Current Market Dynamics and Future Vision of the Care Cycle

Tim Irish

Analysts’ Meeting
June 15th, 2005
Overview

• Market and Customer trends

• The Care Cycle and Molecular Medicine
Healthcare is the world’s largest service sector

Worldwide Healthcare Expenditure:
US$3,300 bln in 2002
North America makes up 49% of the worldwide spent

Worldwide Healthcare Expenditure as % of GDP

Healthcare Expenditures will grow from ~8% of worldwide GDP to ~10% in 2010

Source: Medistat

Source: WHO
Demographics and economic developments add to long term growth.

As national economies develop, healthcare investments follow…

Sources: United Nations, Victor R. Fuchs (Stanford University)
Demographics and economic developments add to long term growth

As national economies develop, healthcare investments follow…

Source: Medistat
Philips Medical Systems
$1 of Healthcare creates $2.5 of economic value through better outcomes

Source: Medtap report, The Value of Investment in Healthcare, 2005
Healthcare delivers huge benefits

• Benefits from increased spendings since 1980, USA:
• From a human perspective:
  – 470,000 less deaths
  – 2,300,000 less people with disabilities
  – 206,000,000 days less spent in hospital
• From an economic perspective:
  – Delivering $1600 bln of economic value

Source: Medtap report, The Value of Investment in Healthcare, 2005
Medical technology continues to transform Healthcare

**Imaging**
early diagnosis saves lives and reduces costs

**Minimally invasive surgery**
reducing patient trauma and costs

**Healthcare IT**
Right Information at the right time
enables better treatment and lower costs

**Molecular Medicine**
Preventing disease from happening

Around 70% of the survival improvement in heart attack mortality is a result of changes in technology.”

Cutler & McClellan, 2001
“Imaging is key to lower Healthcare costs and improved patient outcome”

Imaging is about:
• Better diagnosis for better treatment
• Earlier detection to catch disease early
• Minimally invasive surgery to avoid trauma and shorten procedure time

McKinsey, 2004

“Continued advances in Imaging modalities will transform medicine during this decade”

SG-2, 2004
Big cost savings by Imaging in large teaching hospital

<table>
<thead>
<tr>
<th>6 year CAGR</th>
<th>Hospital costs</th>
<th>Imaging costs</th>
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<tbody>
<tr>
<td>cost growth</td>
<td>8%</td>
<td>8%</td>
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<tr>
<td>Increase in number of patients imaged</td>
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<td>12%</td>
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<td>Imaging costs/patient</td>
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<td>- 4%</td>
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Beinfeld et al., Radiology, 2005; 17,200 patients, 1996 – 2002

$1 of imaging saved $3 in hospital costs
Ever expanding range of clinical applications

X-Ray

Ultrasound

CT

MR

Nuclear Medicine
Ever expanding range of clinical applications

<table>
<thead>
<tr>
<th>X-Ray</th>
<th>Diagnosis of blood vessels – Heart, Brain, Body; skeletal trauma (e.g., broken bones), chest &amp; lungs, gastro-intestines (digestive tract), high-resolution mammography</th>
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</thead>
<tbody>
<tr>
<td>Ultrasound</td>
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<td>CT</td>
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<td>MR</td>
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<td>Nuclear Medicine</td>
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<tr>
<td>X-Ray</td>
<td>Ultrasound</td>
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<td>Cardiology: Detection, diagnosis and treatment of heart disease, heart attack, acute stroke, vascular disease; Ob/gyn; General Body: kidneys, liver, thyroid, and blood vessels. Also being used for breast imaging</td>
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<td>CT</td>
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Ever expanding range of clinical applications

- **X-Ray**
- **Ultrasound**
- **CT**
- **MR**
- **Nuclear Medicine**

Cardiac & Vascular; Neurologic Diagnosis; Pelvic/abdominal, Spine, Lungs; Accidents/trauma cases; Cancer Detection; CT Angiography (CTA)
Ever expanding range of clinical applications

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<th></th>
<th>Soft tissue, such as the brain and nervous system; Spine, skeleton, joints: bone, cartilage, ligament, tendon, and images of inside the bone; Cardiovascular/angiography: (MRA); ‘Functional’ fMRI; Abdominal; Pediatric</th>
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Ever expanding range of clinical applications

<table>
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<tr>
<th>X-Ray</th>
<th>SPECT: Coronary artery disease; Bones, lungs, brain, blood, gastrointestinal organs</th>
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<tbody>
<tr>
<td>Ultrasound</td>
<td>PET: Primary cancer and metastases; Neurology – stroke, Alzheimer’s, Parkinson’s</td>
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<td>CT</td>
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<td>MR</td>
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<tr>
<td><strong>Nuclear Medicine</strong></td>
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Growth in imaging procedures driven by innovations in technology & clinical applications

Avg. 10-Year CAGR

- NM: 15%
- CT: 25%
- MR: 10%
- US: 5%
- CV X-Ray: 6%
- General X-Ray: 2%
- TOTAL: 4%
- Total Excl GXR: 10%

Source: Frost & Sullivan
Philips Medical Systems
Procedure Volume will continue to grow….
Example: USA

Source: SG2, June 2005
Philips Medical Systems
Creating long term growth in Imaging Market

On average by 5% per year

Source: Nema, Cocir, JIRA, PMS analysis
Customer Dynamics

Continuation of established trends

- Privatization of Healthcare
- Consumerism
- Pay-for-Performance programs
- Staffing shortages
- Productivity opportunities through new technology
- Increased New hospital construction

New dynamics are becoming manifest:

- More large, multiyear, partnership deals with higher margins and risks
  - Strategic partnerships
Hospitals and Health care systems continue to be financially challenged. Example: USA

Source: Healthcare Advisory Board 2004
Customers are slowly consolidating

Number of Community Hospitals
Total number of hospitals and beds

Community hospitals in the USA
Similar trends in many Western countries

Source: American Hospital Association, 312-422-3000, sha.org
Buying needs are changing towards longer term partnerships

**Technology Procurement:**
Alliance-level pricing for products and services and ongoing technology availability updates

**Support and Services:**
Biomedical service and a complete program of consulting and marketing assistance for your facility

**Capital Financing:**
Full-service financing resources include strategies for tax-free capital and variable term financing

**Construction and Planning:**
Coordination of all aspects of new facility planning and implementation thru a consortium of industry experts

**Research:**
Mutually significant projects and collaborations defined with short and long-term objectives

**Education and Training:**
Philips offers a comprehensive on-line CE program to keep technologist credits up to date. New-user physician training programs provide revenue generation opportunities

**Partnership Elements**
University of Alabama, Birmingham

Today
• Largest University Health System in Southeastern United States
• Complex includes 5 City Blocks
• 2.1 Million Square Feet
• 13 Major Free Standing Buildings

2010
• 75 City Blocks
• 12 Million Square Feet
• 17 Free Standing Buildings
Overview

- Market and Customer trends
- The Care Cycle and Molecular Medicine
Changing Care Cycle: Liver Cancer

- Diagnostics
- Therapy
- Follow Up
- ICU
- Rest in Peace
- Ward
- Lab
- Symptoms
- Surgery
Changing Care Cycle: Liver Cancer

- Therapy
- Information & Decision support
- Follow Up

- Diagnostics
- Lab
- Symptoms
Changing Care Cycle: Stroke

- Symptoms
- Diagnostics
- Therapy
- ICU
- Follow Up
- Ward
- Rest in Peace
- Surgery
- 40% Mortality today
- 30% loss of independence

40% Mortality today
Changing Care Cycle: Stroke

- Diagnostics
- Information & Decision support
- Therapy
- Follow Up
The ingredients of Molecular Medicine

Biomarkers
Discovery

In Vitro Diagnostics
In Vivo Imaging

Image-guided
therapeutic agents

Linking disease
to bio-molecules

Diagnosing Disease

Targeted therapeutics

Courtesy: Ciphergen

Phlips Medical Systems
Changing Care Cycle: Preventing heart attacks
…Breakthrough in Biochips for molecular biomarkers

Building on Philips competences:
- Sensitive and compact magnetic detection techniques
- Magnetic nanoparticles as detection probes for bio-molecules
- Semiconductor technology
- Order of magnitude more sensitive than current technologies
Tomorrow’s Modality: new Molecular Diagnostics platforms

To fight sepsis:

- An estimated >1.5 mio sepsis cases (US and Europe only) every year in hospitals with an increasing rate of mortality

- Utilizing Philips in-house competencies in Miniaturization and Integration, to reduce diagnosis from days to hours
…Tomorrow’s Modality Today:
Unique Molecular Imaging platform…

First high end SPECT-CT

Unique information
To build the new Medical Paradigm: Molecular Medicine

The Future

Your own biochemistry becomes the basis for diagnosis and treatment

Molecular imaging will screen people with genetically inherited & life-style risks
Conclusions

• Healthcare and medical technology add both human and economic value
• Very predictable growth outlook based on established growth drivers (demographics, chronic illness, technology, privatization and consumerism)
• Technology innovation to accelerate – ever faster, ever more accurate and much earlier (more screening)
• The future lies in linking new technology applications to the Care Cycle
• Massive opportunities to increase both clinical outcomes and health economics through Care Cycle improvements