Better Health Technologies

Consumer Electronics Meets Disease Management

THE THIRD NATIONAL DISEASE MANAGEMENT SUMMIT

May 2003

Vince Kuraitis JD, MBA

Better Health Technologies, LLC
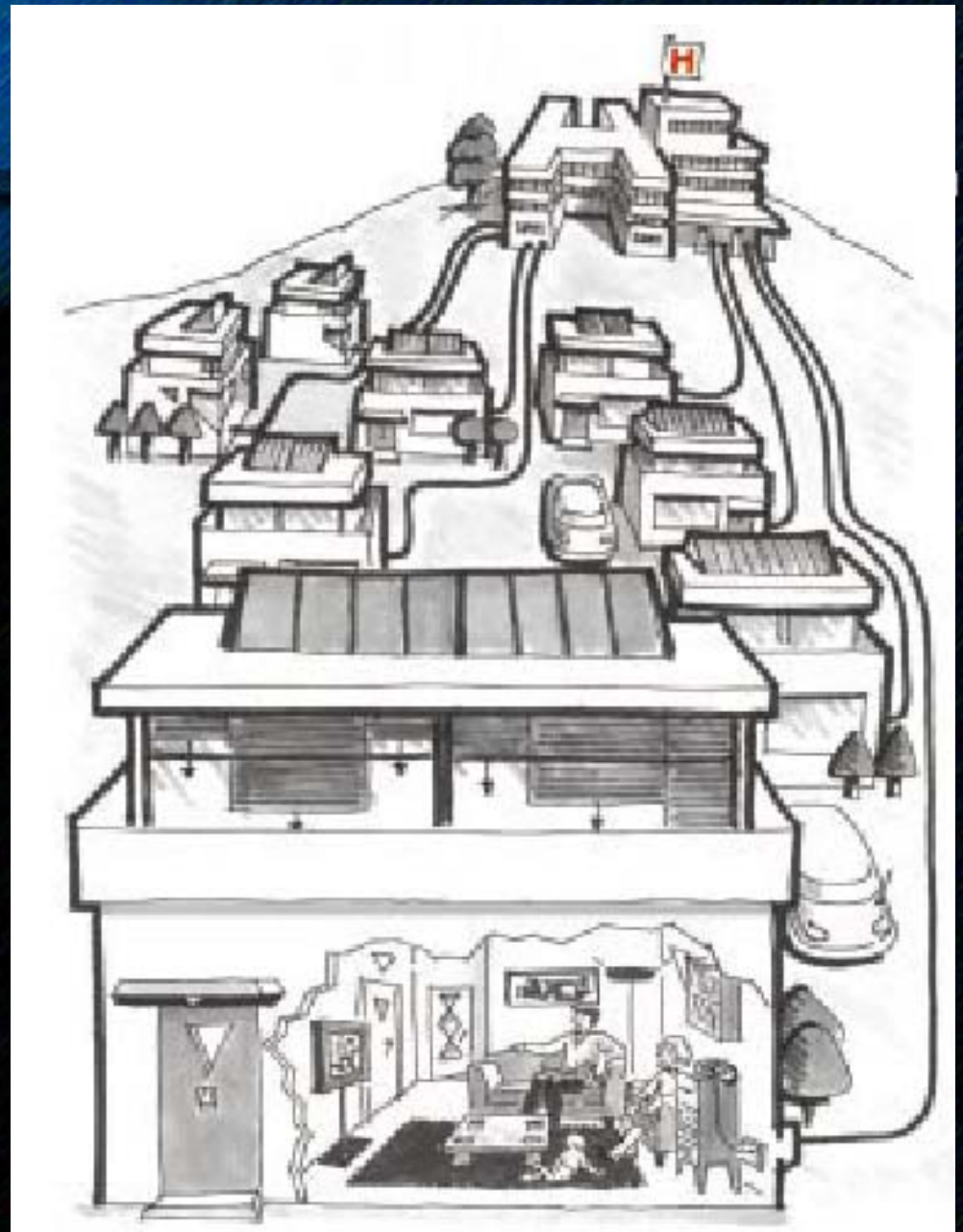
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Ancient Writings Provide Insights About Past Civilizations

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BMJ, Circa 1999

What's wrong with this picture?

Summary

- **Where Are We Now?**   **Fragmented**
  - **Technology**
  - **Business Models**

- **Where Do We Want to Go?**   **Integrated**

- **How Do We Get There?**   **High value, niche apps**

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Where Are We Now?
- Technology
- Business Models

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Samsung Global Network
$35B+ Revenues

47 countries

- **Production Subsidiaries 24**
- **Sales Subsidiaries   35**
- **Branch Offices   20**
- **R&D Center   10**
- **Service Center   1**

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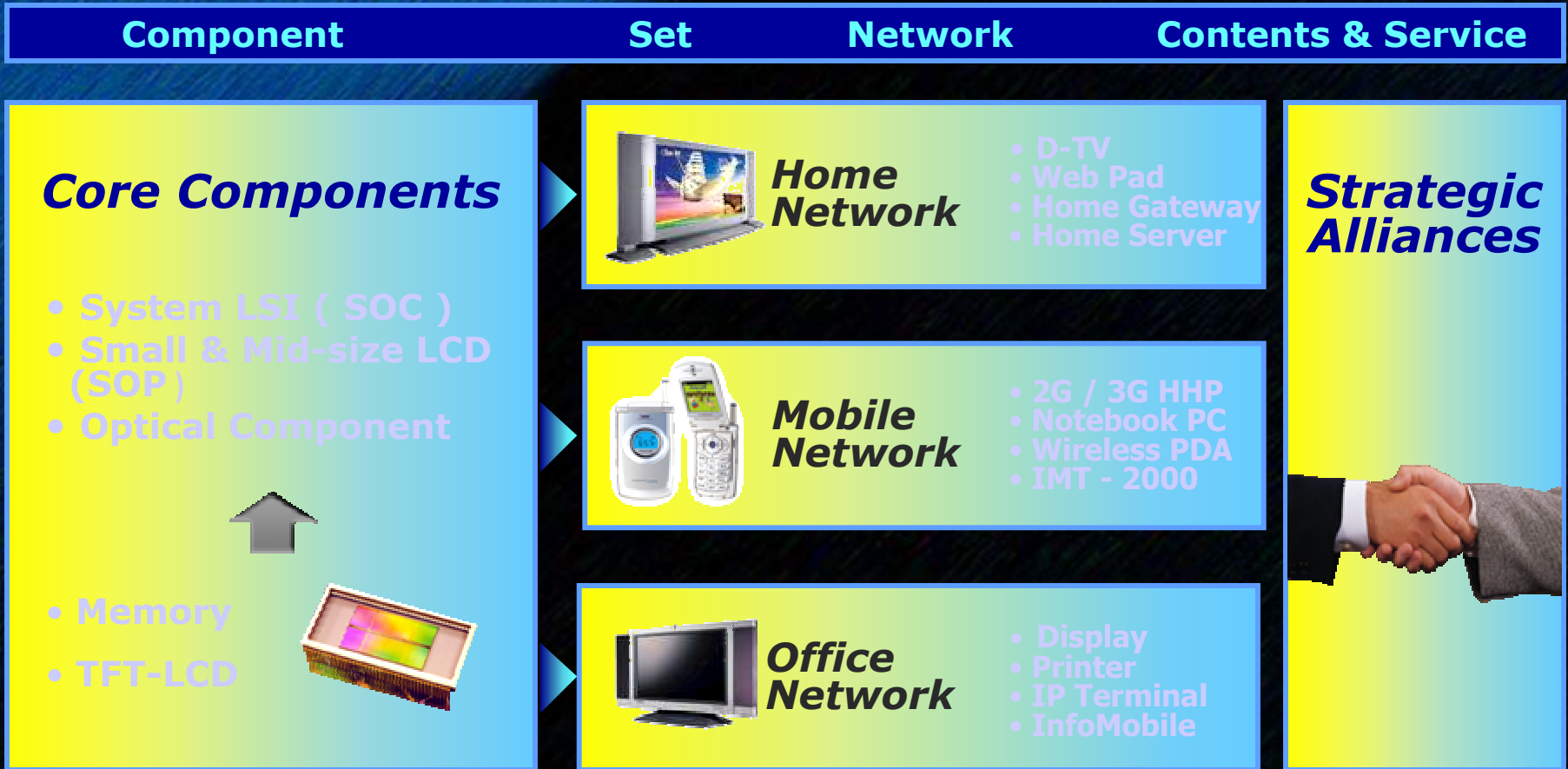© www.bhtinfo.com

21ˢᵗ Century Vision

Vision

Leading the Digital Convergence Revolution
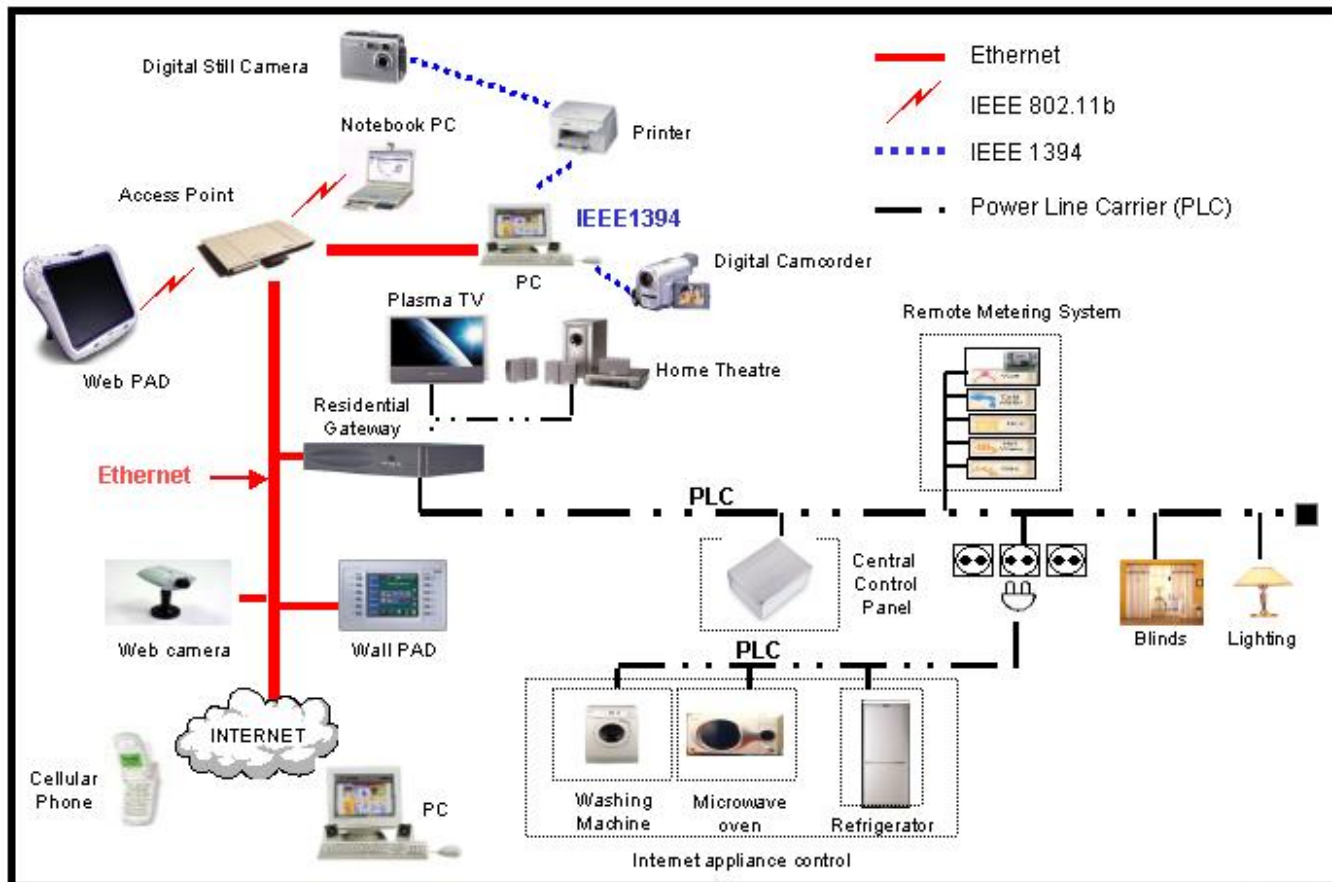
Mission

Digital - ε Company

A company that leads the Digital Convergence Revolution through Innovative Digital Products (Digital) & ε-Process (ε)

4 Strategic Business Areas

Component	Set	Network	Contents & Service

Core Components

- System LSI (SOC)
- Small & Mid-size LCD (SOP)
- Optical Component

- Memory

- TFT-LCD

Home Network
- D-TV
- Web Pad
- Home Gateway
- Home Server

Mobile Network
- 2G / 3G HHP
- Notebook PC
- Wireless PDA
- IMT - 2000

Office Network
- Display
- Printer
- IP Terminal
- InfoMobile

Strategic Alliances

Home Networking:
How will health care connect?

Samsung Electronics Home Networking System Configuration at INTEGER

Additional information:
http://www.samsungelectronics.com/homenetwork/index.html

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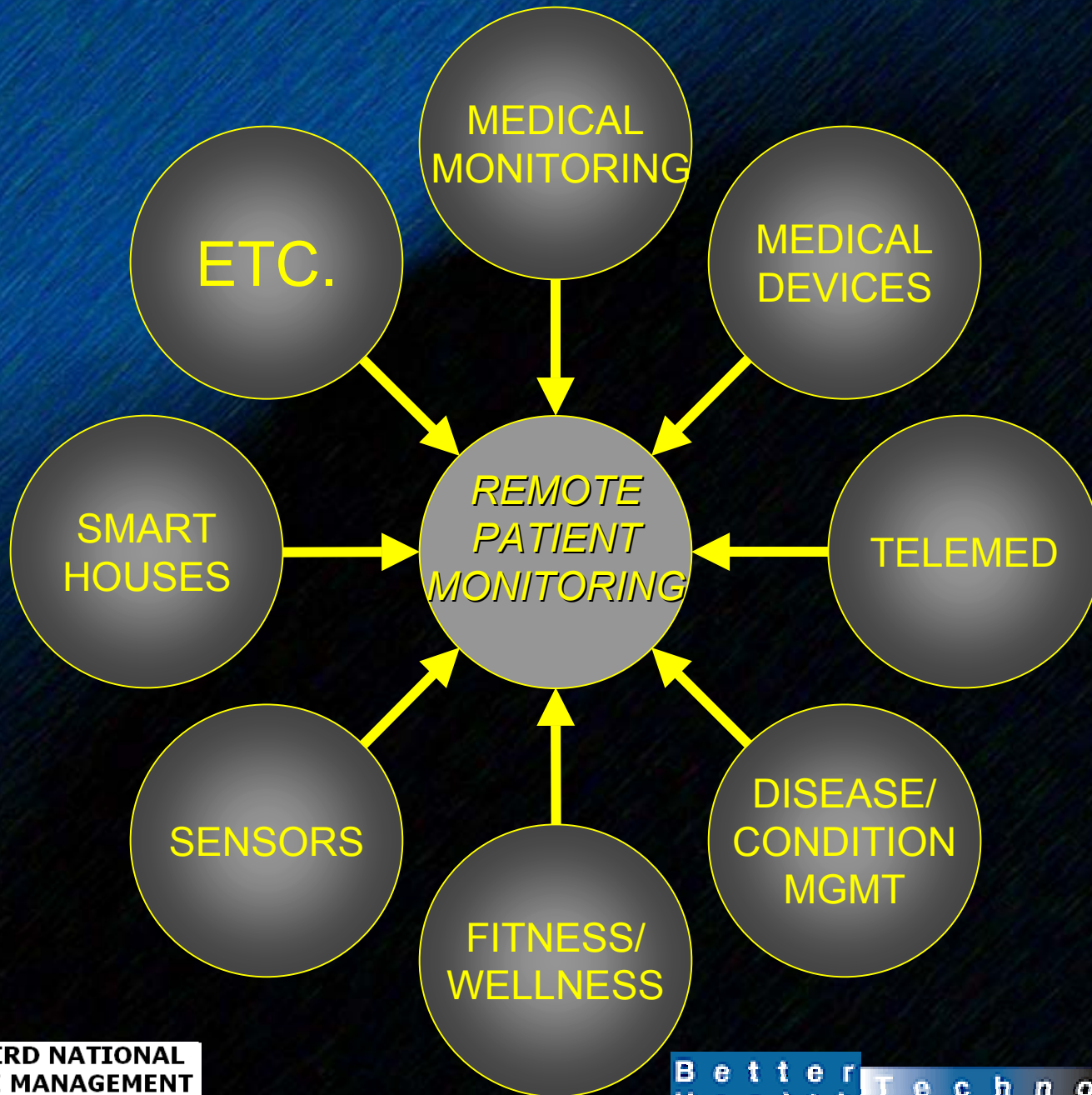
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The World Thru the Eyes of Consumer Technology Companies

- *Stagnation* in technology markets
- *Saturation* points for some consumer technologies
- *Commoditization* of core components

- "Where else can we look for market opportunities?"
- Obvious first opportunities: MP3s, digital cameras
- Next tier -- Healthcare!

Promising e-health killer applications (PEHKAs)

1) Electronic Medical Records (EMRs)
2) Personal Health Records (PHRs) and Self Care
3) Remote patient monitoring (RPM)
4)
5)
-
-
-
-
15)

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RPM Companies

A&D Medical
ADT
Active Corporation
Applied Digital Solutions
AeroTel Medical Systems
Alere
AMD Telemedicine
American Medical Alert
American TeleCare
Avidcare
Biotronik
BodyMedia
Cambridge Heart
Cameron Health
Cardio Control
Card Guard
CardioCom
Cardiomedix
CardioNet
Computerized Screening
Cyber-Care
CyberNet
Digital Angel
Doc@Home
Dmatek
Elite Care
Eyes on Elders
General Electric
HealthCare Vision
HealtheTech

HealthFrontier
HealthHero Network
Heart Alert
HomeFree
HomMed
Honeywell
iMetrikus
IBM
InterComponentWare
IntelliServices
InterCure
In-Touch Monitoring
iSense
iTeleHealth, Inc.
Kivalo
LifeLine Systems
LifeConnect
LifeLink
Lifemasters
Lifestream
Lucent Technologies Bell Labs
March Networks
M-Biotech
Medipattern
Medisana USA
Medisignal
Medtronic
Micronics
MobiHealth
Neptec

Nexan
Non-Invasive Monitoring Systems, Inc.
Omron
Panasonic
Personal Electronic Devices
Phillips Medical Systems
Pioneer Medical Systems
Polar
QRS Diagnostic
Roadside Telematics Corp
Samsung
ScottCare
Sensatex
Sensitron
Siemens
Sony
Spacelabs Medical
SportBrain
Stayhealthy
Telemed.com
Telemedicine Group
Telemedicine Solutions in Healthcare
TeleVital
Therasense
TransMedEx
VISICU
Vitel Net
VivoMetrics
Welch Allyn
Wellness Monitoring, Inc.
World Wide Video

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MEDICAL MONITORING

ETC.

MEDICAL DEVICES

SMART HOUSES

REMOTE PATIENT MONITORING

TELEMED

SENSORS

FITNESS/ WELLNESS

DISEASE/ CONDITION MGMT

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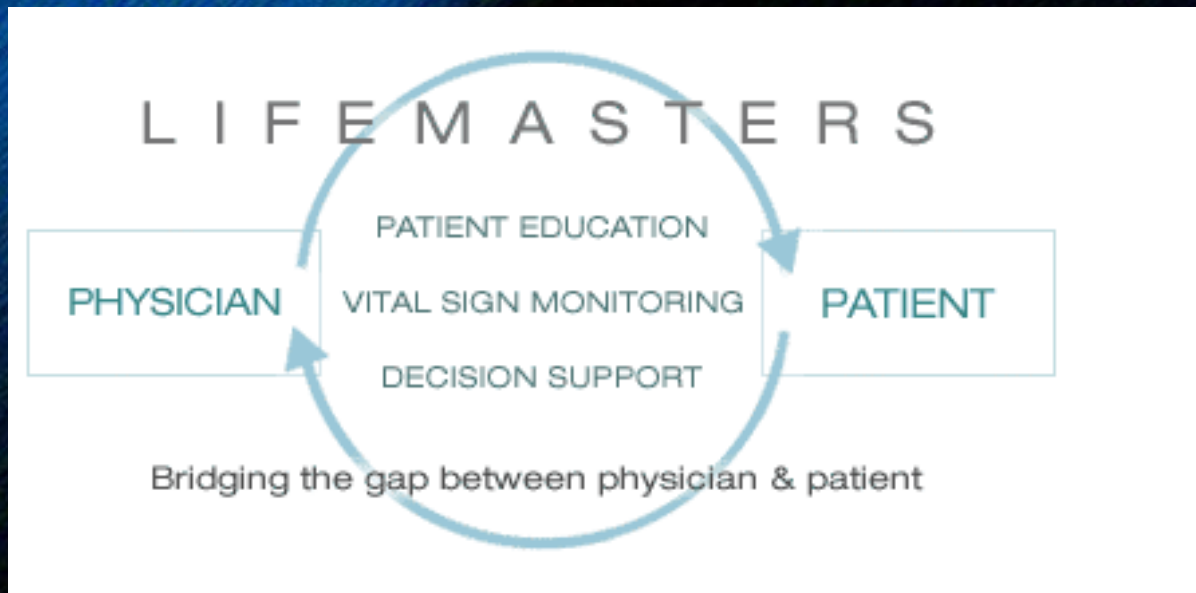
Medical Monitoring

Medical Devices

Medtronic
When Life Depends on Medical Technology

Medtronic is the World's Leading Medical Technology Company, Providing Lifelong Solutions for People with Chronic Disease
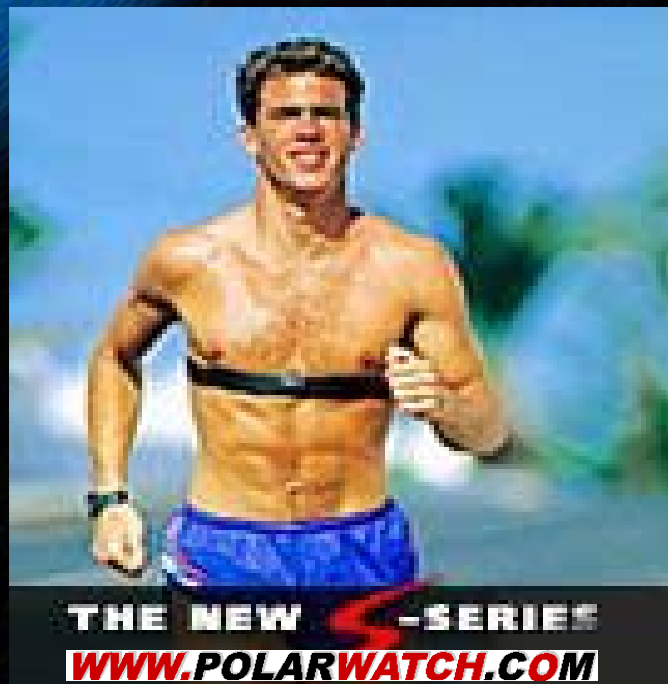
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Telemedicine

American TeleCare

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Disease Management

LIFEMASTERS

PHYSICIAN

PATIENT EDUCATION

VITAL SIGN MONITORING

DECISION SUPPORT

PATIENT

Bridging the gap between physician & patient

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Fitness/Wellness

THE NEW S-SERIES
WWW.POLARWATCH.COM

Sensors

Smart Houses

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3 Definitions of U.S. Chronic Disease Market Size
(Drawn to scale)

$500 M DMSCs

$20 –$100 B Opportunity*

$ 1 Trillion -- Patients with Chronic Conditions

* Projections by BCG and First Union

3 Definitions of Chronic Disease Market Size
(Drawn to scale)

$350 M DMSCs

$700 B Chronic Care Patients

"Inside the Box"

"Outside the Box"
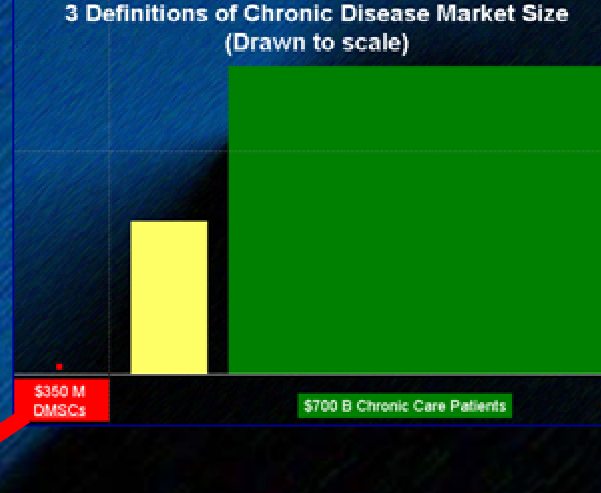
DMSCs (Business Model)

- Prevent unnecessary hospitalizations and ER visits
- Save $$ short term for payor
- Quality w/o ROI only "sells" for a few diseases
- 4 to 6 top diseases
- Done "to" the patient
- Care coordinator = 3rd party
- Local/regional focus
- Outsource vs. build

DM (Care Delivery Model)

- Optimize patient health status & clinical outcomes
- Save $$ long term for payor or patient
- Health care consumerism/ patient empowerment
- 100+ conditions/diseases
- Done "by" the patient
- Care coordinator = patient or doctor
- Not geographically bound
- Assembly from components viable

4 Different Chronic Disease Customer Segments Emerging

MCOs

Employers

Patients/Caregivers

Providers

Varying Value Propositions for Chronic Care
Who cares most about _____?

	MCOs			
Short-term Medical Costs	✔			

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Varying Value Propositions for Chronic Care
Who cares most about _____?

	MCOs	Employers	Patients/ Caregivers	Providers
Short-term Medical Costs	✔	✔		
Health/Quality of Life			✔	
Clinical Quality			✔	✔
Peace of Mind/Monitoring			✔	
Productivity		✔		
Convenience/Time Savings				✔
New Revenue Source				✔

Varying Value Propositions for Chronic Care
Who cares most about _____?

	MCOs	Employers	Patients/ Caregivers	Providers
Short-term Medical Costs	✔	SHPS		
Health/Quality of Life			Stress Less.	
Clinical Quality				Medtronic *When Life Depends on Medical Technology*
Peace of Mind/Monitoring			✔	
Productivity		NCQA		
Convenience/Time Savings				patient keeper
New Revenue Source				Cardiobeat

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Where Do We Want to Go?

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Home Networking:
How will health care connect?

Samsung Electronics Home Networking System Configuration at INTEGER

Additional information:
http://www.samsungelectronics.com/homenetwork/index.html

Promising e-health killer applications (PEHKAs)
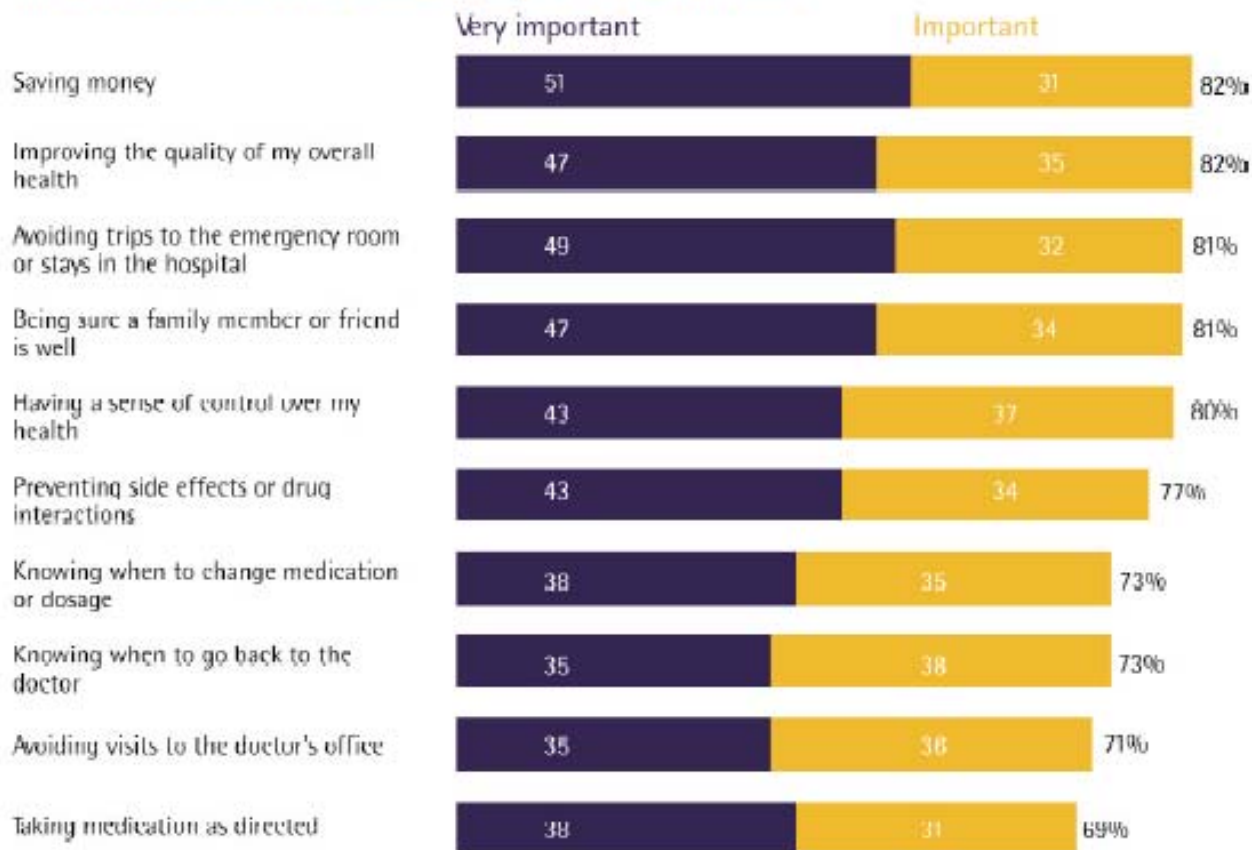
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Are consumers interested?

Survey respondents are very receptive to electronic home healthcare

Most rate all the benefits listed very important or important

	Very important	Important	
Saving money	51	31	82%
Improving the quality of my overall health	47	35	82%
Avoiding trips to the emergency room or stays in the hospital	49	32	81%
Being sure a family member or friend is well	47	34	81%
Having a sense of control over my health	43	37	80%
Preventing side effects or drug interactions	43	34	77%
Knowing when to change medication or dosage	38	35	73%
Knowing when to go back to the doctor	35	38	73%
Avoiding visits to the doctor's office	35	36	71%
Taking medication as directed	38	31	69%

How Do We Get There?

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The Opportunity

- **Develop high value, expandable, niche applications**
- **Migrate to an integrated platform**

First Generation -- 1998

Personal Information Carrier (PIC)

- Same size as dog tag
- 2 MB/sec Data Transfer Rate
- Flash Memory
- Capacities: 8-64 MB
- Removable hard drive
- OS Interoperable

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Second Generation -- 2003

Portable PHR …

CapMed HealthKey

HealthKey combines CapMed's award-winning Personal Health Record software, with award-winning DiskonKey technology. HealthKey is the first portable health record tool utilizing USB technology.

TEPR
Awards 2001 Winner

CapMed

Multiple value propositions for second generation health care PSD

Health Management Tool Benefits

- ◆ Managing Chronic Conditions
- ◆ Tracking & Trending Information
- ◆ Adherence to Treatment Schedules
- ◆ Health & Wellness Education in Context
- ◆ Patient/Doctor Compliance
- ◆ Communicating Information
- ◆ Centralize Fragmented Records
- ◆ Comprehensive Medical History
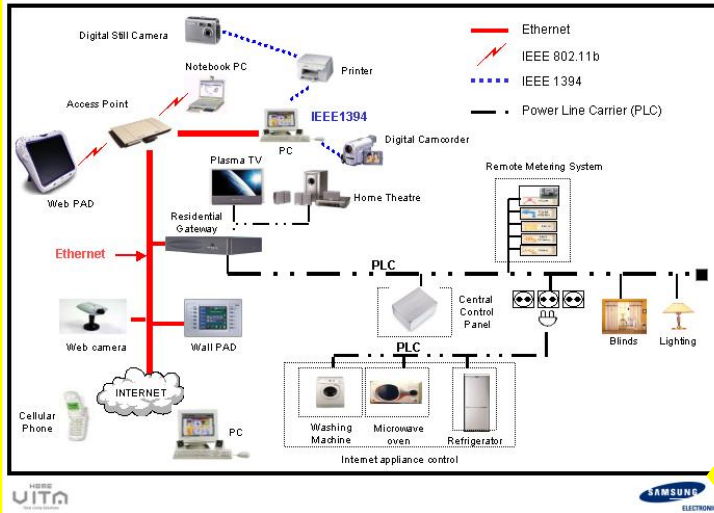- ◆ Transporting Medical Images

CapMed

# Third Generation -- Samsung MyKey Health

KeySafe™ and MyKey™
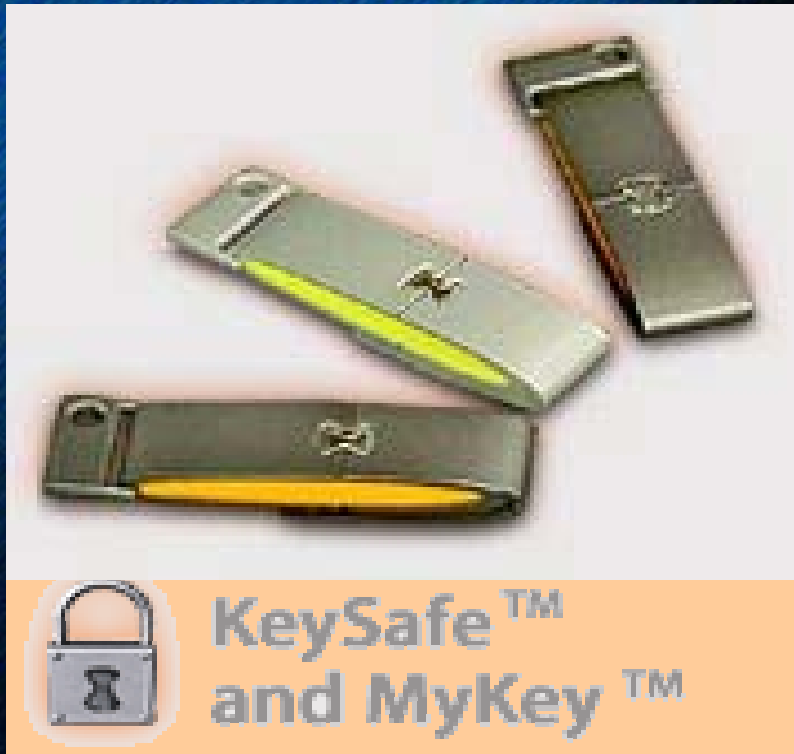
- Value proposition of 2nd generation HealthKey (see previous slide)
- + Customization for health care applications, e.g.,
  - Security/authentication
  - Privacy
  - etc.
- + Integration with:
  - EMR/PHR and health care providers
  - Home network applications, e.g., personal finances
  - Mobile network applications

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Convergence

Samsung Electronics Home Networking System Configuration at INTEGER

Electronic Medical Record/ Personal Health Record
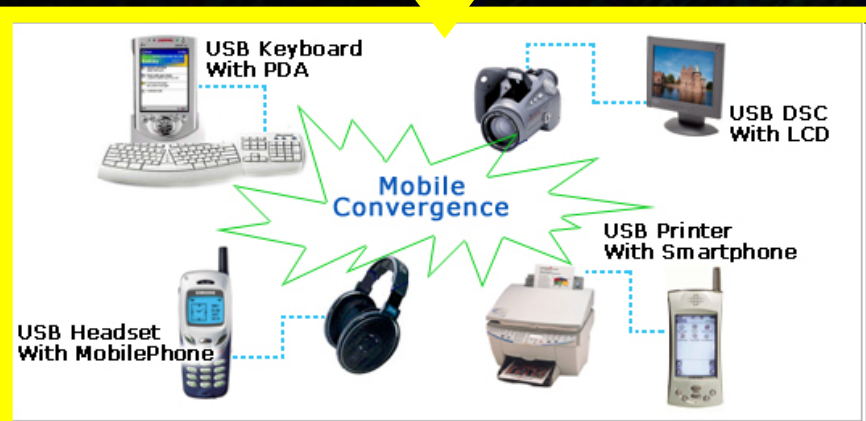
Challenges

- **Reimbursement**
- **HIPAA: Privacy/confidentiality issues**
- **Physician resistance**
- **Technology maturity**
  - **Infrastructure**
  - **Bandwidth**
  - **Standards**
  - **Friendly user interfaces**

The Dark Side

WORLDNETDAILY EXCLUSIVE

'Digital Angel' lands in China
Will implantable tracking chips be used by totalitarian government?

Posted: March 28, 2002
1:00 a.m. Eastern

Editor's note: The April issue of WND's monthly print magazine, Whistleblower, takes an in-depth look at implanted chips, futuristic surveillance technologies and the virtual end to privacy. One of the companies profiled in that issue is the subject of this report – Digital Angel Corporation, manufacturer of the "Digital Angel" tracking device.

What Do Consumer Technology Companies Bring to the Table?

- **Technology**
- **Intellectual property**
- **Marketing expertise**
  - **Consumer marketing**
  - **Scalability -- "Mass market" mindset**
  - **Global presence**
- **Unbiased by delivery system politics and culture**
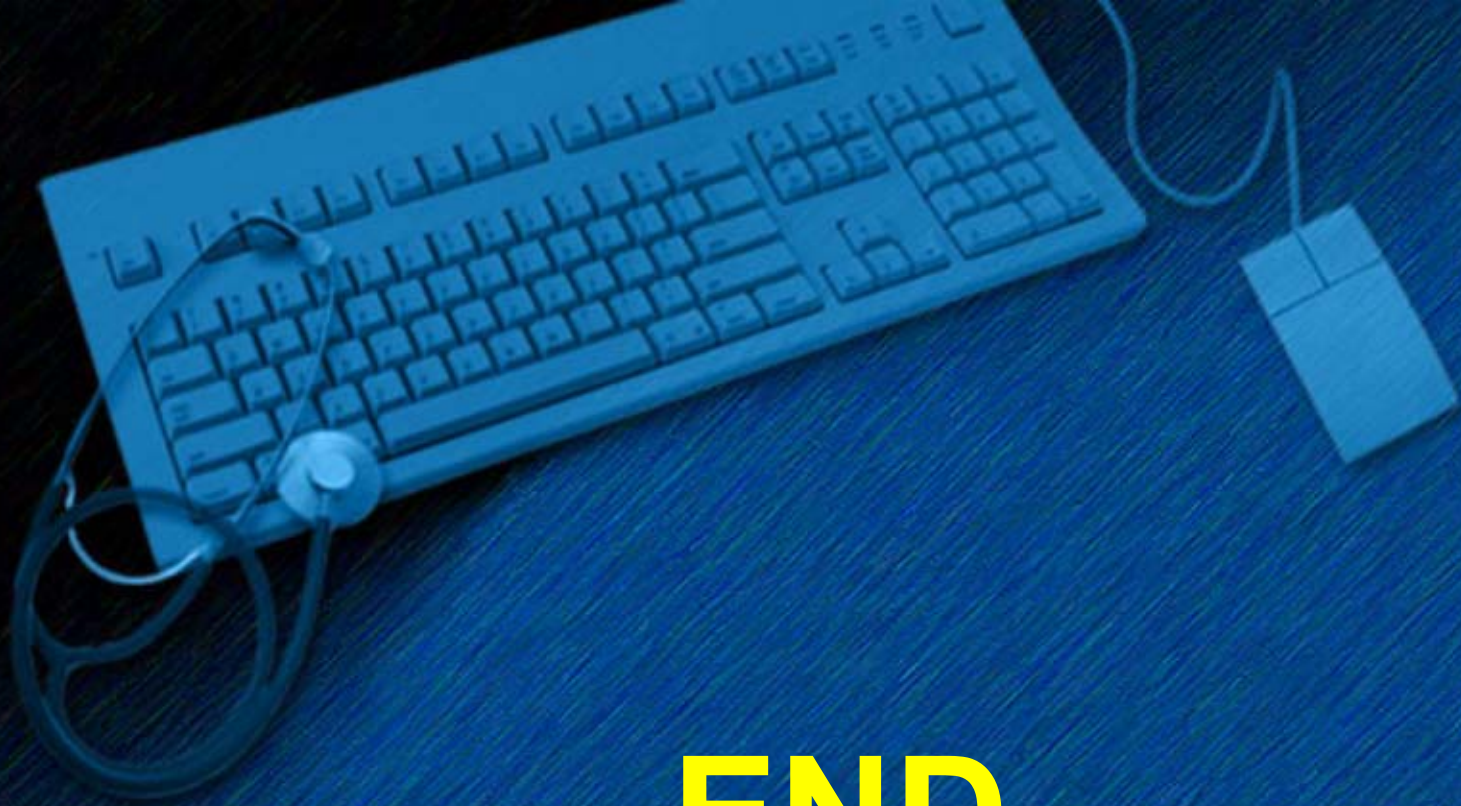- **Capital**

Summary

- **Where Are We Now?**   **Fragmented**
  - Technology
  - Business Models

- **Where Do We Want to Go?**   **Integrated**

- **How Do We Get There?**   **High value, niche apps**

END

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- **Creating value for patients and shareholders**

- **Strategy, business models, partnerships**

- **Disease/care management and e-health**

- **Consulting/Business Development**

- E-Care Management News
    - Complimentary e-newsletter
    - 3,000+ subscribers in 27 countries worldwide
    - Subscribe at **www.bhtinfo.com/pastissues.htm**

BHT Clients

Pre-IPO Companies

Cardiobeat (medical device/DM)

EZWeb

Sensitron

Life Navigator (remote monitoring connectivity)

Medical Peace (physician driven care management)

Stress Less (stress condition management)

DiabetesManager.com (Internet diabetes DM)

CogniMed (highest cost/risk patient management software)

Caresoft (consumer focused DM)

Benchmark Oncology (oncology DM)

SOS Wireless (cellular phone technology)

Click4Care (Internet DM)

eCare Technologies (Internet DM)

Established organizations

Medtronic
-- Neurological DM (medical devices/chronic disease solutions)
-- Cardiac Rhythm Patient Management

Samsung Electronics, South Korea

Siemens Medical Solutions

Joslin Diabetes Center

National Rural Electric Cooperative Association (employer coop)

Disease Management Association of America

Blue Cross Blue Shield of Massachusetts (MCO)

PCS Health Systems (PBM)

Varian Medical Systems (oncology equipment & systems)

VRI (behavioral health care management services)

Washoe Health System (delivery system)

S2 Systems (transaction processing software)

CorpHealth (MBHO)

Physician IPA

Centocor (biopharma)

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