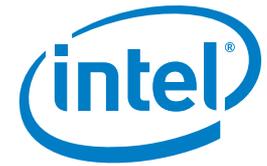


CASE STUDY

Avalue* AID-173SHR* Intelligent Display System
2nd Generation Intel® Core™ i7 Processor
Healthcare Industry



Connected, integrated and delivered at bedside – “smart” terminals bring the whole hospital to the point of care

Hospitals reap the benefits of more efficient service delivery, clinical integration, and better patient experience



“The availability of rich multimedia entertainment that’s controlled by the patient makes the in-hospital experience so much more comfortable.”

– Philip Chang
General Manager
Avalue

Challenges: Hospitals are under enormous pressure to keep their costs down and improve the bottom line. They’re looking for ways to achieve greater operating efficiency to reduce costs. And new revenue opportunities are also needed to boost income. Patient satisfaction is also important, helping ensure that their beds stay full.

Solution: The “smart” bedside terminal can address most of these challenges. This all-in-one device connects and integrates the hospital information network, clinical services, patient entertainment, and communication systems, enabling better and more efficient access at the point of care.

Case Summary

With healthcare costs rising rapidly, hospitals are being asked to deliver ever-higher quality of patient care at a lower price. They are also expected to do this profitably, with a strong bottom line that benefits shareholders.

At the same time, hospital patients expect an in-hospital experience that’s much like a hotel stay. They expect all the conveniences of home with on-demand services that fit their situation. Among these is a demand for multimedia and Internet access – services that hospitals have so far been unable to prescribe cost effectively. Patients also want their visitors

and loved ones to feel equally cared for – expectations that increasingly add to a hospital’s costs rather than lower them.

Meanwhile, healthcare practitioners and hospitals realize there may be significant gains in operating efficiency through the “connected hospital,” whereby the information network and clinical services are integrated with each other and accessible anywhere throughout the campus – even at the point of care. Many hospitals have taken steps to implement the connected hospital, but few solutions are complete or available at the point of care.

A new generation of “smart” bedside terminals is enabling hospitals to become fully connected, accessible and integrated all the way to the point of care. What’s more, these systems can also address the patient’s increasingly high expectations for a quality hospital experience.

Easily accessible to doctors and nurses at the patient’s bedside, these new smart terminals integrate the patient’s medical records, the hospital information system (HIS) and clinical services with the hospital network. Healthcare practitioners can promptly record and retrieve patients’ data such as vital signs, medical records, and prescription types and doses. Using a picture archiving and communication system, doctors can easily share imagery with patients right at their bedside,



What hospitals have also discovered is that both the level of patient satisfaction and the efficiency of the hospital dramatically improve the more quickly and easily that healthcare practitioners' can respond to and act upon a patient's needs. The ability to access patient medical records, imagery, and hospital databases at the point of care is key. As is the ability to prescribe medication, treatment and diagnostic procedures.

Happy Patients = Healthy Bottom Line

It's no secret that people heal faster when they are less anxious, feel cared for, and are comfortable. Hospitals striving to improve patient care have implemented everything from room-service type meal programs to more attentive staff policies in an effort to improve the patient experience and help patients feel better faster.

But that's not the only reason that hospitals care about the patient experience. They are equally motivated by the fact that higher levels of patient satisfaction can also produce a healthier bottom line. According to the NHS Confederation, a group representing healthcare providers and organizations within the UK and Europe: "Research in the USA has linked high-quality patient experience with lower overhead costs. Emerging evidence is also starting to show that institutions which score highly for providing patient-centered care often have lower costs per case and shorter lengths of stays."¹

Avalue suggests that one way to improve this experience is through a robust bedside terminal that connects the patient to all of the hospital's services and care systems with the quick touch of a button. Patients can use such devices to communicate and connect with outside friends and family, browse the Internet, and enjoy a vast library of multimedia entertainment. If desired and available, patients may also be able to use such terminals to order their meals, request laundry services, and subscribe to other personal services.

"Through the seamless delivery of premium infotainment services such as movies on demand, webcam/video phone, or gaming applications, hospitals can generate additional revenue that helps pay for the terminals"

– Jason Lin
Product Manager
Avalue

including CT scans, ultrasounds, MRI's and X-Rays. And patients can use the terminals as well – to order meals, access services such as laundry, browse the Internet, enjoy multimedia entertainment, and communicate with loved ones.

Avalue* has delivered an excellent example of this solution in the AID-173-SHR*. This fully integrated hardware/software solution harnesses the high performance and integrated graphics features of the 2nd generation Intel® Core™ i7 processor with a TDP of just 17 watts, enabling it to power rich multimedia and high definition medical images without using a fan.

Efficiency vs. Care

Hospital administrators have long recognized that the more efficient they can be in clinical operations and in patient care, the more profitable they will be. The challenge has always been in balancing this efficiency with quality of care. This is because common efficiency solutions – such as delivering all patient meals to a floor simultaneously, or increasing the patient-nurse ratio – tend to reduce the patient's overall level of satisfaction and suggest a lower quality of care.

For hospitals, these terminals can enable new sources of revenue, suggests Avalue. "Through the seamless delivery of premium infotainment services such as movies on demand, webcam/video phone, or gaming applications, hospitals can generate additional revenue that helps pay for the terminals," notes Jason Lin, Avalue Product Manager. "These are services that patients increasingly desire and will happily pay for."

An All-in-One Solution

Harnessing the high performance and integrated graphics features of the 2nd generation Intel Core i7 processor with a TDP of just 17 watts, Avalue has addressed both patient experience and the hospital's need for greater efficiency in one complete solution. Their fully integrated hardware/software package is hospital ready and easy to integrate into the existing hospital network and clinical practice setting.

The Avalue AID-173-SHR supports all of the integration, efficiency and services desired for connecting the hospital at the point of care. The medical compliant hardware is robust and sanitary. It includes a built-in barcode reader and scanner, keyboard, touch screen, microphone, speakers, VoIP handset, credit card reader, wireless network connection, and camera. USB connections are also provided to enable easy plug-in for other peripheral and medical devices such as portable ultrasound systems, heart monitors, and more.

The Avalue solution comes with integrated software that provides a secure user interface for patients, family, care providers, hospital staff, and even the cleaning crew. Remote accessibility enables providers to monitor and consult with the patient without being bedside. A server-side version of the application enables secure storage of sensitive patient data and allows for the integration of hospital services such as meal ordering, laundry services, video streaming, game rental, and more.

Why Intel?

Avalue chose Intel® architecture for its robust, all-in-one bedside terminal because it delivers the optimum level of performance without need for a fan. It supports the high-definition graphics used in medical imaging applications and multimedia entertainment. It also supports Internet connectivity and communications applications, as well as video consulting and remote management.

"Intel's platforms greatly facilitate and simplify the task of integrating the latest security technologies needed for data privacy and protection, while supporting networking protocols, software stacks and multiple input-output interfaces essential for keeping up with the latest upgrades and advancements in technology," said Lin.

Because the Intel® Core™ i7 processor used in the new terminal supports Intel® Active Management Technology, Avalue's bedside terminals can be centrally administered, controlling who has access to the terminals and keeping them up and running. This central administration feature can help lower the IT costs required to manage and maintain a full hospital of terminals.

A Prescription for Efficiency

The second generation bedside terminal from Avalue offers a prescription for efficiency in hospital operations as well as a means for improving the overall patient experience in hospital.

All-in-one: With everything connected, integrated and delivered at the point of care, healthcare practitioners can easily look up everything they need to know about the patient's health record and treatment program and share diagnostic information with the patient. They can update the medical record on the spot, prescribe treatment and diagnostic procedures, or order medication. Everything can happen while the provider is in the room, reducing distractions from other patients and hospital activities and enabling greater efficiency in movement. The result is a much more timely and efficient program for helping patients get better, and potentially less costly operations.

Remotely accessible: With an integrated camera, speakers, microphone and other peripherals it's possible to set up a networked connection to care providers down the hall or even in another building.



The Avalue bedside terminal uses Intel® Active Management Technology to enable advanced system management and monitoring.

This enables a face-to-face consultation between patient and doctor via the screen, creating a more efficient way to communicate regarding routine services or answer quick questions. Other hospital services such as room-service style meal ordering can take advantage of this capability to further improve the patient experience.

Whole solution: Designed for both patient and provider use in the hospital, the package of hardware and software from Avalue provides a bedside-ready solution that can be easily integrated into the hospital's network and can run existing applications. With the all-in-one bedside terminal, hospitals can potentially eliminate other redundant systems, such as the corded telephone, television set, nurse call button and more.

Strong and lean: Harnessing the strong performance per watt advantage and integrated graphics capabilities of the 2nd generation Intel Core i7 processor enables a platform that can support multiple graphics-rich applications such as medical imaging and patient entertainment while operating in a fanless enclosure. The strength of this platform supports an all-

in-one solution for delivering healthcare, hospital services and patient entertainment without being a power burden.

Reduced anxiety: The more connected and informed they feel, the less anxious patients will be, leading to faster healing. Access to the Internet enables patients to communicate more easily with faraway friends and family. They can even do their own research about their illness – giving them a sense of empowerment that contributes to healing. Live video consultations with providers can feel much like a face-to-face visit without having the practitioner be present in the room. Choosing from a wide library of multimedia entertainment and gaming options enables them to engage in distracted behavior that reduces anxiety.

Start Feeling Better Now

The new Avalue bedside terminal satisfies the hospital's need for efficiency and lower costs and the patient's need for a better in-hospital experience. It's the first in a family of more robust and integrated solutions that will improve the way hospitals and patients interact on a daily basis. What follows is a higher level of patient satisfaction, and soon everyone will start feeling better.

About Avalue*

Founded in 2000, Avalue* is a leading designer and manufacturer of industrial computer products. Avalue designs and manufactures a broad range of computing solutions that contribute to a more convenient living environment.

Learn more:

www.avalue.com.tw/application/medical

www.intel.com/go/medical



¹ 2010. Feeling better? Improving patient experience in hospital. P.5. Published by the NHS Confederation. http://www.nhsconfed.org/Publications/Documents/Feeling_better_Improving_patient_experience_in_hospital_Report.pdf.

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