing Group

What is intelligence? The term implies some mystery, and sparks imagination. But how to define it? When is life smart enough, and what is the basis of “intelligence”?

Actually, intelligence does not have a single, specific characteristic, and all definitions come from the habits and preferences of users. What do users need now? And what may they need in the future? Everything must be available immediately and even be ready in advance, that is the true spirit of intelligence.

Four Features to Create Intelligent Life

Automation technology has been used in a wide range of fields for many years, but the manufacturing sector is still the largest consumer of related applications. As a result, some industries, such as medical care, automotive, finance, logistics and retail, are not familiar with the latest technologies and the ways in which they can add distinct competitive advantages. CH Wu, Vice President, Advantech iServices & Applied Computing Group, noted that hardware suppliers with rich experience in manufacturing automation need to build on prior communication and complete after-sales service, rather than just providing the best hardware.

After several years of hard work promoting automation, numerous industries have implemented IT solutions to varying degrees. At the same time the “cloud” has received significant media coverage, and is no longer just a vague concept. Understanding the concept and equipping facilities with the right hardware can deliver a successful cloud implementation with intelligent applications. CH said, “Now is the perfect time to promote full intelligence in various industries.”

CH also indicated that there are at least four aspects, including mutual interaction, multi-channel service, customized functions and real-time device management that should be considered for intelligent equipment.

First, increasing the direction of the message flow is one of the characteristics of an intelligent system. For example, hospital digital signage just used to display prepared content and viewers could only read messages. Now, by combining smart technology with a kiosk, people can interact with displays as well—entering their own data to complete registration, for example.

Second, unlike traditional practices where customers are served at fixed locations, the increased popularity of network connections and networking equipment now enables services to be provided anywhere. For vertical industries, such multi-channel models are very important for their business operations, as they provide more timely and comprehensive services.

Third, regarding customized functions, even though every industry requires IT equipment, businesses and operational approaches differ widely according to the industry’s particular characteristics, market circumstances, and their own corporate culture. Therefore, customization is necessary to increase effectiveness in implementing intelligent applications.

The last feature is real-time device management. Much IT equipment is scattered throughout an enterprise and can’t be centrally managed. Examples are found in medical care in hospitals, or with automotive systems. In the first example, devices may be installed on different floors or various departments; in the second, devices used in vehicles are out and about on the road. For these situations, sending someone “out in the field” was the only way to maintain a device. But this is not effective and it leads to potential blind spots for management. Intelligent management is able to solve these problems. Through integration with communications, an in-vehicle system can be managed and monitored from a central location. Vehicle conditions, location in real-time, and other data will improve management and operational efficiency.

Fulfilling the Vision of the Intelligent Planet

Advantech is optimistic about the future of the marketplace. CH said, “We see broad prospects for intelligent development despite the different barriers to entry of various industrial applications. Our long-term efforts across all aspects of the different fields have led us to being more competitive.”

In addition, CH said that Advantech will pay more attention to making products that are in line with the needs of vertical industries. “Through cross-industry alliance, we are seeking to strengthen our expertise while closely working with partners and system integrators to accumulate professional experience and knowledge.”

Advantech will also provide full-featured “packages” instead of supplying just single products, making complete solutions for each vertical industry. For the medical industry, Advantech offers a wide range of products, including digital signage, bedside infotainment, mobile nursing carts, and medical tablet PCs.

With active promotion by governments, and positive developments from industry, intelligent applications and services begin their journey. This is consistent with Advantech’s core concept: “Enabling an Intelligent Planet.” CH believes that the vision of a smart planet will come true through the process of gradual change, and intelligent applications and services will eventually be everywhere in our lives. ■

BICOM Increases Advantech's Digital Signage Power

BICOM's software technique helps bridge the "last mile" between hardware products and customers. Advantech has both strengthened its soft power in Digital Signage, and improved market competitiveness by offering value-added services.

By Wanger and Pictures from Advantech
Interview with Jim Yeh, Vice President of Advantech Intelligent Services R&D Development

For the past two years, Digital Signage has attracted a lot of attention. Advantech has been cooperating with BICOM Information Technology, which was responsible for software design and was involved in this technological development in the early stages. In 2012, Advantech officially merged with BICOM, which has made Advantech's Digital Signage products more competitive.

Integration Leads to Better Opportunities

Vice President of Advantech Intelligent Services R&D Development, Jim Yeh, who was the former General Manager of BICOM, noted that in addition to hardware devices, software functionality is also important for Digital Signage. And since it is a new medium, only a few suppliers can provide software services. So hardware suppliers must have long-term partnerships with software vendors, similar to the cooperation between Advantech and BICOM, who face market challenges together.

After years of cooperation, the two parts of BICOM business – Digital Signage and RFID applications – were merged into Advantech's Intelligent Services Department at the end of 2012. Jim Yeh said that due to the rapid expansion of the market and more intense competition in Digital Signage, smaller companies with fewer resources have difficulty surviving, and the combination became the best choice for integrating BICOM's excellent software design team with Advantech's large-scale enterprise resources, to create a win-win business success.

With the addition of BICOM's software technology, Advantech's Intelligent Services Department is now able to provide a complete Digital Signage solution. Jim Yeh explained, "Unlike in the past, providing hardware products alone fails to satisfy customer requirements; now they need a total solution, or even a customized total solution, particularly in the Greater China market." In this situation, standardized products have trouble fulfilling market demands, and suppliers must have both software and hardware design capabilities to provide suitable products.

Diversified Applications Show Infinite Creativity

According to his analysis, the global demand for Digital Signage is increasing, and in the Greater China region this is even truer. BICOM's expertise helps Advantech design more flexible products so as to meet market trends.

As for Advantech's Digital Signage roadmap, Jim Yeh is optimistic about the retail catering and counter services, and pointed out that as technology advances, both sectors need to implement diverse functions. Digital Signage is often used to provide menus and queuing systems for catering services, but now some restaurants, such as DinTaiFung Dumpling House, one of the best restaurants in Asia, have begun to introduce more advanced solutions. "After adopting our system, consumers can make meal reservations using a Digital Signage kiosk right at the restaurant entrance," he said.

Another potential market is counter services, including banks, post offices, public institutions, and more. Digital Signage can display richer, more diverse information than traditional LED displays, including audio and visual effects. In addition, internet connectivity enables Digital Signage to serve as a private cloud terminal, so that users can manage their broadcast content via network, improving Digital Signage efficiency.

For the next step, Jim Yeh believes that intelligent technology is unlimited; it all depends on creativity. Taking the medical industry as an example, Digital Signage is mainly used as an information service device, facilitating patient registration and providing medical information. Advantech extends the services to mobile nursing carts to enhance the efficiency of medical care, and will provide other applications such as physiological measurements to make full use of technological advances.

Packages and Customized Solutions

Since position-sensing capability is a key technology feature of intelligent devices, RFID is a very important target market for Advantech as well. For example, a school's management can use RFID tags to prevent bike theft as well as delivering messages to campus administrators. This is only one of many RFID applications, and innovative ideas will extend future development opportunities.

In the future, the primary job of Advantech Intelligent Services Department will be providing various packages, along with customized solutions to supplement the product lines. Advantech packages include all kinds of standard products, which cover the common needs of users. Plentiful product categories allow customers to choose suitable packages for their businesses. If there is a customization need that requires a slight modification, this enables a system integrator to significantly reduce development time and cost. Jim Yeh emphasized that this new service model is Advantech's advantage and also benefits system integrators. ■

SUSIAccess Builds Intelligence into Embedded Computing

Built-in Remote Device Management for Intelligent Systems

By Chris Lin, Senior Manager of Advantech
Pictures from Advantech

IDC reported that “Intelligent Systems are Transforming the Embedded Industry and Driving the Value Among M2M and the Internet of Everything. Billions of new users and billions more machines will drive the intelligent systems market to over 5 billion units and nearly $2.4 trillion in revenue by 2017.”

The number of embedded intelligent systems is creating a potential future prototype for the intelligent city. Intelligent systems perform mission-critical roles in high-value applications across multiple industries such as in power plant automation or digital signage in airports, and because they are often deployed in remote locations, intelligent systems must be reliable and highly available. Advantech has been watching the prevailing trend and has designed the tools neccessary to empower embedded intelligent systems.

However, among these embedded intelligent systems, the lack of remote monitoring and maintenance applications has been noticed by embedded device vendors. This is where Advantech SUSIAccess comes in. By providing a ready-to-use remote access solution, system integrators can focus more on their own applications and let SUSIAccess take care of the protection, maintenenace and power-saving of their systems.

SUSIAccess: Built-in Intelligence for Embedded

As Advantech always position itself as the embedded platform and intelligent systems facilitator, it now announces the newest version of SUSIAccess, an innovative remote device management software preloaded into all Advantech embedded products, to power the built-in intelligence for embedded computing. By integrating Intel’s Active Management Technology (AMT) and Clickatell’s SMS gateway service, SUSIAccess 2.1 permits efficient remote management, monitoring and maintenance to reduce your total cost of ownership. The launch of SUSIAccess 2.1 provides system integrators with more flexible options for creating intelligent and interconnected embedded computing solutions.

SUSIAccess is designed to build intelligence into embedded computing applications, not only ensuring continuous system uptimes, but also reducing maintenance costs. It can constantly monitor the health of multiple devices and send out alarm notifications via e-mails and SMS messages if abnormal situations prevail. SUSIAccess 2.1 also provides other powerful utilities such as System Recovery (powered by Acronis), System Protection (powered by McAfee) and Remote KVM to protect and recover faulty systems.

Monitor Device Health Even When It’s Turned Off

By integrating Intel AMT in SUSIAccess 2.1, administrators are able to access their systems when they are powered-off or even if the OS has crashed, allowing recovery capabilities that pure software solutions cannot offer. SUSIAccess 2.1 also integrates Clickatell, a global SMS gateway service covering over than 220 countries that can send instant SMS alarms to mobile phones via internet without 3G connections. It helps administrators to stay in sync with the health of all their devices, automatically and promptly.

SUSIAccess for Real-time Remote Configuration

Customers from many different industries are already enjoying the benefits that SUSIAccess has to offer such as Chunghwa Telecom—the largest telecom company in Taiwan, which is now using SUSIAccess in their iEN solution for energy saving via digital power meters and environmental sensors. “SUSIAccess is an easy-to-use remote device management software solution to monitor Advantech IPCs in our iEN solution—allowing real-time remote configuration to ensure total system reliability,” said Qian-Huang Wu, Product Manager of Chunghwa Telecom. iEN solution uses Advantech ARK-3360 and ARK-1120 as the control gateways for data collection, and SUSIAccess remotely monitors the health of all devices and hard drives to ensure that data is always transmitted successfully.

Key Benefits to System Integrators

- **Reduced Total Cost of Ownership (TCO)**
  - Ensures system uptime
  - Gets instant support
  - Reduces maintenance & energy cost
- **Connectivity with Full OS Selection**
  - Supports Windows and Linux OS on all Advantech embedded products
  - Freely choose target OS on the device to build intelligent solutions
- **Quick Customization Service**
  - End product value add-on
  - Customizable logo and slogans
  - Functional module configuration ■

ADVANTECH

Enabling an Intelligent Planet

EKI-3000 Smart Industrial Gigabit/Fast Ethernet Switches

- Connects Gigabit Ethernet for highest performance
- Saves up to 60% power consumption for an eco-friendly solution
- Superior Self-Diagnosis minimizes network disruptions
- Port-based QoS prioritizes media traffic

EKI-3728
8-port Gigabit Unmanaged Industrial Ethernet Switch

EKI-3725
5-port Gigabit Unmanaged Industrial Ethernet Switch

EKI-3528
8-port 10/100Mbps Unmanaged Industrial Ethernet Switch

EKI-3525
5-port 10/100Mbps Unmanaged Industrial Ethernet Switch

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Driving Growth Through RISC Standards

By Aaron Su, Product Director of Advantech
Pictures from Advantech

Looking back on the history of IT development, it seemed to follow a certain pattern and then evolved into mainstream technologies and products like the personal computer. PCs emerged in the 1980s and brought about today's booming IT industry because of standardization. At the time the PC was launched, every manufacturer had its own design standards and many were incompatible with each other, resulting in a bottleneck in product development, both for hardware and software. Even though there were many solutions, no one gained a large enough market share to make new product investment. Consequently, PC industry growth was very slow and limited in the beginning, and only a few people could afford the product. But when IBM worked out the PC/AT specification with Microsoft's MS-DOS operating system and licensed it to other vendors, "IBM compatible" PCs sprang up like mushrooms and further accelerated the progress of science and technology. Through standardization, the industrial model shifted from a "customized product to serve a specific user" to "a standard product to service a wide range of customers". This transformation was a necessary step for each leading technology, and standardization was the key factor that drove its popularity.

When most people decide whether or not to adopt a new technology or product, the first consideration is the performance-to-cost ratio (P/C), which is an important factor and very easy to understand. But in fact there are many factors that affect customers' decision-making processes. For example, will this new technology be around for a long time, does it have sufficient user information and support, and is there room for future development? Those hidden elements may not be easily found by customers, but they deeply affect them. If manufacturers cannot address these issues, a new technology or product will ultimately remain a "niche" product and won't be universally adopted.

Standardization Is the Key to Success

Featuring low-power consumption, small size, and wide operating temperature range, RISC-based products offer a better P/C rate for embedded applications. However, ARM solutions are not widely applied in the real world and even though customers may want to adopt the ARM architecture, they are often unable to find sufficient information to conduct a feasibility analysis. The lack of a standard makes customers cautious about using hardware and software with an ARM architecture. For these reasons, standardizing ARM products (including hardware, software, and form factor) will not only eliminate customer concerns, but will also boost widespread adoption of RISC-based ARM solutions.

If ARM products could be standardized, customers could avoid future expansion or upgrade issues and wouldn't be tied to just a few suppliers. This will also enable a more efficient use of vendors' resources and speed up the development of ARM technology and applications. Just imagine, when subsequent ARM products are released and all support the PCI-Express interface, and relevant I/O ICs also follow the specification of the PCI-Express interface, then ARM SOC and I/O IC suppliers will be able to develop their products simultaneously without worrying about compatibility and suitability issues. In addition to functions, standardizing the size of a module's form-factor benefits customers as well. When the form factor is standardized, customers will have different options from suppliers while their I/O board or chassis continues in service; thus enhancing the effective use of resources and saving project development costs. Therefore, standardization is regarded as the key to popularizing ARM solutions!

Advantech RISC Solutions Meet a Full Range of Form Factors

Now is a critical time for RISC ARM solutions, so Advantech actively participated in the specification definitions for Qseven and SMARC to promote RISC industrial standards, and fully support the drive to create a standard specification under the SGET Association. Qseven and SMARC form factors which are gradually spreading out in the market place, target applications such as compact mobile devices which require lower power consumption, or which are powered by battery pack. MXM type connectors are used for these two form-factors for connecting functions on the carrier board, so customers are able to make their carrier board exactly fit their chassis design with the correct I/O connector location. Moreover, SMARC supports 3V~5.25V voltage, therefore customers are able to power their mobile device directly by a single cell battery (3.6 ~ 3.7V) or 5V DC input without an extra buck switch design on the carrier board. This significantly helps reduce the design effort on the customer side and increases the efficiency and reliability of the customer's mobile device. However, these standards do not yet meet the needs of all applications. Take rugged applications for example, customers may need a product with anti-vibration and anti-corrosion features as well as being able to work in an extreme temperature environment, but products based on Qseven and SMARC standards which feature 1.2mm PCB and use "golden fingers" as signal connection, are unable to completely satisfy such demands. Therefore, Advantech proposes a relatively rugged form factor to overcome this, and that form factor is RTX 2.0. By using a board-to-board connector, the RTX 2.0 standard provides 400-pins through four connectors to satisfy all kinds of application requirements. Such an approach offers better vibration and corrosion resistance than golden finger connections and can better deal with the challenges of harsh environments. The PCB thickness is greater as well; RTX 2.0 PCB has a thickness of 2.0mm to deliver improved anti-vibration and anti-bending performance. Apart from the mechanical differences, the electrical characteristics also allow RTX 2.0 to tackle varied conditions with more flexibility due to its wide-voltage, single supply input. This can reduce the complexity of system design because customers no longer need to specify particular voltages for the ARM module.

Looking to the future, there are many challenges that must be overcome before RISC solutions can be applied over a wide range of applications. As a leader in the industrial computer field, Advantech has an obligation to play an active role in this trend and believes it to be one of our tasks to focus on the establishment of standardization. We look forward to creating a simple and more robust RISC development environment for our customers.

Advantech Full Spectrum of RISC-based Platforms

Model	ROM-3420	ROM-5420	ROM-7420	UBC-DS31	REB-740
Category	RTX-COM	SMARC-COM	Qseven-COM	Signage Player	Box PC
Processor	Freescale i.MX6 Dual Core	Freescale i.MX6 Dual Core	Freescale i.MX6 Dual Core	Freescale i.MX6 Dual Core	Freescale i.MX6 Dual Core
Features	• DDR3 1GB / Flash 4GB • 24 bit LVDS / TTL • CAN / PCIe	• DDR3 1GB / Flash 4GB • 24 bit LVDS / HDMI/ VGA • CAN / PCIe	• DDR3 1GB / Flash 4GB • 24 bit LVDS / HDMI/ VGA • CAN / PCIe	• DDR3 1GB / Flash 4GB • HDMI / VGA • USB/ Gigabit LAN/ UART	• 1 Mini PCIe Socket • OPS Expansion w/ VGA, 8GPIO, 4 UART, 1 I2C, 1 I2S, 1 SATA • Supports +12/19/24 VDC-in
Dimension	68 x 68 mm	82 x 50 mm	70 x 70mm	191 x 129 x 30 mm	112 x 78 x 30 mm

CompactPCI Keeps Power & Energy Flowing- Toward a Smarter Grid

By Paul Stevens, Marketing Director of Advantech Network and Communication Group
Pictures from Advantech

The world's electricity system is undergoing profound changes for a number of reasons: among them the sharp rise in electricity consumption in emerging markets, the increase in producers connected to the network due to the liberalization of the electricity market, and the integration of intermittent renewable energy sources due to new greenhouse gas emission goals. At the same time, the electrical system must continue to meet the stringent requirements of quality and service, keeping the balance between supply and demand, and maintaining both safety and security at all levels. To meet these requirements, the electrical system is evolving in several areas, in particular in transmission and distribution, data collection and communication, and in applications and services. Smart grid technology deployment is taking place on all these levels in an attempt to modernize the network and respond to ongoing changes, while meeting the requirements of safety, quality and stability.

Smart grid technologies cover many application areas, which span the entire electrical system, from production and transport to user-specific distribution. As such, a variety of technologies are required to optimize the operation of the electrical system and provide advanced interfaces for better decision making. These include power electronics, sensing and measurement, communications, and advanced control. Some of the technologies required are still under development, such as fault tolerance, superconductivity, power storage and the deployment of more intelligent devices, while others are considered mature and are already being deployed. Although many new power electronics, communications and computer technologies are still in the research or demonstration phase, their broad deployment needs to be integrated into profitable business models. Today, the electrical system is gradually becoming fully optimized and the majority of the market's application domains have already deployed these new technologies to some extent; however one of the biggest difficulties lies in the ability to maintain or improve the reliability and security of the existing power grid while introducing cutting edge technologies.

In electrical transmission, advanced smart grid devices enable existing transmission lines to deliver maximum power and help stabilize the grid with precise power control. High-voltage direct current (HVDC) for example has evolved as the preferred technology for moving large amounts of power across long distances resulting in overall higher efficiency than equivalently-sized AC systems.

Higher efficiency means a lower transmission cost, helping renewable energy compete against other power sources. In addition, HVDC is also used to connect offshore wind farms and so facilitates the integration of wind power. HVDC transmission is used to import and export electricity as it enhances system stability, allowing the operator better control over power flow. In the future, wide area monitoring systems are expected to reduce the number of catastrophic blackouts and generally improve the reliability and security of energy production, transmission, and distribution, particularly in power networks with a high level of operational uncertainties. Finally, at the data collection and communication level, supervisory control and data acquisition systems (SCADA) analyze real-time grid conditions, providing data for fast power adjustments.

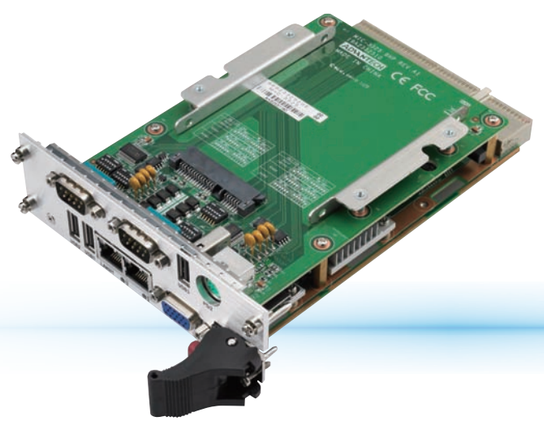
Power Substations

Power substations are key to transforming the voltages produced in generating stations to a higher one for transmission and then back to a lower one that is ready for use in our schools, local businesses and in our homes. And as these substations are generally situated very close to where we live, electricity companies also take extra care to ensure that they are secure both from a physical perspective as well as a functional one. Today's control systems provide increased automation and monitoring of conditions at substations and often make use of fiber-optic communications for high-bandwidth transmission between the central control room and substations. Modular circuit breaker monitoring systems for example are designed to facilitate all the measurements associated with the operation of a substation's switchgear bay. The monitoring equipment in the local control bays is close to the transducers and other signal sources while all of the bay data is transmitted along a fiber cable using TCP/IP. Overall this makes wiring simpler and provides a very flexible interface for the connection of most substation and external networks. CompactPCI-based industrial computer system and data acquisition cards can provide the data capture and storage facility required for substation monitoring. A range of transducers provides the input to signal conditioning modules, which provide data to the acquisition cards. The modules set off alarms in the event of performance limits being exceeded. In order to overcome noise interference and to eliminate ground loops, a radial, fiber optic communications system connects the individual bays to a central data server in the control room. The server typically provides a visual description of alarms along with a monitoring system data and connects via LAN, WAN, or modem to allow remote access and the overall substation performance to be assessed. Fiber communications also allow an increased number of higher definition video surveillance cameras to be installed at many unmanned power substations for enhanced monitoring and control purposes in addition to a traditional SCADA application monitoring data and alarms.

Enter CompactPCI

For over a decade, power and energy integrators have been deploying rugged electronics systems to monitor power substations using various embedded technologies, and for some key players CompactPCI was a technology of choice. CompactPCI is a very high performance industrial bus based on the standard PCI electrical specification in rugged 3U or 6U Eurocard packaging, and unlike its desktop cousin, uses a high quality 2 mm metric pin and socket connector that meets IEC and Bellcore standards. As CompactPCI boards are inserted from the front of the chassis and I/O can be broken out from the front panel (or the rear) this makes it ideal for installation, cabling and maintenance requirements in substation environments. CompactPCI supports 8 slots, allowing additional processing or I/O to be added as required and offers a packaging scheme that is well suited for use in industrial applications.

Just like in the telecommunications sector, several power and energy OEMs have adapted their own proprietary systems to integrate with CompactPCI technology in a proprietary fashion. This allows them to leverage commercial off-the-shelf technology for faster development and timely upgrades to the latest technology in the same way as a standard user. It also gives them the ability to upgrade fast in case of component or



manufacturer obsolescence. Advantech has been serving mission critical industrial markets with CompactPCI blades and systems for over 10 years, assisting industrial OEMs and network equipment providers to successfully design and integrate CompactPCI.

At Advantech we apply solid lifecycle management processes to handle component obsolescence and know how to step in when a key supplier announces the end of a product line and a blade that meets the same form, fit and function is urgently required. Our CompactPCI team understands the impact this can have on a customer's product portfolio and we are committed to providing long-term technology support and timely new product introductions so that our customers can choose when to upgrade their equipment based on strategy and market demands, well ahead of silicon end-of-life scenarios.

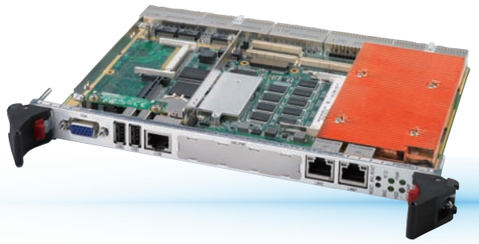
Customized COTS (C^2OTS)

We also know that no two suppliers' seemingly identical CompactPCI blades are exactly the same, and that features may differ in various ways like a missing I/O port or connector or often custom IPMI features which aren't implemented. That's where our Customized COTS program comes into play. Because we design our standard products with later customization in mind, our processes are tailored to support the Customized COTS business model.

We offer significant flexibility over a "standard-product-only" roadmap by supporting changes ranging from branding, cost optimization, mechanical and schematic changes, as well as the integration of a customer's proprietary IP.

MIC-3395 6U CompactPCI Blade for Performance

The MIC-3395 6U CompactPCI SBC offers a seamless upgrade path to OEMs with higher levels of performance and richer features. The blade supports the Intel® Core™ i7-3555LE, i7-3517UE and i7-3612QE processor SKUs. It fits in a single 4HP slot with memory capacity up to 4GB



on board DDR3 with ECC support and one SO-UDIMM module for up to a further 8GB. I/O expansion is ensured via a PMC/XMC slot, whilst mass storage is available with onboard 2.5" SATA-III support, up to 8GB onboard Flash plus optional CompactFlash® and RTM-based SAS storage options. Six independent gigabit Ethernet ports cater to a wide range of integration options with dual GbE connectivity to front, rear and PICMG 2.16 ports.

MIC-3325 3U CompactPCI Blade for Low Power

Advantech's MIC-3325 is a 3U CompactPCI dual/single core processor blade based on the Intel® Atom™ processor D525/N455+ICH8M two-chip platform. It provides high performance with 2 cores and 4 threads of processing power at lower cost, and fully utilizes the I/O features of the Intel® chipsets, including an integrated memory controller (IMC), integrated graphics processing unit (GPU) and integrated I/O (IIO).

The low power Intel® Atom™ processor makes operation in extended temperature ranges possible. The on-board CPU and memory provide less weight and higher shock/vibration resistance than socket devices allowing the MIC-3325 to be used in mission-critical applications such as military and defense, transportation, test and measurement, as well as critical data acquisition & control applications in power and edge systems. The MIC-3325 integrates the Intel® ICH8M as the PCH which provides extensive I/O support. An integrated gigabit Ethernet Controller can operate at multiple speeds (10/100/1000 Mb/s) in either full duplex or half duplex mode. A flexible 8HP extension module design provides the MIC-3325 with additional flexibility and I/O connectivity.

We believe that the C2OTS approach is critical to the long-term success of each of our customer's CompactPCI deployments and have adapted our development and manufacturing strategies to encourage customization innovation, delivering complex CompactPCI products based on standard off-the-shelf models which can be uniquely tailored to meet each customer's specific needs. With Customized COTS Advantech can help keep many CompactPCI based designs at the core of mission critical operations in sectors such as power and energy, well in to the future. ■

Advantech Video Wall Controller Solutions

Powered By Matrox® Mura MPX Series

matrox Graphics for Professionals Powered by Mura MPX™

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Advantech Video Wall Controller

An Advantech video wall controller is designed for video wall applications.
Being strictly validated by the Matrox laboratory, Advantech video wall controller features
Mura MPX Series compatibility, and industrial reliability, key characteristics are listed below.

- **Industrial Reliability:** System can run stably under 40°C temperature.
- **BIOS Optimized:** Multiple Mura MPX cards can be recognized by the system and function well.
- **Thermal Optimization:** No thermal issue even when multiple Mura MPX are installed in the system.
- **Data Switch Optimized:** Video captured can be displayed anywhere on the video wall.
- **Power Solution Optimized:** Power supply is sufficient for the system to carry multiple Mura MPX.
- **Remote Management:** A remote administrator can monitor and control the system by network connection.

8-Output Solutions

AVS-240
- Supported: 2 Mura MPX-4/4
- Inputs: 8 Analog/Digital
- Outputs: 8 Analog/Digital
- Intel® Xeon® E5-2400 Series
- Dimension: 482 x 177 x 479 mm (19" x 7" x 18,9")

AVS-290
- Supported: 2 Mura MPX-4/4
- Inputs: 8 Analog/Digital
- Outputs: 8 Analog/Digital
- Intel® Xeon® E3-1200 Series
- Dimension: 200 x 320 x 480 mm (7,9" x 12,6" x 18,9")

20-Output Solutions

AVS-540
- Supported: 5 Mura MPX-4/4
- Inputs: 20 Analog/Digital
- Outputs: 20 Analog/Digital
- Intel® Xeon® E5-2600 Series
- Dimension: 482 x 177 x 479 mm (19" x 7" x 18,9")

AVS-541
- Supported: 5 Mura MPX-4/4 & 10 Mura MPX-V16
- Inputs: 20 Analog/Digital & 160 Analog
- Outputs: 20 Analog/Digital
- Intel® Xeon® E3-1200 V2 Series
- Dimension: 482 x 177 x 657 mm (19" x 7" x 26")

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Turnkey Signage Solutions

The Key to Accelerating Signage Deployment

By Jason Kao, PM of Advantech Digital Signage Platform
Pictures from Advantech

From traditional promotions to the emerging digital media, Digital Out Of Home (DOOH) applications have been used widely in various fields, and will also significantly grow in the next few years.

According to the latest report from MarketsandMarkets, the global digital signage market generated $3.95 billion in 2011 and is estimated to go to $13.2 billion by 2016; at a CAGR of 27.29% from 2011 to 2016 due to a rise in awareness and a decrease in display prices. Since the total market will be finally hitting the price sweet spot with the double-digit growth and average cost down in the coming years, most survey companies believe that it will spur a booming ecosystem of developers, manufacturers, retailers and consumers in digital signage applications. Simultaneously, the retail vertical sector is the highest by volume and is the most noteworthy field based on the statistical forecast. In order to keep up with market developments, System Integrators have to focus on the latest technology trends and look for solution designs that make their applications more valuable to users so as to capture such business opportunities in time.

Remote Management vs. Cloud Service

One of the virtues of digital displays is that they can be placed anywhere in a retailer's store for branding, merchandising, promoting specials, and entertaining customers, so remote management is one of the key challenges for retailers and developers. Meanwhile, displaying vibrant messages on the screens to excite customers, improve their shopping experience, and further increase sales needs powerful, dynamic content management to providing the right message to the right person at the right time. As a result, qualified digital signage that not only supports rich media for dynamic content processing, but also offers remote or centralized management (covering content, as well as hardware and software) is regarded as the best solution to satisfy what this market demands and achieve the goal of effective remote control.

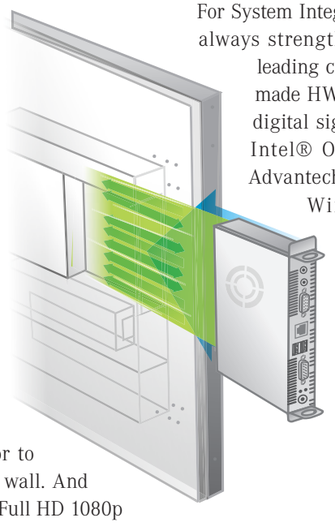
Fortunately, the networked IPC-based player with Cloud service can really solve this issue. As a pioneering yet efficient approach to business operations, the Cloud-based solution has recently been gaining more attention than ever in the digital signage industry. By utilizing the Software as a Service (SaaS) concept, the IPC media player equipped with Industrial Cloud Services enables vendors to centralize monitoring and managing of remote embedded devices in real time, and even to reduce their maintenance costs and manpower. And providing Design-in Services also lets System Integrators easily build up customized, intelligent systems as well as helping them to focus more on their own applications.

Hitting Game-winning Shots

Today, digital signage continues to evolve and create more diverse features whether it's in shopping mall, hotel, airport or restaurant, stimulating more demand for video walls or multiple displays to gain better presence in the competitive market. In response to this, digital signage box PC provides a powerful graphics engine to support multiple independent displays or to connect several monitors together in a video wall. And each independent display output must handle Full HD 1080p content to ensure the best display quality.

As displays get thinner and are mounted closer to the wall, the digital signage box PC, which is usually mounted behind the display or plugged into the display slot, also has to conform to the ultra slim size trend. In the first half of this year, Intel® introduced its newest ultra small form factor platform which is called the "Next Unit of Computing" or NUC. The platform, which may be officially launched in the second half of 2013, measures just 4 x 4 inches and features an Intel® Core™ family processor socket (Core i3/i5), two RAM SODIMM slots, two mini PCIe slots, support for HDMI, USB 3.0, Thunderbolt, Wi-Fi, and Bluetooth. This smaller, cutting edge platform will soon be available on the market, and its super compact-size box PC with advanced functions should better suit a variety of installation environments, inevitably leading another wave of digital signage applications.

Another technological trend is toward ever more interactive applications. A bevy of interactive features like gesture recognition and touchscreen are fueling growth in the interactive digital signage market. Taking the shopping mall as an example, customers can virtually try on clothing via interactive displays, controlling the device simply by moving their hands in the air. All these interactive functions can be effortlessly implemented through the signage player with Microsoft® Kinect technology. Along with a public audience that enjoys using new technology to get information and perform transactions, a similarly innovative approach can be widely applied in other retail stores or public spaces, further pleasing customers, promoting the vendor's products, and urging consumption.



Give Your Project a Head Start

For System Integrators, quick response to market needs always strengthens your competitive position. Many leading companies are already introducing ready-made HW/SW to help developers implement their digital signage applications. For some examples: Intel® OPS (Open Pluggable Specification), Advantech SUSIAccess for remote management, Windows® Embedded for multi-touch and motion sensor, Acronis Data Protection, McAfee System Security, etc. Integrating these HW/SW packages by yourself is not the best way to design digital signage applications however. A turnkey solution and customized services which provide reliable hardware, embedded OS, trustworthy management software, and network services can really accelerate your project implementation process and relieve the burden of compatibility testing.

Your Best Partner in Digital Signage

As technology continues to evolve with and affect customer behavior and user experience, digital signage is bringing a historical shift to retailers. Advantech knows that quality and reliability are invariably more important than other considerations for System Integrators, so we provide industrial-grade devices with application-ready solutions to meet your needs. Among Advantech's various turnkey solutions with customized services, you can always find a suitable IPC-based player for applications such as HD or Full HD, stand-alone or multi-display, slot-in module or all-in-one platform, small size or ultra slim. Advantech is committed to longer product life cycles and customer service as well. In addition to comprehensive product lines with a quality guarantee, Advantech's worldwide sales bases and technical teams offer dedicated support to deliver your solution to the market faster. ■

Rotating the World- Cycling with Advantech @30

By Flora Wu, Specialist of Advantech Corporate Citizenship Programs
Pictures from Advantech

Because this year is Advantech's 30th anniversary, we wanted to do something special to highlight some of our core values like LITA-altruism and good to great, so Advantech decided to initiate, "Cycling with Advantech @30", an event to connect people through cycling in cities around the world for enhancing cohesion among staff and partners. Currently, 27 cities in total responded, and by the year end there will have been more than 30 cycling events around the world celebrating Advantech's 30th anniversary.

Cycling with Advantech @30 celebrates reaching a new landmark . A cycling metaphor visualizes a gear wheel that is constantly rotating forward, which implies Advantech will keep focusing on its core business values whilst pursuing sustainable development going forward. Since the first global cycling activity kicked off in Taichung on Jan. 5th, 27 cities in total, including Shanghai, Seoul, Taipei, Melbourne, Moscow, Bangalore, Munich, Tokyo, Irvine, Bangkok, Singapore and many others have already held 28 cycling events which mobilized more than one thousand participants all riding bicycles to show the world their passionate commitment.

Cycling with Advantech @30 was not just about enjoying cycling though, it also integrated local traditional cultural activities such as visits to hot springs in Japan, where partners in bathrobes were invited to enjoy a traditional Japanese diets on tatami. While in Brazil, partners held up national flags of every country, representing global joint participation, and some colleagues even celebrated Advantech's birthday through skydiving. In Australia, they presented custom cupcakes with Advantech cycling logos on them. In Germany of course, naturally they couldn't go without beers, and in Dubai, participants rode on bicycles as well as camels, whilst in Xi'an, cyclists rode on the ancient city walls. In a nutshell, each of these bicycle events was carefully designed and full of creativity.

Mary, a colleague who participated in the Japanese event mentioned that she was particularly touched by the sense of achievement upon arrival after a long trip and the sense of family togetherness. In Brazil, colleague Van summoned up the courage to skydive and said, "It's all for Advantech - but I will never do it again!", while Stefanie from Dubai said the event that deeply impressed her was the outdoor evening banquet at desert edge and said she felt especially happy to be able to enjoy the exotic atmosphere with customers and partners.

Every carefully-designed cycling event helped realize Advantech's spirit to pursue an altruistic and beautiful life and participants had lots of fun as well as gaining a deeper understanding of Advantech's culture. Hand-in-hand with all of Advantech's important stakeholders, Cycling with Advantech @30 will stay in everyone's memory for a long time. ■

Daren Teo

Sales Engineer
Advantech Singapore

Hi my name is Daren Teo from Singapore. I first joined Advantech in May 2011 and was assigned to AOnline as a Sales Engineer. As you know, Advantech offers a very wide range of industrial products for different vertical markets so I was very grateful that I was given this opportunity because it enabled me to instantaneously pick up a lot of product knowledge from daily customer enquiries. Apart from that, I have also learnt how to manage customers from different backgrounds/industries by listening to their problems. I've always thought that it was important to have a better understanding of what they needed and it made me very proud to be able to provide them with complete solutions that fulfilled their needs. Like most of you, I believe that gaining high levels of customer satisfaction is an essential key to business success because satisfied customers are most likely to make repeat orders if they are made to feel special.

Nevertheless, it is an undeniable fact that the skill set and knowledge I've acquired was a solid foundation for me to advance to Key Account Sales, and I'm glad that I made the right decision for my personal career growth.

Though sometimes we encounter obstacles in our work, I'm thankful to have such a great and supportive team here in Advantech, regardless of which region you are from.

I appreciate the good sense of team spirit within Advantech especially the encouragement and guidance from management, so I would personally like to thank everyone for making Advantech a really great working atmosphere!

Hi everyone, I am Minnie Qiu, Sales Director of Embedded System Group, in charge of ES business in North China. So far, there are 21 sales people in our team actively engaged in Beijing, Tianjin, Henan and Hebei, with sales achievements of as much as RMB 213000,000.

I joined Advantech in Dec.,1994, when there were only around 10 people in the Beijing office. 19 years later, more than 300 staff are now working in this building. Over the past 19 years, I have worked as a RMA Engineer for 5 years, mainly doing maintenance of I/O products; afterwards, I transferred to the IAG sales team and in 2004, I got the chance to lead the channel sales team in ESG, and now I'm taking care of the whole sales team in North China. I am grateful for this great opportunity through which I always gain new experience and move forward.

I really believe in the phrase, "no pain, no gain", and that nothing can be done well without you setting your mind fully on it. I am excited to lead this young team with vigor and vitality, and encourage them always to try their best, because their efforts will eventually pay off some day.

Minnie Qiu

Sales Director
Advantech China

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Loc Bui
Project Manager
Advantech Cincinnati

Hello everyone and greetings from Cincinnati, Ohio. My name is Loc Bui. I am the Project Manager for ANA-DTOS in Cincinnati, Ohio, and I have worked for Advantech since 2003.

I enjoy working in the DTOS team because of our capability to customize all non- standard requirements for customers. We specialize in unique products that meet the customer's exclusive needs. There are always new ideas and innovations which our team strives to implement. Sometimes we have an aggressive time schedule, but delivering customer satisfaction is what motivates and challenges us.

I am grateful to be a part of Advantech professionally and personally, and working for the DTOS team is a rewarding experience.

I have been married for 20 years with 3 children, and I am very thankful for the support and understanding from my family. I enjoy relaxing, watching sporting events and spending time with my family, including my extended family.

Bonjour, I'm Paul Stevens from Advantech NCG Marketing based in la belle France. I'd like to take this opportunity to extend my warm greetings to all Advantechers everywhere. I've had the immense honour to be with Advantech for 11 years now and have enjoyed every minute, every challenge and every cup of coffee I drank from the AFR espresso machine. I'm a travelling Brit who lived in Belgium and Germany and moved to France back in the 1980's to discover if there was more to life than warm beer, corned beef and vinegar flavour crisps. Luckily there was! So as I progressed in life I discovered French cuisine, philosophy, the art of making and tasting wine and more recently my first grandson, Nathan. I have been fortunate to be able to participate first hand in "la belle vie" and today I think I've finally been adopted by the French as they allow me to cook for them and select wine for them in their restaurants. Santé! I also enjoy the beautiful life at Advantech where my fellow NCG colleagues and I cook up some pretty challenging marcom plans and work closely with the leading silicon manufacturers to align on strategies and go-to-market messaging. One of our objectives in NCG marketing is to identify and demonstrate where the key elements within the world's network infrastructure can benefit from Advantech NCG enabling technology. Although the communications infrastructure is very intricate and complex our goal is to explain what makes each and every element tick, why it is essential and how Advantech adds that special touch which makes our services unique and sets us apart from our competitors. For me it's all about accelerating network platform evolution to help the world connect, communicate and create.

Paul Stevens
Marketing Director
Advantech France

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Cycling with Advantech @30

In order to celebrate Advantech's 30th Anniversary, we will hold a cycling program in over 30 cities worldwide to communicate our altruistic LITA philosophy and our commitment to talent development. In addition to expressing Advantech's philosophy, we would like to bring Advantech worldwide members and partners together to fully realize the corporate vision of Advantech Beautiful Life.

為迎接研華30週年，並傳承研華30年來利他、專注、團隊合作與人才培育等核心價值觀，我們將透過「Cycling with Advantech @30」腳踏車活動串連全球，凝聚全世界研華同仁及夥伴們的向心力，落實利他精神與企業社會責任，並與全球夥伴們攜手轉動研華美滿人生的企業願景。

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