Customer White Paper:
# Tablet PCs in Health Care

**Motion Computing®**

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*"If hospitals hope to control costs, patient clinical information will have to be entered and retrieved on computers at the places where physicians and nurses do their work."*

*- Modern Healthcare*

## Introduction to Tablet PCs in Health Care

Motion Computing's award-winning, ultra-mobile slate tablets enable healthcare professionals to carry and access the full power of a thin and light networked computer instead of a clipboard or unwieldy patient file - bringing up-to-the-minute patient information to the point of care.

Tablets save time, reduce errors and ensure that the most up-to-date information stays at clinicians' fingertips throughout all stages of the care delivery process. Other benefits include:

- Increased clinician mobility and accessibility
- Automation of key forms, processes and workflows
- Greater access to data at the point of care
- Elimination of duplicate efforts
- Facilitation of real-time communications
- Improvements in patient charge capture

## Tablet PC Users in Health Care

### PHYSICIANS

Whether cruising the corridors of a large hospital or dashing between exam rooms, slates quickly become invaluable clinical productivity tools for physicians. Access real-time patient data on the fly, update patient records as you go, and keep reference materials such as diagnostic aids and drug data at your fingertips throughout the day or night.

### NURSES

Tablets enable nurses to collect, maintain and retrieve comprehensive patient records easily and efficiently.

In hospitals, tablets help nurses stay organized, collect vitals, automate medication distribution, and look up critical information at the point of care. In clinics, tablets provide anywhere-access to appointment and resource scheduling information, and also help ensure comprehensive and accurate patient data collection to assist with treatment.

# Tablet Usage Models in Health Care

Tablet PCs help to improve productivity and quality of care across a variety of usage models, including:

1. Patient registration and medical history data collection
2. Appointment scheduling and resource planning
3. Billing capture and insurance claims processing
4. Clinical documentation, including nursing rounds
5. Chart retrieval, review and collaboration between clinicians
6. Collaboration and note taking during staff meetings
7. Medication administration and specimen collection management
8. Remote, computerized entry of pharmaceutical and lab work orders
9. Post-acute clinician mobility
10. Mobile image review and consultation
11. Patient education
12. Off-site patient visits, including home health
13. Clinical trials
14. Emergency Department (ED) automation
15. Emergency Medical Team (EMT) response units

## 1.    PATIENT REGISTRATION AND MEDICAL HISTORY DATA COLLECTION

Tablet PC-enabled patient check-in and information gathering reduces administrative staff time requirements, and also eliminates the need for duplicate data entry.  Solutions to improve the efficiency of patient check-in range from integrating slate tablets into self-service kiosks to replacing a clipboard and sheaves of paper in the waiting room with slates equipped with forms to record patient data using the patients' own handwriting. Patients may also feel more comfortable entering highly personal data directly into the database application on a tablet rather than knowing it will be read and re-typed by someone at the front desk.

Paper forms can now be fully digitized using point-and-click software with advanced character recognition capabilities that enable caregivers and patients to enter data using their own handwriting - accurately, comfortably, and quickly.  This level of advanced forms automation greatly streamlines the collection of new patient data and medical histories.  Collecting comprehensive and accurate information about a patient in a digital format that can be instantly accessed by caregivers over the network improves work flow efficiency as well as overall quality of care.

## 2.    APPOINTMENT SCHEDULING AND RESOURCE PLANNING

Appointment scheduling and resource planning modules are key components in hospital IT and practice management software applications.   Tablets provide "anywhere access" to scheduling information, empowering doctors, nurses and reception staff to keep a close eye on their calendars, thereby keeping the clinical work flow moving as planned.

Practice management functions such as inter-office communications and resource planning can also be seamlessly integrated into Electronic Medical Record (EMR) and Electronic Health Record (EHR) applications. Both EMRs and EHRs often integrate billing functions into the main data collection application.

Read more about mobile Practice Management and EHR system benefits on pages 7 and 8.

## 3.   BILLING CAPTURE AND INSURANCE CLAIMS PROCESSING

The ability to perform on-the-spot capture of the provision of services with associated billing implications is a key benefit of tablet PCs.  In the competitive world of medicine, health care administrators and providers need to keep a watchful eye on the bottom line.  Not only can tablets bring about cost savings through productivity increases, but carrying a tablet PC throughout the care delivery process can also increase revenues by ensuring that all billable charges are captured in real-time.

In addition, tablets can improve efficiencies in documenting and filing insurance claims.  Processing insurance claims takes a significant amount of administrative time, but is the activity that is responsible for generating a large portion of a hospital's or clinic's revenue stream.  According to the New England Journal of Medicine, administrative costs account for 26.9 percent of gross income for a medical practice.  Therefore, hospitals and clinics benefit from deploying technologies that help them quickly and thoroughly provide documentation to substantiate the provision of services submitted on insurance claims.  With a tablet, handwritten notes, written diagrams and annotations on medical images can help to provide a greater level of claims documentation, satisfying the stringent requirements of payers.

The benefits related to capturing billable charges and facilitating insurance claims with tablets include:

- Eliminating the need to remember and document activities after-the-fact because caregivers can capture and document activities as they happen
- Using handwritten notes to augment claims data, thereby eliminating long paper trails
- Determining more quickly which services are reimbursable and locating activity codes quickly to speed up the filing of paperwork
- Submitting claims faster, which can shorten reimbursement cycles from payers
- Lowering administrative support costs associated with insurance claims processing
- Improving patient satisfaction through faster and more accurate claims handling

## 4.   CLINICAL DOCUMENTATION

Caregivers who carry and use tablets for clinical documentation have increased mobility and real-time access to information.  A broad range of ink-optimized applications facilitate clinical documentation using a tablet PC.  Real-time tracking of patient information allows medical practitioners to access information about previous conditions, allergies, concurrent medications and more, before making new diagnostic decisions or determining treatment paths, thereby helping to improve patient safety and increase recovery speed.  In addition, integrating PC-card-based or wireless-based diagnostics tools and processes into EMR applications can reduce diagnostic workstation costs, simplify workflows, and improves the accuracy of data collected on rounds.  Read more about mobile EHR system benefits on page 8.

The benefits of deploying tablets to assist with clinical documentation activities include:

- Increased clinician mobility, accessibility, and productivity, which can lead to higher patient satisfaction ratings
- Increased efficiency by enabling faster discharge and transfer processes between different stages of care delivery
- Improved quality of patient care through greater access to information and reduction in diagnostic and treatment errors
- Greater profitability due to reducing the amount of administrative work required per patient and increasing the capture of billable charges

## 5.    CHART RETRIEVAL, REVIEW AND COLLABORATION

The use of highly mobile slate Tablet PCs facilitates efficient location, sharing and reference of patient records throughout the entire care delivery process - wherever caregivers happen to be on the medical campus.  The large screen and wide viewing angles make Motion's LE1600 product optimal for situations that require two or more caregivers to collaborate and review patient data simultaneously.

## 6.    COLLABORATION AND NOTE TAKING DURING STAFF MEETINGS

Slate tablets bring the convenience and natural input of digital ink into a form factor that does not cause distractions during meetings. Agendas and discussion points can be distributed to meeting attendees in advance for review during meetings.  Attendees can take comprehensive notes easily using applications like Microsoft OneNote or any of a variety of standard Microsoft XP applications. During educational sessions, attendees can annotate documents and images for greater learning retention.

## 7.    MEDICATION ADMINISTRATION AND SPECIMEN MANAGEMENT

Motion's slates are designed to play on integral role as part of a smart mobile solution designed to help caregivers enforce a patient's "5 rights":  the right medication, right dosage, right time, right patient, and right caregiver.  An integrated mobile solution is designed to improve patient safety by facilitating screenings for drug-allergy contradictions and drug-drug interaction precautions before medication is distributed or administered. Having wireless access to information about the location of supplies also helps reduce the occurrence of missing or wrong medications at the time of treatment. Read more about mobile electronic Medication Administration Record (eMAR) benefits on page 9.

## 8.    REMOTE, COMPUTERIZED ENTRY OF PHARMACEUTICAL AND LAB WORK ORDERS

In addition to enabling physicians to look up and prescribe medication over a wireless network for fulfillment in the hospital pharmacy, tablets are also a convenient tool for placing and uploading orders for lab work – accurately and efficiently – from anywhere on the medical campus.  Read more about Computerized Patient Order Entry (CPOE) on page 9.

## 9.    POST-ACUTE CLINICIAN MOBILITY

Tablets deliver higher levels of post-acute clinician mobility and usage flexibility to busy surgeons, specialists, primary care physicians, and nurses.  "Anywhere access" for clinical information and test results enables greater productivity and improvements in patient service and outcomes.

On-the-go clinicians are able to complete all care documentation at the actual point of care, improving documentation quality and throughput.  Natural pen input enables clinicians to complete forms documentation while standing in the hallway or sitting with a patient - in substantially less time with natural pen input.

## 10.   MOBILE IMAGE REVIEW AND CONSULTATION

According to Modern Healthcare's December 2005 'By the Numbers' study, 88% of healthcare systems have either implemented or plan to implement electronic transfer of diagnostic images.  With wireless slates, clinicians are equipped with an ideal mobile platform to grant them instant access to digital images from anywhere.

Fast, mobile access to patient x-rays and other digital images enables clinicians to discuss conditions, conduct comparative studies, consult with other professionals, and educate patients quickly and easily.  Commuting medical specialists are also able to conduct Mobile Image Reviews and Consultations more easily and access images remotely.

## 11.   PATIENT EDUCATION

For patients, the clipboard design of a slate allows them to review their medical records, learn about conditions, and understand treatment paths comfortably and privately, whether they are lying on a bed or sitting in a waiting area.

## 12.   OFF-SITE PATIENT VISITS, INCLUDING HOME HEALTH

The Health Insurance Portability & Accountability Act (HIPAA) requires efficient healthcare delivery via standardized electronic data interchange and standards-based enforcement of the confidentiality and security of health data. Certain insurance regulations require routine assessment of patients receiving home health care, along with electronic submission of data.  Home health software applications exist to support all parties involved in the home care process: hospitals, home care agencies, physicians, home care clinicians, patients and family caregivers.

Home health and hospice care spans several disciplines, including mobile nursing services, physical and occupational therapy, medical social work, nutritionist services, companion/aide services and meal delivery. Combined with a tablet, home health applications integrate clinical data collection with billing functions, enabling entry into a truly paperless world.  Slate tablets enable doctors and nurses making house calls and home health care and hospice care providers to collect data and update records quickly and accurately – right at the bedside.

Motion's lightweight slates are ideal for taking notes and using electronic forms while standing or sitting comfortably in a chair at the patient's bedside.  The low-profile design also eliminates artificial barriers between the caregiver and the patient, increasing the quality of communication and the ability for better rapport to develop between patients and caregivers.

## 13.   CLINICAL TRIALS

Slate mobility and the ability to capture data quickly add significant value during one of the most critical phases of drug development – clinical trials.   By capturing participant data and reactions first-hand using digital forms equipped with rules-based logic to lower the risk of research methodology mistakes, results are processed more quickly and trial outcome reports can be generated on the spot.  For more information on tablet usage during clinical trials, read Motion's Clinaero case study - http://www.motioncomputing.com/about/news/cs_clinaero.asp.

Finding suitable candidates for clinical trials is an important part of the drug development process.  Therefore, tablet mobility and the ability to process information quickly can also allow physicians to screen patients at the time of registration for medical care to see if they are eligible for any upcoming clinical trials that might benefit them.  For example, at the West Clinic/Supportive Oncology Services, tablets are used to determine eligibility for clinical trials for cancer treatment and to alert doctors instantly if a patient is a potential candidate for a study (read full case study - http://www.motioncomputing.com/about/news/cssos.asp)

## 14.   EMERGENCY DEPARTMENT AUTOMATION

The emergency department (ED) is one place where speed and accuracy of care delivery are often most critical.  Tablets add value in the ED by:  enabling caregivers to access patient data wirelessly; replace handwritten documentation with more accurate, complete and legible information; reduce the risk of manual errors that might impact patient safety; and treat, transfer and discharge patients faster. Thus, the benefits of deploying tablet PCs into an ED include:

- Increased patient safety by reducing diagnostic and treatment errors by replacing handwritten documentation with more accurate, complete and legible information
- Faster turnaround because previously collected clinical data is readily available for assessment
- Greater control through implementation of role-based access to patient information and tracking activities with time stamp and signature requirements
- Increased annual per-patient revenue through more efficient resource planning and more accurate billing
- Facilitation of compliance reporting due to automated data capture

## 15.   EMERGENCY MEDICAL TEAM

Often the first on the scene, emergency medical team (EMT) caregivers need to gather and access critical data quickly.  Carrying tablet PCs enclosed in semi-rugged cases, remote EMT teams can connect to the hospital network using Wide Area Network (WAN) cards or via a wireless access point in the ambulance.  This ability to communicate with and convey key data back to hospital staff helps ensure that patients in critical conditions receive optimal care at the scene, in the ambulance, and as they transition into the ED.
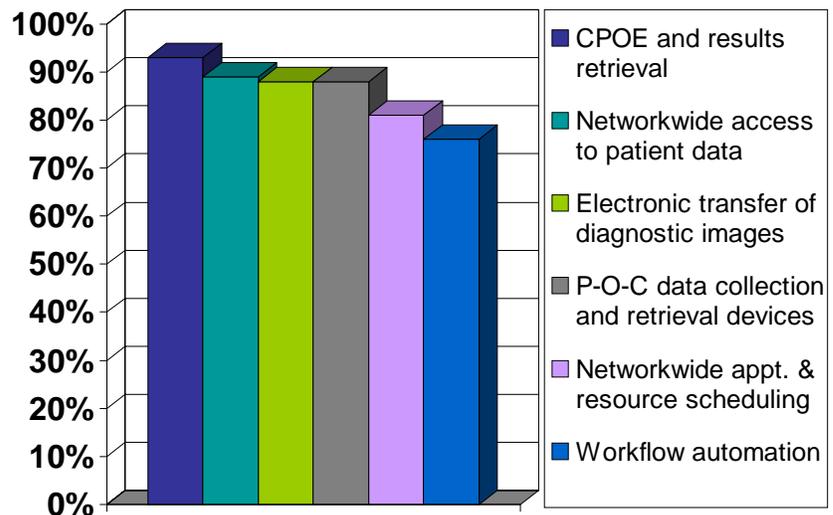
# Key Application Areas

Four key application areas for slate tablets include:

1. Hospital IT and Practice Management
2. Electronic Health Records (EHR)
3. Computerized Patient Order Entry (CPOE) and Electronic Medication Administration Records (eMAR)
4. Radiological Information System (RIS) and Picture Archival Computer System (PACS)

The following chart shows that 75% to more than 90% of surveyed hospitals have either implemented or plan to implement key technologies and processes that can leverage the functionality and mobility of tablets.

**Selected Technology Adoption Data in Health Care**



Legend:
- CPOE and results retrieval
- Networkwide access to patient data
- Electronic transfer of diagnostic images
- P-O-C data collection and retrieval devices
- Networkwide appt. & resource scheduling
- Workflow automation

Source: Modern Healthcare's BY THE NUMBERS IT survey, December 19, 2005, p. 46.

## Hospital IT and Practice Management Applications

As part of workflow automation initiatives, highly-mobile slates running practice management software help improve office efficiency and keep medical staff organized and productive, wherever they happen to be on the medical campus. More accurate and efficient on-the-spot charge capture can also lead to improvements in billing and collection activities.

Bringing mobility to hospital IT and practice management activities, tablets add value by:

- Streamlining workflows and organizing resources
- Integrating patient data and resource planning tools onto a single device
- Improving revenues and insurance filing accuracy through instantaneous capture of billable charges
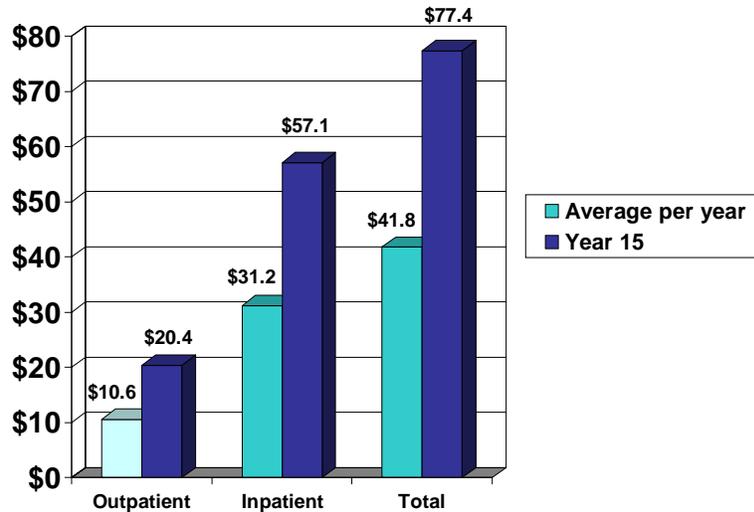
## Electronic Health Records

According to Health Affairs/MGMA as reported in Modern Healthcare, about 73% of physician practices with 11 to 20 physicians have already implemented or plan to implement an Electronic Health Record (EHR) system in the next two years.

An EHR is an advanced EMR health care information system that allows caregivers to collect a comprehensive set of information about a patient's medical history in order to improve quality of care. EHR systems also facilitate efficient sharing and usage of patient records within a health care environment and often integrate practice management functions.

Modern Healthcare envisions potential total efficiency savings due to widespread EMR adoption over the next 15 years to be in the $77.4B range.

*88% of health systems have implemented or plan to implement "point-of-care data collection and retrieval devices."*

*- Modern Healthcare, 12/19/05*

**Potential Efficiency Savings (in $B) with Widespread Adoption of EMR Systems**
(Assumes EMR adoption by 90% of providers within 15-year rollout)



Source: Modern Healthcare's BY THE NUMBERS IT survey, December 19, 2005, p. 44.

EHR systems are typically forms-based. Using a slate for forms automation within an EHR rollout enables maximum mobility and flexibility for caregivers as they collect, update and access data. Therefore, strengthening an EHR deployment with the power and mobility of slate tablets will help to:

- Increase clinician mobility and productivity

- Improve accessibility to data and resources from anywhere in the hospital or medical practice

- Increase patient satisfaction through more efficient, higher quality of care

- Increase patient safety through more complete and accurate data collection, retrieval, and rules-based applications

## Computerized Patient Order Entry and Electronic Medication Administration Records

Computerized Patient Order Entry (CPOE) is an automated system designed to improve efficiency and accuracy in the following areas:  pharmaceutical order fulfillment; lab work order placement and results retrieval; specimen management; and medication administration. An Electronic Medication Administration Record (eMAR) application presents a safe, effective way to manage medication distribution with fewer errors.

The National Coordinating Council for Medication Error Reporting and Prevention defines a medication error as:

> "Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional… events may be related to…prescribing; order communication; …dispensing; distribution; administration; [and] education; …"

The American Hospital Association cites several types of specific problems:

> "…incomplete patient information (not knowing about patients' allergies, other medicines they are taking, previous diagnoses, and lab results, for example); unavailable drug information (such as lack of up-to-date warnings); miscommunication of drug orders, which can involve poor handwriting, [and] confusion between drugs with similar names… "

In 2002, an Institute of Medicine survey of 500 U.S. hospitals and health care facilities found that 200,000 medication errors had occurred, 3,213 of which resulted in patient injury.  Deploying wireless tablets in conjunction with CPOE and eMAR rollouts can help address these issues and provide the following results:

- Better work flow efficiency by reducing the need for clarification of necessary information for prescription fulfillment
- Reduction in fulfillment time between the time a drug is prescribed and the time a patient begins receiving treatment due to: on-the-spot prescribing, removal of the need to decipher a physician's handwriting and wireless transfer of prescriptions straight to the lab
- Better control over enforcing a patient's "five rights" (defined as the Department of Health and Human Services as "the right drug to the right recipient in the right dosage by the right route at the right time"):
  o Increased access to patient data and drug reference materials
  o Reduction in risk of manual errors that can lead to "missing or wrong medications" and potentially negative patient outcomes
  o Constant access to up-to-the-minute information on drug-drug interaction warnings and drug-allergy contraindications
  o Increased control over critical tasks via user authentication
  o Greater control and ease of compliance reporting due to the ability to electronically time-stamp key activities

Lancaster General Hospital, a 521-bed, non-profit facility that offers a variety of acute-care medical services, uses Motion tablets as part of an efficient barcode-driven medication administration program.  (Read full case study - http://www.motioncomputing.com/about/news/cslancaster.asp)

*43% of hospital respondents have deployed CPOE; 38% of those that do not are planning to implement CPOE within a year.*

*- Modern Healthcare, December 2005*

## Radiological Information System and Picture Archival Computer System

According to the Health Communication Network, a Radiological Information System (RIS) is a computer-based information system designed to "store, manipulate, and retrieve information for planning, organizing, directing, and controlling administrative activities" in a radiology facility.

Some general benefits of an RIS include:

- Improved office productivity through real-time automated management of patients' movements within the radiology department from admission to discharge and more efficient staff scheduling
- Integration of patients' images into an EMR
- Efficient data mining, diagnosis and reporting
- Simple and efficient tracking of images in conjunction with a Picture Archival Computer System
- Improved patient satisfaction through real-time appointment setting when new x-rays are required

Adding the essential element of mobility to an RIS, tablets help radiology service delivery teams manage the collection, storage, retrieval and review of patient information on a real-time, ultra-mobile basis from anywhere within the radiology department or the medical campus.

A Picture Archival Computer System (PACS) enables efficient electronic storage and retrieval of digital images used for medical consultations and image viewing in departments such as orthopedic surgery, obstetrics, and cardiology. PACS benefits are greatly multiplied when the image system is combined with the versatile mobility of a slate tablet, enabling real-time access to any image from anywhere at any time. A biometric-based security measure, such as Motion's integrated fingerprint reader, ensures that protected patient films are only accessed by authorized viewers. A large, wide-view tablet screen also permits simultaneous viewing of crisp images from a variety of angles by multiple viewers.

By deploying tablets in conjunction with RIS and PACS systems, benefits include:

- Improved productivity of medical staff by delivering instant access to digital images for reviewing conditions and conducting comparative studies
- Ability to easily consult with other professionals from anywhere
- Ability to educate patients on conditions, even when they are confined to a hospital bed
- Decreased costs associated with film purchases, technician labor, and losses of film that cause costly repeat exams and unnecessary image replacement cycles

# Important Tablet PC Purchase Considerations

Several key design elements and features facilitate with mobile rollouts in hospitals and clinics:

1.  Size and weight:  Thin, lightweight and easy to carry

2.  Screen size and brightness:  Matched to application; able to view under bright fluorescent lights or in operating rooms

3.  Security:  Built-in fingerprint reader for user authentication; Trusted Platform Module (TPM) for device authentication; other advanced software-based security measures to support HIPAA requirements

4.  Battery management:  Battery longevity; ability to manage battery cycles easily using chargers and hot-swappable batteries

5.  Wireless connectivity:   Integrated WiFi, Bluetooth, and IrDA

6.  Speech recognition:   Capable of accurate medical dictation

7.  Thin client:  Availability of thin client version (if relevant for specific environment)

8.  Peripherals and software:  Peripherals to support full range of usage patterns; ecosystem of partners to provide total solutions

9.  Health care usage expertise:  Sharp focus on designing products for health care environments; knowledge of users' *pain points* and needs; length of experience serving health care customers

## 1.  SIZE AND WEIGHT

In fast-paced clinical environments, healthcare practitioners need to be as mobile as they can be.  Lighter than convertible tablets, Motion's thin and light slate tablets are designed to support users who need computer access even while walking or standing.  Natural pen input makes navigating screens and inputting data fast and simple.  The availability of an attachable keyboard like Motion's Convertible Keyboard enables use on a cart-on-wheels (COW) or desktop when a keyboard is desired.

## 2.  SCREEN SIZE AND BRIGHTNESS

Many clinical forms and images are best viewed on a tablet with a 12.1" screen in portrait orientation, like Motion's LE1600 Slate Tablet PC, while some usage patterns like gathering vital signs on nursing rounds can be more than adequately served with the 8.4" screen on Motion's LS800. Wide viewing angles like the 180-degree viewing angle on the LE1600 and the 120-degree viewing angle on the LS800 facilitate medical consultations and patient education. Finally, in bright-light settings such as operating rooms, Motion's optional View Anywhere technology increases both brightness and contrast ratios for optimal screen viewing.

### 3. SECURITY FEATURES

In the post-HIPAA wave of compliance issues and the ongoing focus on data privacy, integrated security features are essential in a tablet PC. A built-in biometric authentication feature like Motion's integrated Fingerprint Reader enables controlled access to patient data by only authorized users. Taking security to an even higher level, Motion's built-in Trusted Platform Module (TPM) reduces risk of hardware infiltration, provides device authentication in addition to user authentication, adds a personal secure drive, and strengthens applications by protecting digital certificates.

In addition, Motion's systems offer enhanced BIOS-level security with pre-boot authentication, a universal lock slot for physical asset protection, and a Motion Security Center software panel that grants quick access to the Motion OmniPass software for configuring the Fingerprint Reader and to the Infineon software for configuring the TPM.

### 4. BATTERY MANAGEMENT

For mobile users in healthcare, the ultimate goal for battery life is to find a solution that offers sufficient battery life for the usage model at the lowest possible weight. The LE1600 offers 3.5 hours of battery life in the standard configuration, with access to a lightweight, 1-pound flat Extended Battery to deliver more than 7 hours of battery life, depending on configuration and usage.

At a minimum, system batteries should be warm-swappable, meaning you can change the battery in < 20 seconds. Both the LE1600 and LS800 have a warm-swappable primary system battery, and the LE1600 takes it a step further by offering hot-swappability (i.e., no need to even put the system into standby) when changing out the Extended Battery.

### 5. WIRELESS CONNECTIVITY

Tablets need to be equipped at a minimum with an Ethernet connection and 802.11 wireless connectivity (WiFi) in order to offer connection to essential network data and resources. Integrated WiFi enables caregivers to update and access data from anywhere.

The addition of integrated Bluetooth and Infrared (IrDA) wireless connections in the LE1600 and the LS800 tablets add additional flexibility to connect to and communicate with a variety of ancillary healthcare devices, including scanners, printers and specialized diagnostic tools like spirometers.

## 6. SPEECH RECOGNITION CAPABILITIES

Tablets can be effective and efficient tools for medical dictation due to their ability to enable automated speech-to-text transcription in mobile usage scenarios. Traditionally, medical practitioners have used tools such as hand-held recorders to dictate patient notes for later electronic or manual transcription. Advancements in speech recognition software, coupled with the arrival of tablet PCs equipped with superior sound recording capabilities, now enable caregivers to speak directly into a tablet PC and immediately convert their spoken words into digital text.

Using an ultramobile Tablet PC equipped with a dual microphone array and configurable acoustics software, caregivers can dictate notes directly into forms or documents, saving time and money by eliminating transcription delays and costs and reducing the risk of memory errors.

## 7. THIN CLIENT COMPUTING

For areas where security is of the utmost importance, Motion Computing also offers a Tablet Client. The Tablet Client comes in the same form factor as the LE1600 tablet, however instead of the Windows XP Tablet PC Edition operating system, it runs Windows XP Embedded (XPe). The main advantages of an embedded operating system are increased security and easier maintenance.

The Motion Tablet Client is a great device for using on medical carts or in other areas where it is not someone's primary machine. The Tablet Client features the Citrix ICA Client, Microsoft RDP and Internet Explorer. Use any of these methods to connect to a central server and display data or interact with an application. The advantage of this system is that no data is stored locally on the machine, and it is easy for IT groups to maintain. If a device is stolen off a cart, there is no risk of patient data being lost.

Also, he Motion Tablet Client features a flash drive instead of hard disk drive. The flash drive physically has almost no room on it to store data. Flash drives are more robust than standard hard drives, which makes it more difficult for the drive to be damaged or the software image to become corrupted.

The Tablet Client is extremely easy for IT organizations to maintain and administer. Because nothing can be written to the device, the Tablet Client is not susceptible to viruses or other software that can corrupt the system software. All updates to the application software are performed on the server side. The Tablet Client is meant to be deployed out of the box as is. It does not require any customization or alterations. Should an update be required on the client device however, it does come preinstalled with the QFE Installer and Device Update Agent.

In summary, a Tablet Client may be the best choice for organizations that need:

- High data security
- Networked data access
- Centrally managed administration
- High system reliability
- Ultra mobile, wireless platform with pen input

Is the Tablet Client right for you?

- Does your organization have an existing thin client and wireless environment?
- Is data security a top priority?
- Will users share a large number of pooled tablets?
- Will the device only be used in the facility or on the campus?
- Do your applications use Microsoft RDP, the Citrix ICA Client or a Web browser?

## 8. PERIPHERALS AND SOFTWARE

Due to different *mobility profiles* of users, a broad range of peripherals is required to meet user needs. Carrying cases with padding and shoulder straps are well-suited for the rigorous work patterns of nurses and doctors. While a slate tablet rests comfortably in the crook of one's arm during use, other options for holding the tablet address those times when caregivers find themselves in a stationary position. Motion offers three options for these times: users can set the tablet into a convertible keyboard with charging capabilities while in an exam room or using a cart; can place the tablet in a specialized mounting arm installed on a cart or wall; or can place the tablet in a docking station when back at the desk.

Extra batteries, dual-battery chargers and extended battery options assist with ease of battery management to meet specific requirements. A convenient charging cabinet will charge and securely store multiple tablets.

Ultimately, the right software and peripherals make the overall tablet solution work. Motion has partnered with 350 software and hardware vendors specializing in tablet applications for vertical markets – 100+ of them specifically focused on health care. These partnerships help ensure the best optimization of digital ink as new programs are developed and that the total tablet solution optimally fits various users' work scenarios.

## 9. EXPERTISE IN SERVING HEALTH CARE CUSTOMERS

Motion Computing directly and regularly conducts hands-on primary market research, usability testing, and clinical walkthroughs with physicians, nurses and hospital IT managers and CIOs. As a result, Motion's product line is optimized to meet the specific usage needs of health care customers.

# Customer and ROI Examples

### CLINICAL TRIALS AND MEDICAL RESEARCH & DEVELOPMENT

**Clinaero** uses Motion tablets to conduct more efficient and effective clinical trials. Before deploying tablets, Clinaero spent about $2,000 every month on maintaining old technology. (Read full case study - http://www.motioncomputing.com/about/news/cs_clinaero.asp)

**Eye Response Technologies** uses tablets as an assisted technology for patients with Amyotrophic Lateral Sclerosis (ALS), often referred to as "Lou Gehrig's disease." (Read full case study - http://www.motioncomputing.com/about/news/cseyeresponse.asp)

At the **West Clinic/Supportive Oncology Services**, tablets are used to determine eligibility for clinical trials and to alert doctors if a patient is a potential candidate for a study. (Read full case study - http://www.motioncomputing.com/about/news/cssos.asp)

### ELECTRONIC HEALTH RECORDS

**HealthSouth** saved an estimated $48 million per year through productivity gains by deploying 5,000 slate tablets at 1,400 rehabilitation centers. Repair costs became non-existent when they purchased tablets to replace outdated equipment that previously cost $50K/month in maintenance. (Read full case study - http://www.motioncomputing.com/about/news/cs_healthsouth.asp)

At **Jackson Clinic**, a system with 132 physicians practicing in 24 specialties and sub-specialties in 18 offices, physicians realized time savings of up to one hour a day per physician. (Read full case study - http://www.motioncomputing.com/about/news/csjackson.asp)

**'Specially for Children**, a pediatric sub-specialty group serving 50,000 patients per year, created a paperless outpatient facility using Motion tablets. The organization was so pleased with their tablet PC rollout that they recently purchased 11 LE1600 tablet PCs – Motion's newest flagship product – for incoming staff members. (Read full case study - http://www.motioncomputing.com/about/news/cs_specially_children.asp)

**Dr Kyle Oh's Sports Medicine Practice** attributed a 25% increase in the number of patients his practice could see to the speech recognition capabilities of Motion tablets. He also used speech recognition to save money in transcription fees, which cost the average doctor $15,000 per year. (Read full case study - http://www.motioncomputing.com/about/news/csdroh.asp)

**St. Mary's Medical Center**, a 728-bed acute care facility providing inpatient and outpatient care in general medical, cardiac, surgical, diagnostic, rehabilitation, senior services, inpatient mental health, oncology, and emergency services deployed 24 slates to replace paper-based patient charts. Early on, "the nurses [were] pleased with the product's flexibility, and it has cut their charting time significantly." (Read full case study - http://www.motioncomputing.com/about/news/csstmary.asp)

**West Clinic/Supportive Oncology Services** standardized on Motion tablets as an important building block in their holistic approach to cancer diagnosis and treatment for the 10,000 patients they receive annually. Tablets are also used to determine eligibility for clinical trials and to alert doctors if a patient is a potential candidate for a study. (Read full case study - http://www.motioncomputing.com/about/news/cssos.asp)

### ELECTRONIC MEDICATION ADMINISTRATION RECORDS (eMAR)

**Lancaster General Hospital**, a 521-bed, non-profit facility that offers a variety of acute-care medical services, uses Motion tablets as part of an efficient barcode-driven medication administration program. (Read full case study - http://www.motioncomputing.com/about/news/cslancaster.asp)

### HOME HEALTH

Motion's tablets and CareAnyware's ehomecare.com streamline home health operations for customers **Maria Parham Regional Home Health** and **Parmenter Visiting Nurses Agency (VNA) & Community Care**. (Read full case study - http://www.motioncomputing.com/about/news/cs_careanywhere.asp)