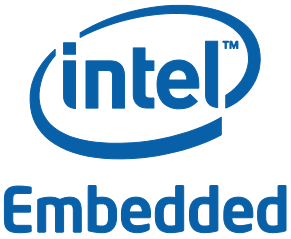

White Paper
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Employing Intel® Architecture Solutions in the Home Health/Telehealth Space

January, 2011

White Paper

Executive Summary

There are favourable long-term growth opportunities for semiconductor vendors in the telehealth space mainly due to the aging demographic patterns, spiralling health care costs and the rising prevalence of chronic medical conditions. Efforts to curtail hospital stays and suppress overall health care costs will help endorse the increasing use of home monitoring solutions in patient treatment.

In order for the telehealth market to flourish it obviously needs to ensure that it improves patient outcomes. More importantly it needs to increase healthcare efficiencies and facilitate in containing health care costs and save money.

Today OEMs and medical device vendors who are focusing their efforts in this space (and in particular on telehealth hubs and remote patient monitoring solutions) are moving away from custom hardware development in favor of adopting COTS (Commercial off the shelf) solutions. As a result they can fully focus their efforts on value add areas such as applications development which is where they can truly differentiate their products.

By utilizing a platform approach based on embedded Intel® architecture an OEM can be benefit in many ways such as:

- Flexibility and scalability to address in terms of performance, costs optimizations, availability of interfaces.
- Fast prototyping to validate the key assumptions and resolve the usability problems by providing pre-integrated hardware / software solutions.
- Reduction of the development costs and shortening the time-to-market.
- Reduction of the BOM costs of final customized solutions.

- Increasing the reliability and the quality of health products by using tested and pre-certified "building blocks" in new designs.

Today Intel's embedded group has a number of platform skus such as Intel® Atom™ processor Z5xx series and Intel® Atom™ processor E6xx series which are a very good fit for telehealth devices. The package size, average selling price (ASP) and power envelope of the Intel Atom processor Z5xx and E6xx series are ideal for Application Hosting Devices (AHD). Furthermore because of the code portability across x86 based platforms OEMs can quickly upgrade solutions and rapidly migrate to a new platform without any major software development.

Contents

Introduction

Telemedicine, Telecare, Telehealth, Telemonitoring and eHealth are terms that are often used interchangeably to describe the remote delivery of health and social care using Information and Communication Technologies. This definition is quite broad and includes Tele-consultations, Tele-cardiology, Tele-radiology, Tele-rehabilitation, Tele-audiology, Tele-mental health and many other new disciplines that use telecommunications and information technologies to connect clinicians to clinicians and clinicians to patients.

The worldwide demographics and healthcare economics statistics driving this market are clear:

- Globally 1 billion adults are overweight
- In the USA, 1 in every 3 adults is obese[1] and almost 1 in 5 youth between the ages of 6 and 19 is obese
- In 2005, 133 million Americans – almost 1 out of every 2 adults – had at least one chronic illness[2]
- There are 860 million chronic disease patients world-wide
- There are 600 million elders age 60 or older
- 75-85% of healthcare spending is on chronic disease management
- By 2020, the percentage of EU members GDP spent on healthcare is due to double to 16% (mostly due to the impact of aging and chronic disease.[3]
- Despite being largely preventable, chronic conditions are the cause of 86% of premature deaths in the WHO European Region and have significant economic implications.
- In Japan Chronic Diseases accounted for 80% of total deaths in 2002[4]

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[1]. Obesity among adults in the United States—NCHS data brief no 1. Hyattsville, MD: National Center for Health Statistics; 2007 Ogden CL, et al

[2] Projection of chronic illness prevalence and cost inflation. Santa Monica, CA: RAND Health; Wu SY, et al.

[3] Belgian presidency of EU council of ministers: http://www.eutrio.be/european-strategy-chronic-conditions

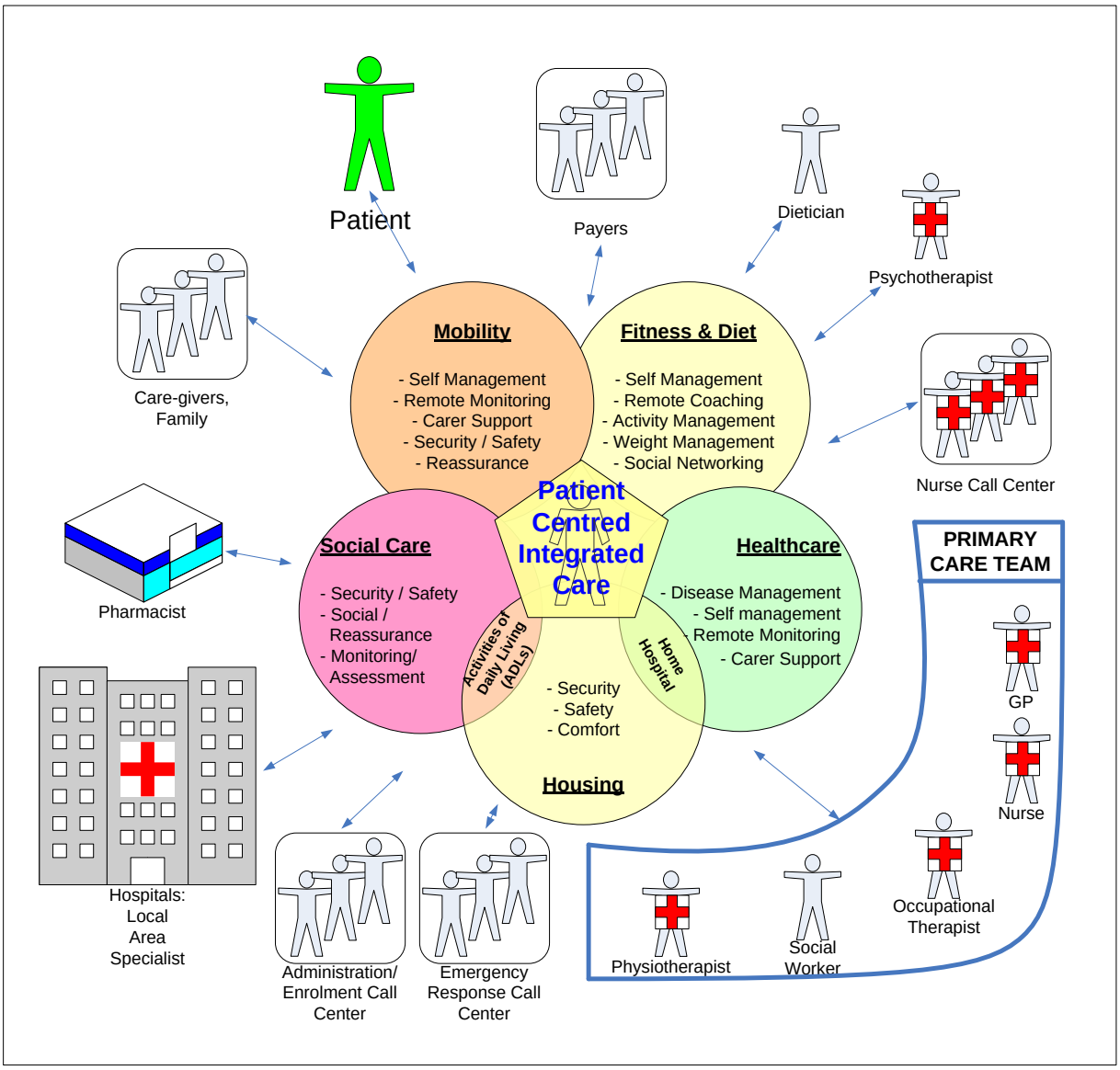

Figure 1: Telehealth System Stakeholders

The ageing populations, increasing morbidity rates of lifestyle diseases such as diabetes, hypertension, obesity, COPD, heart diseases and many others have truly become serious challenges which nations and their governments must today address. Increasing awareness in the chronic illness treatment and growing demand for more accurate, more affordable health services are now leading to a demand for new remote patient monitoring and telehelath

[4] WHO "Facing the Facts -Chronic Disease Report Japan"

solutions which going forward will continue to see increased adoption due to the bottlenecks and inefficiencies of the existing health systems. Above all in order to ensure success in this space it is essential that a care delivery network that encompasses all the relevant stakeholders (see figure 1 above), is person centered and focused on prevention is delivered. This will:

- Improve health services quality and health outcomes
- Provide suitable treatments of diseases for patients
- Promote Independent living
- Reduce costs of health services delivery

Telehealth

Telehealth provides remote patient monitoring systems that enable the patient to manage their chronic conditions in the community, predominantly in their own homes, supported by a remote healthcare professional, in a mostly asynchronous manner.

A Telehealth system is installed in the person's home that take vital signs measurements at times defined in their care plan.

The readings are transmitted to a central IT system which compares the readings to the care plan. Exceptional readings are flagged to the nurse manning the system who then makes a decision as to the appropriate clinical course of action. Often, this will involve the nurse contacting the patient, helping the person to better understand how to manage their condition, and encouraging them to get back on track with their care plan.

Some of the more advanced systems have the ability to deliver educational content, and collect and present data relating to exercise and activity to the patients. At all times, the patient can access their own data to better understand and self manage their condition.

The Pyramid Model of Care

The Pyramid of Care has been first introduced by Kaiser Permanente* as a model showing the risks and costs distribution across populations with long-term chronic conditions. The differing complexity of disease states requires different technology solutions. TeleHealth systems appropriate for the Level 3 Complex patients would be too expensive when deployed in a larger population of Level 1 patients.

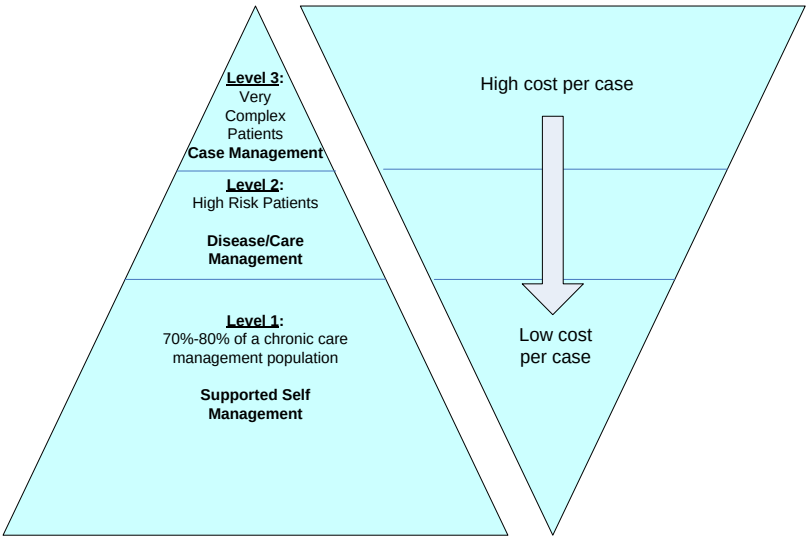

Figure 2: Kaiser Permanente* Pyramid of Care

Level 3: Case Management

These patients typically have multiple chronic conditions and suffer from diminished hearing/sight/sensation, and possibly onset of dementia. Care is managed by a team of professionals using a CRM approach, to co-ordinate and join up health and social care interactions with the patient.

This level 3 group typically represents approx 5% of the chronic disease population but consume 50% of the total healthcare budget. High end Telehealth systems are normally used for these patients.

Level 2: Disease Specific Care Management

This involves providing patients who have a complex single need with responsive, specialist services using disease-specific protocols and pathways. Mid-level Telehealth systems based that enforce best-practice care for a specific disease state are normally used for these patients.

This level 2 group typically represents approx 15% of the Chronic Disease population.

Level 1: Supported Self Care

Supported self care is the method by which a Telehealth system can collaboratively help individuals and their careers to develop the knowledge, skills and confidence to care for themselves and their condition effectively. Low cost Telehealth systems and internet technologies are used to transfer data from patients to careers whilst allowing the patient to set and understand their own goals for the disease.

This Level 1 group typically represents approx 80% of the Chronic Disease population.

Telehealth systems therefore need to be designed to accommodate the differing needs of chronic diseases patients depending on the disease they have and the progression of their disease. For Telehealth system designers this creates an opportunity to design a base platform of a system that is appropriate for early stage patients that can be amended for Level 3 patient's needs. This platform approach requires an architectural design that is cost effective for today and expandable for tomorrow.

Requirements of Tomorrow's Telehealth Systems

The high level Architecture of a Telehealth System is depicted in figure 3.

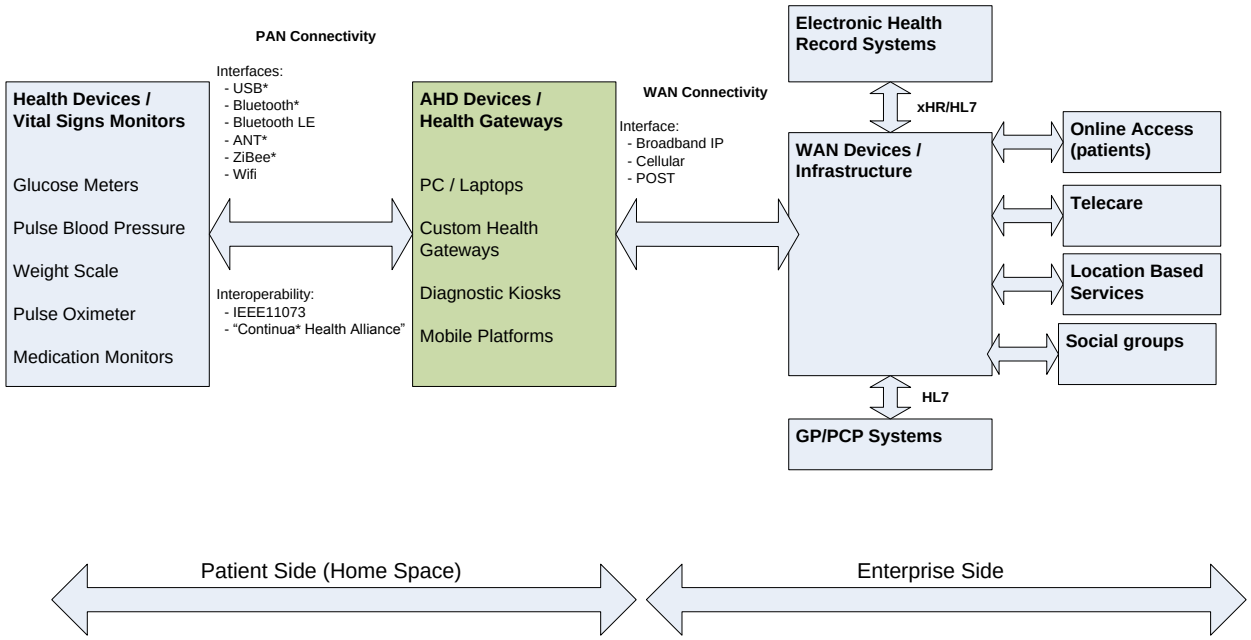

Figure 3: Telehealth System – High Level Architecture

When thinking of the Telehealth it is important to remember that it is still an emerging and evolving market and the long term goals and future trends must be predicted and considered from the beginning. The practical way to address this problem is the selection of the platform-based approach that offers the following benefits:

- Flexibility and scalability to address in terms of performance, costs optimizations, availability of interfaces.
- Fast prototyping to validate the key assumptions and resolve the usability problems by providing pre-integrated hardware / software solutions.
- Reduction of the development costs and shortening the time-to-market.
- Reduction of the BOM costs of final customized solutions.

- Increasing the reliability and the quality of health products by using tested and pre-certified "building blocks" in new designs.
- Product lining i.e. building the line of products optimized for a given market segment and sharing the same base technologies.

A critical aspect of the successful telehealth system architecture is the data security, both for transmission and storage. The personal health data are considered one of the most sensitive information and not surprisingly its confidentiality is the subject to strict regulatory requirements as well as the growing concern. It is expected that as the telehealth systems will get more and more popular, the number of attacks on them will grow therefore making the key technology choices will require encryption functionalities and enough performance.

An important element in ensuring large-scale implementation of telehealth/remote patient monitoring systems is to ensure that they can be provided at a very competitive cost which will allow companies to penetrate into these largely untapped markets which have high growth. OEMs in this space today can realize this by moving over to COTS technologies.

By choosing the off-the-shelf platform based approach, the OEMs and medical device vendors can reduce their efforts on the custom hardware development and fully focus on value add areas of the business such as applications development.

Clearly, developing the successful architectures of telehealth systems is not trivial. It is about understanding the real needs of both the users and the market itself, also the future ones that will certainly come along. It requires solving many trade-offs without having reliable input data.

Intel® Technology Innovation in Telehealth Landscape

Intel's is a world leading provider of the innovative solutions for a variety of markets including Healthcare. Intel's 30-year-old Embedded Communications Group (ECG) focuses on a wide range of vertical embedded segments such as machines, devices and equipment that have computing and Internet capabilities but are not traditional PCs, laptops or servers. Intel ECG offers an extended 7-year lifecycle for those areas that require longer product refresh cycles such as medical. *Intel's Embedded Communication Group focuses on providing technical solutions and resources, such as software / hardware platforms and applications utilizing Intel® technologies.*

Intel® Atom™ Processor

The low-power Intel® Atom™ processor is behind much of Intel's growth into several new computing-related market segments, extending the popular Intel® architecture to embedded industries such as automotive in-vehicle infotainment (IVI), industrial control and automation, media phones and medical. These products also enable market segment innovation through advancements in integrated 2-D and 3-D graphics, video acceleration and support for multiple operating systems including several versions of Windows* and Linux*.

In addition to Point of Sales (POS) and industrial applications, the Intel Atom processor Z5xx series[5] and Intel® Atom™ processor E6xx series[6] also targets an emerging category of Internet-based communications telehealth devices. The package size, average selling price (ASP) and power envelope of the Intel Atom processor Z5xx and E6xx series are ideal for Application Hosting Devices (AHD), which provides communications services over IP and easy, one-touch access to lifestyle applications such as e-mail, text messaging, as

[5] http://edc.intel.com/Platforms/Atom-Z5xx/
[6] http://edc.intel.com/Platforms/Atom-E6xx/

well as acting as a data aggregator to collect data from portable and wellness devices such as blood glucose meters, weighing scales and pulse oximetry devices to mention but some. Remote monitoring based solutions will need to include communication connectivity options in order to get clinician feedback and to allow easy follow up with patients in the home.

To help accelerate this emerging device category, Intel has also introduced an Intel® Evaluation Kit with IEEE 11073 Continua Certified Software Stack for medical applications which will facilitate development of hardware solutions to market. [7]

In 2010, Intel started the production of the second generation of Intel Atom processor products, Intel Atom processor E6xx series[8] which is the first Intel architecture system-on-chip (SoC) designed specifically for embedded applications.

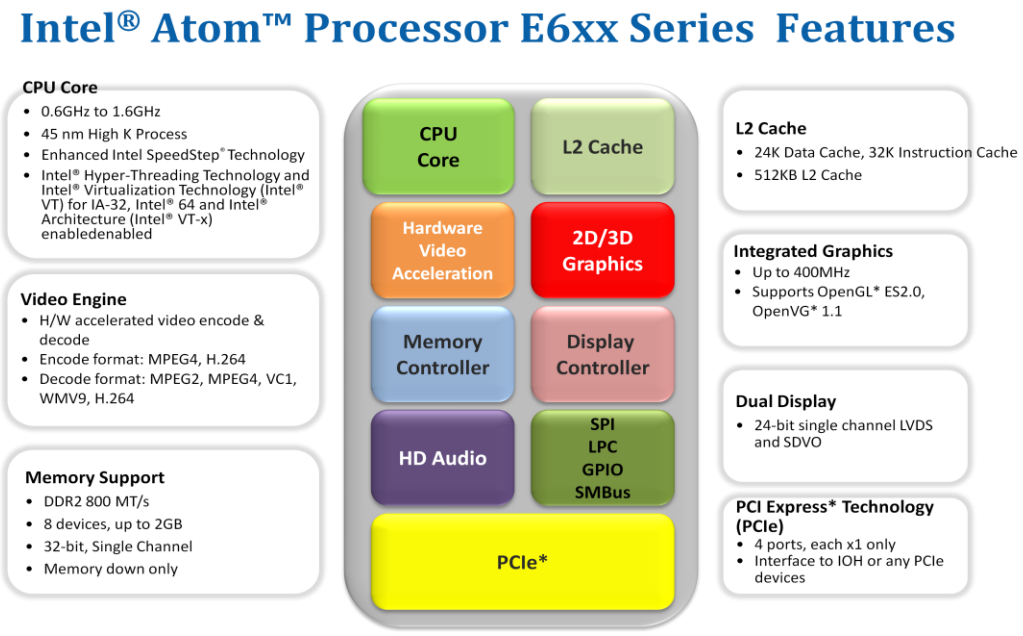

Figure 4: Overview of Intel® Atom™ Processor E6xx Series

[7] http://edc.intel.com/Applications/Medical/Evaluation-Kit/
[8] More web based info: http://edc.intel.com/Platforms/Queens-Bay/

It is based on a significantly redesigned architecture, where graphics, memory controller and video acceleration have been integrated into the processor eliminating the need of using the traditional (northbridge /southbridge) design and resulting in a much smaller footprint and bill of materials (BOM) than most previous Intel architecture solutions.

The new architecture eliminated the bottlenecks connected with the use of the Front Side Bus (FSB) while the integration of the graphics and memory controllers with the core CPU allowed further reduction of the total power consumption of the final solutions.

To support OEMs with the development of their products and, Intel provides a wide range of platforms with a selection of Intel Atom processors, ICH or IOH's delivering optimized solutions as well as providing the flexibility and scalability in addition to a high level of portability across the platforms. The Intel Atom processor E6xx series for example can be used with either a standard Intel® I/O Controller Hub or with third-party chipsets, FPGA or proprietary ASIC (see figure 5 below). It can also be used as a stand-alone SoC without an accompanying chipset. This flexibility allows developers to design systems with significantly lower power, size, and cost. The Intel Atom processor E6xx series is available in lower-power, lower-cost versions for applications that do not require the performance of previous Intel architecture solutions.

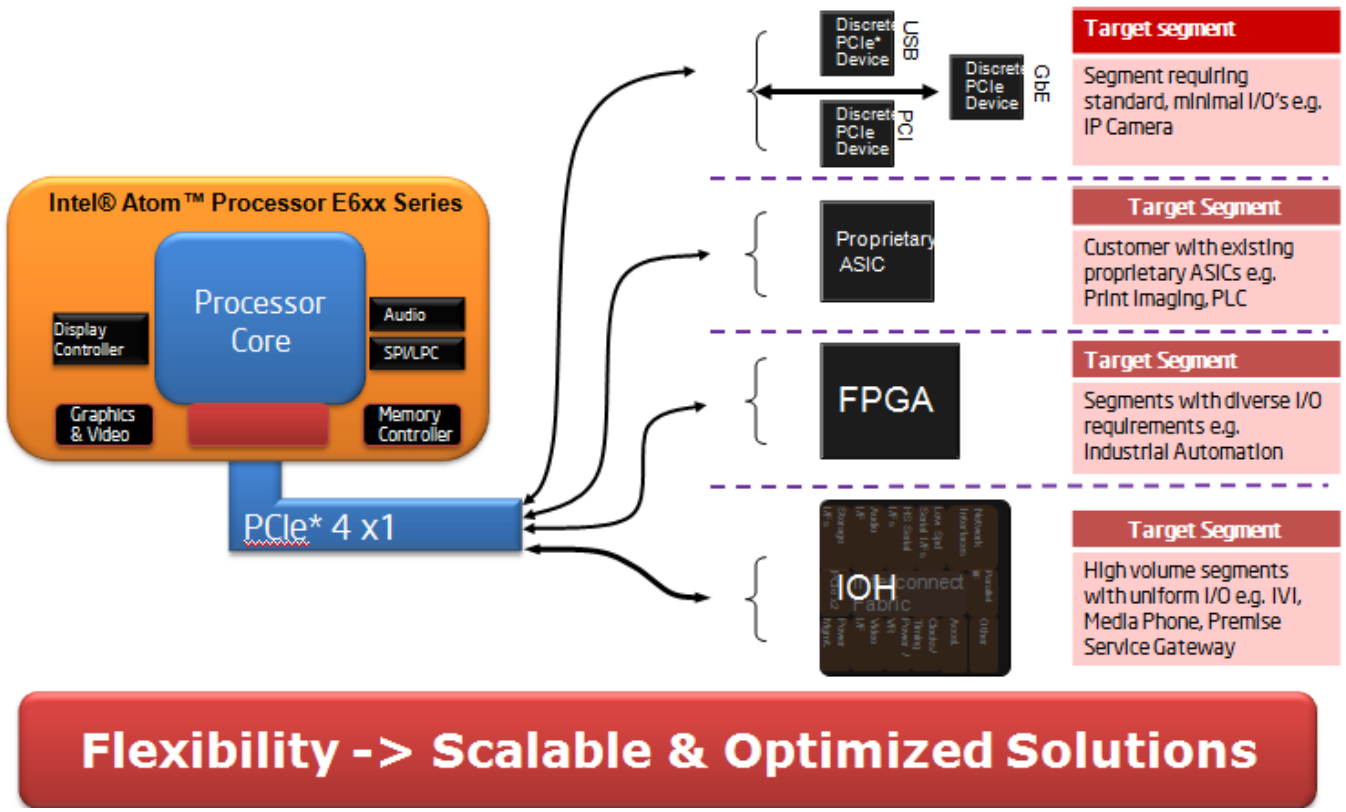

Figure 5: Intel® Atom™ Processor E6xx Series Providing Extended Scalability

Since Intel Atom processor was introduced to the market, it has always been considered as a solution providing unbeatable performance and processing power to the mobile, handheld and portable devices. Now, it also delivers the groundbreaking reduction in power consumption making it the very competitive technology of choice for OEMs planning to enter to or extend their offerings in the home health monitoring market space.

The Intel Atom processor E6xx series not only offers even higher integration levels along with improved graphics and performance density but all this comes at a price starting from $19 @1k unit volumes.

Connectivity – The Key to Successful Telehealth Systems

One of the critical consideration points when developing new remote health monitoring systems on the Patient Side is the connectivity. From the health gateway perspective there exist two main interfaces:

- The interface to communicate with the personal health devices, vital signs monitors, referred to as Personal Area Network (PAN) interface,
- The interface to communicate with the Enterprise side of the system, referred to as Wide Area Network (WAN) interface.

The variety of health and vital signs monitoring devices available on the market complicates the choice of PAN interfaces on the health gateway. Wired interfaces such as RS232 or USB compete with still growing in popularity wireless ones such as Bluetooth*, Bluetooth Low Energy (LE), ANT*, ZigBee* and Wi-Fi. In addition, the commonly used proprietary data communication protocols or profiles can be a big headache for architects of the health monitoring systems. Continua* Health Alliance[9] is trying to address this problem by defining standards and guidelines for interoperability. Overall the Continua Health Alliance is well positioned to help bring some greater solidity and standardization in to a highly fragmented market.

On the WAN side of the Health Gateway the connectivity with the remote servers and service providers also evolves from traditional POST lines, through broadband IP towards the cellular GSM/GPRS/3G or CDMA connections.

The architecture of the Intel Atom processor based solutions addresses this diversity of interfaces, channels and communication protocols by enabling the use of wide range of I/O Controller Hubs (connected to the processor via the

[9] http://www.continuaalliance.org

Front Side Bus) or I/O Hubs in the new Intel® QuickPath Interconnect architecture (connected to the CPU via the DMI or PCIe* interface).

Portability and the Ocean of Available Software Solutions

A unique and exceptional characteristic of Intel Atom processor based solutions is code portability across the platforms. This allows the OEMs to build their product lines sharing the same concept, including the code base and offer the customized solution in the most efficient way. If there is a need to reduce the BOM cost or add processing power for new features – there is always a possibility to rapidly migrate to a new platform.

Another strength of Intel Atom processor based platforms is a variety of Operating Systems supported

- Microsoft* Windows* XP SP3, Microsoft Windows 7
- Microsoft Windows Embedded Standard 2009, Microsoft Windows Embedded Standard 7, Microsoft Windows Embedded POS Ready 2009, Microsoft Windows Embedded CE 6.0 R3
- Fedora* Core 11 Linux*, Ubuntu* Linux
- Android* x86
- MeeGo* 1.0
- QNX* Neutrino*
- Wind River* VxWorks*

By choosing Intel Atom processor based platforms and the high level of portability with the most popular PC platforms, the OEMs get access to the ocean of software solutions available on the market, including the medical and health related applications or software tools. These can be obtained either through extensive Intel Ecosystem or as the commercial off-the-shelf (COTS) solutions available on the market.

Example Applications of Intel® Atom™ Processor Based Solutions in the Health Monitoring Space

Thanks to the unique combination of the high processing power, low power consumption and low cost, Intel Atom processor based solutions are the perfect match in the following Health applications on the patient side:

Next Generation Home Health Gateways

As mentioned previously, the Health Gateway devices play a crucial role on the patient side of every telehealth system. Since the size of deployments is expected to grow to cover thousands or tens of thousands patients, the health gateways will need to be BOM cost effective to control the initial capital costs. On the other side, they still require more intelligence and processing power provided by Intel Atom processor based technology to address to provide additional values to both patients and health service providers, such as:

- Easy and intuitive user interface that hides the internal complexities from users, in particular those with slower adoption of IT technologies. A good example of the well known solution to this problem is the use of graphical touch screens.
- High quality two-way (even three-way) video supporting online sessions between patients and doctors and providing the real sense of live interactions and personalized treatment.
- Ability to socialize patients with chronic diseases and allowing them the participation in various groups and discussions.
- Support for flexible surveys and reminders.
- Ability to provide an educational content including video or animations.

- Mobility and portability to ensure convenient and easy access to health service in and outside of home.
- Ability to use decision support applications on the gateway itself.
- Remote management to minimize the service and maintenance costs.

Home & Health Hubs

The Home Automation is a parallel market to the telehealth focusing on centralized control of lighting, HVAC and other appliances with ability for remote control (from outside of home). The central point if such system is the Home Gateway (also known as Home Hub, Home Communication Device). Although, it focuses on a different market, there is a possibility for technology convergence between home automation and telehealth. In particular, the "home automation for elderly and disabled" systems can be naturally integrated with the telehealth. Such Home & Health Gateways require more powerful platforms with more selection of the wired and wireless interfaces showing a good fit for Intel Atom processor based technologies.

Diagnostics Kiosks

Health diagnostics kiosks are standalone stations with a set of medical devices for gathering the vital signs, video conferencing equipment, etc intended to be used by a larger group of patients in "public" areas such as corporation offices or hard to reach rural areas. Since the diagnostic kiosks are shared between patients the following criteria become more critical:

- Full automation of the processes
- Data security
- Ease of sterilization
- High reliability (including mechanical reliability)

The first diagnostic kiosks provided very basic health services and monitoring of basic health data, but the current trends add the functionalities, sometimes

very specific such as eye examination, spirometry, 3-way video conferencing and more.

Home Dialysis Systems

It is expected that still growing number of patients with permanent kidney failure on one side and desire for independent living on the other are likely the drivers for growing interest of home (hemo-)dialysis systems in the near future. Such solutions require the use of dialysis machines at home that get highly computerized.

Hospital Based Medical Device Integration

Medical Device Integration systems are the means to merge data for a wide variety and large number of medical devices with hospital's infrastructure. These systems translate the data formats and communication protocols into unified formats used in hospital enterprise. In addition these systems provide the remote control on the medical devices including Plug & Play connectivity, scheduling of actions, alarming etc. Medical Integration Systems will play a significant role in the transformation of current hospital infrastructures into the next generation Healthcare IT Enterprise systems.

Example Applications of other Embedded Intel® Architecture Based Solutions in the Health Monitoring Space

Intel offers a broad spectrum of embedded silicon, technologies, components and tools that enable businesses to meet stringent platform requirements and competitive development schedules in the health tele-monitoring space. While our embedded Intel Atom processor products are ideally suited to home health applications necessitating low power, low cost and small form factors requirements Intel also provides a broad range of high performance processors and chipsets with proven capabilities to increase reliability, manageability and security.

High-end Intel® Architecture Technologies Ideal for Senior Living Facilities

Intel architecture is also an ideal solution for a remote patient monitoring system that gathers and reports behavioral and wellness information of a cared-for individual, in their home or at a senior living facility. This new pioneering approach to wellness and safety for senior living is now taking root thanks largely to the beneficial information that it provides to healthcare professional care givers and families.

Additionally another aspect that one needs to factor in, is that behavioral and wellness monitoring helps to increase the quality of life for our aging population. This new technology will not only allow older people to continue to live their lives independently in their home but they also have the peace of mind that someone will be on hand to provide assistance if needed in their home environment.

LynuxWorks* has combined efforts with Portwell. to deliver a proof-of-concept wireless sensor platform that could easily be used with proprietary

and off-the-shelf sensors to help enable professional caregivers to collect and evaluate essential wellness trends of those in need. This data would then be used by clinician and care givers to make better informed decisions while allowing patients to retain their privacy and self-esteem.

To help untether patients, this platform can attach to more than 25 Bluetooth wireless biometric sensors. It also has the capacity to graphically portray patient sensor data for visual monitoring in a familiar Windows environment.

The platform uses the Portwell* WADE-8067[10] which is based on the Intel® Core™2 Duo processor with Intel® vPro™ technology on a mini-ITX board and it can form the basis as the data manager for the network of wireless sensors distributed throughout the senior living facility or home enviroment.

This application provides a very good example of where Intel® Virtualization Technology (Intel® VT)[11] adds value in the wireless remote acquisition of health information. The platform along with LynxSecure* software virtualization has the ability to securely run both a Linux operating system and an unmodified Windows operating system in parallel. The platform demonstrates a means whereby medical equipment manufacturers can quickly port legacy wired sensor applications to a new wireless multicore platform. Intel VT improves the overall flexibility and robustness. Additionally it gives software developers greater control over operating systems and applications and can help in simplifying the migration of legacy applications onto new platforms. Table 1 gives a outline of some of the benefits and capabilities of Intel VT.

[10] http://www.portwell.com/products/detail.asp?CUSTCHAR1=WADE-8067
[11] http://www.embeddedintel.com/special_features.php?article=1402

Table 1: Intel® Virtualization Technology Capabilities and Benefits

Capabilities	Benefits
Isolates applications in secure partitions	Eases software migration and consolidation
Restarts applications without booting the hardware	Improves real-time determinism
Runs RTOS on a dedicated processor core	Gets the system working faster

In addition to Intel VT, the Intel Core 2 Duo processor also supports Intel vPro technology which includes Intel® Active Management Technology (Intel® AMT)[12]. This technology enables IT professionals to query, fix, and protect networked embedded devices, even when they're powered off, not responding, or have software issues. Intel AMT also enables remote software upgrades and asset tracking. This helps to increase system availability and save on costly technical service calls.

[12] *Intel® Active Management Technology (Intel® AMT) requires the computer system to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see* www.intel.com/technology/platform-technology/intel-amt/

Table 2: Features and Benefits of Intel® Active Management Technology

Capabilities	Results
Remote Power State Control	Securely and reliably wake systems for software update and patching. Remotely reboot hung systems.
Remotely diagnose and repair using IDE-R, and SOL	**Remotely diagnose hardware and software issues and fix most software issues using remote boot to a diagnostic image at the management console.**
Hardware-based security features	Protect the system utilizing system defense filters and network isolation. Monitor execution of critical security agents for continued system protection.
Out-of-band discovery and inventory reports	**Remotely access hardware and software inventory information stored in protected non-volatile memory in all system/OS power/health states.**
Events and Alerts	Use Events and Alerts functionality to detect system tampering by sending a message to the remote console if anybody opens up the device.

The Intel Core 2 Duo processor also supports Intel® Trusted Execution Technology (Intel® TXT). This helps by providing a more secure, trusted environment due to the special hardware-based functions built into the hardware which helps in preventing malicious software and hackers from gaining access to confidential data.

All of these Intel technologies are available on many embedded Intel® processors and chipsets which have an extended 7-year lifecycle for OEMs that require longer product refresh cycles. They help in delivering augmented capabilities, including:

- Enhancing software reliability by isolating application code and preventing dangerous interactions
- Improving equipment manageability by providing remote repair and diagnostic capabilities
- Enhancing data security by stopping any device from executing malicious software

Embedded Intel® Architecture Assists Tele-Medicine and Tele-Diagnostics in Rural Area in Emerging Markets

Developing countries tend to experience issues with overall poor infrastructure and non availability of key skilled medical practitioners particularly in rural healthcare centers. As a consequence large areas of many developing countries do not have access to good quality pathology and radiology laboratories. There is now a new trend developing to help tackle this problem by utilizing Tele-medicine or Tele-diagnostics. Intel architecture can play a role here too by providing a cost effective, power efficient, rugged, reliable, scalable and remotely manageable platform.

KTwo Technology Solutions* has made significant progress in this space by developing a solution called Kshema*[13] which is based on Intel® Core™ Duo processor and mobile Intel® 945 Express chipset family. This solution assists in automating basic diagnosis tools like microscopes and ECG machines with intelligent algorithms. This solution for example can facilitate Tele-Pathology. A camera attached to a microscope acquires the images of the blood sample placed under the microscope and then transfers the image to the Kshema box. The onboard imaging algorithm analyzes these images and identifies any disease market cells. It then helps in connecting small primary health clinics to medical expertise by sending a report to a remote pathologist via broadband or GSM networks for further diagnosis.

[13] http://download.intel.com/design/embedded/medical-solutions/Enabling_Quality_Healthcare_to_All_Case_Study.pdf

Conclusion

The aging demographics of developed nations, and the concomitant impact of chronic disease on the economies these nations is forcing changes in the manner in which healthcare systems deliver care to citizens. Remote Patient Monitoring is an emerging solution that has proven itself to be a clinically and economically effective mechanism. Using Telehealth/Telecare as a care delivery solution allows health care providers to leverage the transformational power of ICT to meet the huge growth in chronic disease patients. This service delivery re-design creates business opportunities for companies currently active or trying to enter the telehealth market and the market analysts are predicting compelling growth patterns in this sector. Competition in the sector is strengthening as strong new players awake to this market potential and the market itself will evolve to adjust to the new needs and available technologies. The right product strategies and the right selection of underlining key technologies will determine whether the new products will be successful in this emerging market. Intel have always provided their customers with the evolving roadmap of technologies and solutions that help companies to win in emerging fast paced markets. Intel is an established player in the remote patient market with many leading-edge technologies in health, telehealth and telecare markets being built on our platforms. We will continue to aggressively develop solutions in this important segment.

Author

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