Patient Infotainment Terminals
Enhancing the Hospital Stay Experience

- Hospitals
- Medical Centers
- Treatment Centers
- Elderly Care Centers
- Home Healthcare
The Emergence of Patient Infotainment

Patient infotainment refers to a variety of “bedside terminals” that allow patients to do anything from watching movies and TV, making phone calls, playing games, or communicating via the Internet. They can also be used for email, web browsing, accessing hospital intranets, etc. If medically advisable, even work, infotainment terminals may also be used to alert staff, call for help, and operate beds, lighting, curtains, and other installations. Infotainment terminals may be used not only by patients, but also by medical staff and care providers. The latter may use them to look up electronic patient records, lab results, tests, monitor vital signs and other signals, document observations and changes, and more. To facilitate these functions, PITs may include RFID, digital cameras, smart card readers for data capture and identification purposes, and other peripherals and sensors. What this means is that a single integrated solution can provide digital entertainment and clinical services, as well as communication to the point of care.

Hospitals / Medical Centers

The all-in-one bedside terminal makes hospital stays easier by providing multimedia entertainment and communication choices. The terminal also benefits medical staff by providing secure remote access to electronic patient data, with optimized hospital workflow aiding in the determination of professional diagnosis. Advantech patient infotainment terminals enable hospitals to deliver a better patient care environment by providing eLearning, communication, access to clinical solutions and digital entertainment—all at the bedside. Prior to developing the standard bedside terminal series, Advantech worked with global solution partners helping them install custom patient infotainment terminals integrated with medical IT systems.

Treatment Centers

In treatment centers, no matter whether they are dental clinics, dialysis centers, or beauty care clinics, there is always a need to meet client satisfaction as a benchmark of clinic performance. To create a pleasant and relaxed environment for both the treatment receiver and caregiver, Advantech’s bedside terminal is able to accommodate a person lying in a chair or bed as well as the work going on in the room. With all the instruments at hand, the medical personnel can work effectively and continuously without losing contact with their patients. With a touch panel terminal installed at each bedside or chair side in a treatment center, patients can obtain a variety of information, including treatment results and previews or explanations of treatment by disease. Information by disease.

Elderly Care Centers / Home Healthcare

The group with the greatest need for elderly centers and home healthcare services also demonstrates the greatest variation in their ability to use electronic devices. Ease of use is critically important for devices used in home and senior care environments. Human-device interactions, if properly directed, will enable seniors to play a greater role in their own care. Patient terminals have proven easy to install in cribs where they can be brought to residential areas. With them, the elderly can communicate with friends and family, receive personal health information, listen to messages from their communities or medical providers, and set personal alarms as reminders for taking medicine.

Hospitals / Medical Centers
- Bedside entertainment programs
- Communication and Intranet services
- Service on demand applications
- Remote patient data retrieval

Treatment Centers
- Wide viewing angle and sharp images for diagnosis and discussion
- Photo, video, and multimedia display
- Advertising and educational services
- Video capture

Elderly Care Centers / Home Healthcare
- Video communications for easy interaction
- Personal alarming & telecare monitoring system
- Emergency call
- Community service bulletin
In Touch with Patients

Benefits & Business Opportunities

Exploring New Revenue Streams

In our private and business lives we have become used to paying for a variety of electronic and information services such as cell phone or smart phone voice/data internet broadband access; WIFI hotspots; cable; satellite or HDTV; DVD and Blu-ray disc rentals; and downloadable content; as well as pay-per-view and premium content. Airports, airlines, hotels and other venues and industries have been offering infotainment products and services for years, and they are using them to increase customer satisfaction as well as to create new revenue streams. Hospitals and other healthcare facilities are different, of course, but there is no reason why specially designed infotainment products and services could not be used to improve the patient experience as well as streamline and improve patient care in the process. This is a largely unexplored win-win situation for all involved—hospitals, patients and the VARs, contractors and system integrators who will find in-hospital and patient infotainment a very attractive growth industry.

Win-Win Approach

Benefits to Patient:

• Receive personalized entertainment
• Have access to news, shows, movies
• Communicate via IM, chat, Skype, etc.
• Text/tweet
• Participate in Social networks
• Look up/education/research
• Eliminate needless boredom
• Remain productive and on top of things
• Remain accessible to friends and family
• Access to medical information and charts
• Quick way to get help and assistance

Benefits to Hospital:

• Increased customer satisfaction
• Patient empowerment
• Competitive/marketing advantage
• Patient record mandate
• Diagnostic assistance
• Streamlined patient care
• Improved communication
• Possible revenue stream: Access fees
• Possible revenue stream: Rentals
• Possible revenue stream: Pay-Per-View
• Possible revenue stream: Premium Content

Application Potential:

• Hospital services/directions
• Menus/special order
• Promotional videos
• Internet access
• Digital phone
• Infratnet access
• Movies-on-demand
• Bed administration
• Accounts and billing
• HIS reporting/surveys
• Electronic drug charting
• Educational programming
• Nursing observation assistant
• Electronic patient records (EPR)
• Computerized physician/provider order entry (CPOE)

Bedside Infotainment and Satisfaction

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• Possible revenue stream: Rentals
• Possible revenue stream: Pay-Per-View
• Possible revenue stream: Premium Content

Obtain educational information:

Patient specific educational multimedia programs can be delivered to the patient for information related to their medical needs.

Alleviate anxiety:

Provide TV service, movies, and computer games to the patient to help alleviate anxiety and stress due to their medical treatment.

Stay connected:

The built-in webcam, along with internet access, can help a patient stay connected while they are out of work and away from family

Productivity and Service Quality

Increase working efficiency:

Medical staff can perform patient care while accessing and updating a patient’s medical record at the bedside, reducing paperwork and possible transcription errors.

Improve data accuracy:

The onboard RFID module can be activated for accurate medicine tracking and patient medical record access, reducing patient identification errors.

Achieve rapid ROI:

The bedside terminal will improve and maintain patient’s satisfaction about their hospital experience. Additionally, a wide range of on-demand movies, television, internet, and video game can generate additional revenue for the hospital, achieving a rapid ROI.
Patient Infotainment Terminals Bring Benefits to the Norway Hospitals

Location: Norway

Customer: St. Olav Hospital and New Ahus Hospital

Introduction
In 2002, the St. Olav Hospital in Trondheim, Norway, was beginning to show its age. A decision was made to design a new hospital on the existing site from the ground up, to be built over a ten year period. The administration wanted a hospital that was fully patient-centric. Their vision was to have “secure information available to the right person at the right time”. In October 2008, another newly built hospital in Norway will open. For this hospital, the New Ahus, the vision is to construct a “paperless hospital”. Medical and non-medical work processes will be all digitized. Building new hospitals requires partners that deliver tomorrow’s technology today. Advantech, working with its partner Imatis to design and integrate a total solution, is able to translate customer vision into reality.

Solution
• A terminal next to every bed”, was one of the defined requirements from the St. Olav and New Ahus hospitals. Advantech and Imatis collaboratively developed the bedside terminals, using Advantech’s Patient Infotainment Terminal, a fanless Intel Celeron M 1.06 GHz processor-based system, with customized software applications by Imatis. The Patient Infotainment Terminal with its user friendly design and interface is a multipurpose terminal that serves the patients’ needs for entertainment, information, communication and environmental control for room lighting, air conditioning and blinds. And while the terminal meets patient needs, it also meets the needs of medical professionals by providing secure bedside access to patient records, facilitating better patient care. Advantech’s Patient Infotainment Terminal offers many features to the bed-side care environment. It has a cleanable housing, suitable for use in a medical care facility. It can easily be mounted with a swing arm and cable, saving space and providing easy access. The fanless design operates noiselessly, and the Patient Infotainment Terminal has an emergency call button for Service-on-Demand (SoD). In addition to these features, the interactive design of the Patient Information Terminal provides patients with a rich multimedia experience. An Embedded CPU utilizing Windows XP provides performance and stability. The user experience is enhanced by use of a touchscreen display, and the I/O expandability of the system provides for a broad selection of AV interfaces. By the end of 2008 there were 880 Patient Infotainment terminals at the St. Olav Hospital and 600 at the New Ahus Hospital – delivered in partnership by Advantech and Imatis. By June of 2009, Advantech delivered a total of more than 2,200 terminals to the customers.

System
• System TV and Radio over IP
• Video
• Internet / E-mail
• Telephone (VoIP)
• Information
• Light control
• Patient signal / Nurse Call
• Games-Xbox

Benefits
• Higher patient satisfaction
• Patient empowerment
• Shorter hospital stays
• Improved communication
• Patient stimulation
• Effective workflow
• Integrated nurse’s channel in the terminal
• Enables specialized notifications to personnel for patient requests like drink or toilet needs.
• Application content can be configured to patient need and situation.
• Content moves with the patient from terminal to terminal throughout hospital departments.

Bedside Infotainment Terminals Create Service Differentiation for a Renowned Hong Kong Hospital

Location: Hong Kong

Customer: Hong Kong Sanatorium & Hospital

Introduction
The Hong Kong Sanatorium & Hospital, with the motto “Quality in Service, Excellence in Care”, is a general hospital owned by Hong Kong Sanatorium & Hospital Limited, a private sector enterprise. The hospital was founded in 1902 with the mission to provide patients with a high standard of health and medical care, using the best equipment available, and supported by expert staff. The hospital with its great reputation attracts celebrities and other well-to-do patients, offering a range of hospital care including general outpatient, treatment centers, clinical diagnostics, and a host of specialist services. Recently they have completed Phase III construction of their Li Shui Pui Block. This 38 story tower was renovated floor by floor, with the objective to create a high-tech, paperless facility, offering premier service and medical treatment. Highlights of the new block include a nuclear medicine department; a pediatrics ward and cardiology center; radiation isolation and low infection wards; and private, semi-private and general patient wards. The hospital turned to Advantech for a solution to meet their objectives during the renovation.

Solution
Hospitals in Hong Kong face fierce competition in both the private and public sectors. The Hong Kong Sanatorium & Hospital wanted to differentiate itself by offering premier services to patients to make their stays more pleasant, while at the same time providing a means to improve medical treatment, reduce errors, positively identify medical staff and their patients, and have access to information readily at hand. Advantech’s Patient Infotainment Terminal (PIT) was selected to meet the hospital’s needs. The Patient Infotainment terminal is a state-of-the-art multi-function device capable of delivering TV, films, radio, VoIP phone, SMS, web and email, and other services to patients. From sales, to selection of a software solutions partner; to installation and deployment by GE Healthcare, the systems integrator, Advantech assisted in the delivery of a total system solution. During the Li Shui Pui Block construction, Advantech’s PIT terminal was integrated into each area, creating a paperless, high-tech and modern infrastructure which allowed the hospital to offer advanced medical services in a pleasant environment. The hospital installed over 450 systems in semi-private and single rooms, the general ward, the pediatrics ward, and the ICU, tailoring the software to meet the specific needs of each area. In the pediatrics ward, for instance, children have broadband internet access, TV and games. And in deluxe patient suites which more resemble hotel rooms than hospital rooms, PIT terminals provide access to Satellite TV, Internet, and patient information. Medical staff members have paperless access to information and patient records after identifying themselves with the PIT’s SIM card reader.

System
Advantech Patient Infotainment Terminal (PIT) is an Intel based 17”, fanless touchscreen PC. It mounts next to a patient’s bedside using 75/100mm VESA standard mounting holes. PIT products have an IP65 certified, rubber-sealed front panel, an IPX1 dripproof rating, and carry UL60601-1/EN60601-1 medical certifications.

PIT products feature a 5-wire resistive touchscreen panel (50 million touches), RFID and smart card reader, microphone, and 1.3 megapixel CMOS camera. The RFID reader can read a patient’s wrist band and the smart card reader identify hospital personnel. High resolution displays enable the viewing of X-ray images and other graphics right at the patient’s bedside. PIT products are internet-ready, and can deliver a variety of entertainment and communication options to patients, while serving hospital staff in providing better medical service. During renovation at the Hong Kong Sanatorium, hospital planners installed the PIT system with accessories including a handsbet, remote controller, earphone, keyboard, and barcode scanner.

Benefits
• Communications and web access
• Personalized entertainment
• Education and research
• Remain productive
• Reduces boredom and increases satisfaction
• Positive ID of medical staff
• Access to medical information
• Quickly reach medical personnel
• Streamlined patient care
• Competitive differentiator
PIT-1702 Patient Infotainment Terminal

The PIT-1702 is an all-in-one bedside terminal that makes hospital stays easier by providing multimedia entertainment and communication choices, and also benefits medical staff by providing secure access to electronic patient records as well as facilitating professional diagnostic assistance. The product was designed to improve the hospital patient care environment by enabling education, communication, access to clinical solutions and digital entertainment—all at the bedside. Running Microsoft Windows XP Embedded or Linux on Intel Celeron M or Core 2 Duo processors, the PIT-1702 has a 17-inch touchscreen with 1280 x 1024 pixel resolution, three USB ports, an integrated mini-PCI WiFi module, an earphone jack, a microphone and an integrated CMOS camera. An optional digital video TV tuner, wired remote control, and phone handset allow the fanless PIT-1702 to be configured for numerous entertainment, diagnostic, information and communications applications including video phone service. RFID and a Smart Card reader facilitate security and quick identification checks. Prominent LED indicator lights and a nurse call button help alert hospital staff. Featuring a slim, clean, space-saving design as well as IP65 front panel sealing, a drip-proof housing, and VESA-compliant mounting methods, the easy-to-clean and disinfect PIT-1702 is uniquely suited for hospital environments.

PIT-1501W Patient Infotainment Terminal

The PIT-1501W is a state-of-the-art multi-function patient infotainment terminal with a 16:9 aspect ratio wide-format display that provides HDTV standard 1366 x 768 pixel resolution and therefore allows optimal viewing of high definition television programming with the optional digital TV tuner, as well as video and movies that are all moving towards the 16:9 standard. The device is powered by low-voltage, extremely efficient Intel Atom Z5xx series processors, enabling silent, fanless operation and very low power consumption. Weighing less than ten pounds even with the optional handset, and being just 2.5 inches thick, the compact PIT-1501W can be used and mounted just about anywhere. Based on the Windows XP Embedded OS platform or Linux, the terminal can be customised to provide a wide variety of entertainment, diagnostic, information and communications services. Like all Advantech patient infotainment systems, the camera-equipped PIT-1501W is rugged, well sealed, easy to clean and disinfect, and offers a variety of safety and security features such as LED indicator lights and nurse call button as well as RFID and Smart Card readers.

Why Advantech for Patient Infotainment Projects?

- Over ten years experience in medical markets
- Dedicated medical R&D team of engineers
- Strict revision control and design reliability
- Serving the top 10 global medical companies
- Global logistics and RAM services with local support
- Extensive customization capability from board to system level
- UL60601-1/EN60601-1 certified
- ISO 13486 certified
- Vast experience with global healthcare market regulations
- IP65/IP6X level sealing
- Longevity and superior warranty/service options
- Multi-national company with worldwide presence
- Ecosystem partnership for patient infotainment software development

Patient Infotainment Terminals
Home Healthcare

Patient Infotainment Terminals also have great application potential in home healthcare, both as dedicated bedside terminals and as parts of overall home healthcare plans and systems. Specially configured PTs can provide secure yet easy access to electronic health records, serve as remote patients condition monitoring devices, assist in exercise and rehabilitation programs, and, of course, provide entertainment and information in a durable, patient-friendly enclosure that can be mounted and deployed anywhere.

Customization Services From An Experienced Vendor

New markets, more than any other, benefit from the availability of comprehensive customization services from an experienced vendor. Advantech has been offering medical market solutions for over a decade and is working with the world’s ten largest medical providers. Tailor-made terminals from Advantech facilitate cost-effective, profitable solutions that are quick to market and allow quick response to special market demands. We value product longevity and quality as much as you do, and our technical expertise and comprehensive warranties make for partnerships built on trust.

AdvantechCare

In an era where many vendors simply dropship product from remote locations, and service and support are hard to come by, at Advantech we understand how much you care about your hardware investment. Whether it’s an issue with efficiency, budget control, or after sales support, AdvantechCare Service is here to help with customizable AdvantechCare service packages that can include extended warranty service, Advantech Onsite Service (where an engineer will bring repair parts the next day and handle problems onsite at the customer’s appointed place), pickup service of defective units, and advanced replacement service, as well as data security, system rescue, and technology update services.

Certifications and Certification Services

The switch to electronic patient records presents great opportunities to certified electronic health records product vendors. Advantech patient infotainment terminals are EN 60601-1 and UL 60601-1 certified for electromagnetic radiation prevention, IPX1 and IP65/NEMA4 certified for water and dust resistance, and Advantech is also ISO13485 certified and meets the specific standards for medical computing platforms under existing national regulations. Advantech can also assist in submitting product and supporting documents for FCC, UL, and CE certification and reporting.
### Regional Service & Customization Centers

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<td>Kunshan</td>
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<td>USA</td>
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### Worldwide Offices

#### Greater China

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<td>ePlatform</td>
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<td>Irvine, CA</td>
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<td>1-800-557-8813</td>
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<td>Milpitas, CA (Industrial &amp; Embedded Computing)</td>
<td>1-549-789-7178</td>
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<td>Brazil</td>
<td>São Paulo</td>
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