Right Now...
Strategy...
Vision...
We Believe...
Future...

Bill Gates says...

<table>
<thead>
<tr>
<th>Client Operating Systems</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2000 Professional</td>
<td>Windows ME</td>
<td></td>
</tr>
<tr>
<td>Windows CE</td>
<td>Windows XP Professional</td>
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</table>

<table>
<thead>
<tr>
<th>Smart Devices</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pocket PC</td>
<td>Mobile Explorer™</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tablet PC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User Experiences</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Explorer</td>
<td>Visio 2002</td>
<td></td>
</tr>
<tr>
<td>Office XP</td>
<td>Next version of Office</td>
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</table>

<table>
<thead>
<tr>
<th>Building Block Services</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passport</td>
<td>&quot;Hello!&quot; Services</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Developer Tools</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Studio 6.0</td>
<td>Visual Studio.NET Beta 2</td>
<td></td>
</tr>
<tr>
<td>SOAP Toolkit 2.0</td>
<td>.NET Framework Beta 2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Servers</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2000 Server</td>
<td>Windows 2000 Advanced Server</td>
<td></td>
</tr>
<tr>
<td>SQL Server 2000</td>
<td>Exchange 2000 Server</td>
<td></td>
</tr>
</tbody>
</table>

User Experiences: A good User Experience puts together all of the XML Web services and presents software a particular user needs, and presents everything to the user in an integrated way. It makes sense—even if it calls on the Web services provided by other companies in the marketplace. Microsoft will deliver new tools for knowledge workers, developers and small, medium and large businesses, and customers who believe that Microsoft is best able to provide the right tools to address their needs. Therefore, Microsoft offers these products today to build high-value XML Web services that solve today’s integration and interoperability problems. For example, when Checkpoint offered its electronic payment processing capabilities through an XML Web service, it expanded its market reach to new small-business customers, resellers, and online marketplaces that used a variety of computer systems and accounting packages. Those new customers now enjoy streamlined accounting processes and more efficient cash-flow management.

FIVE EASY STEPS

1. Educate yourself and your IT department about XML Web services and Microsoft .NET.
2. Investigate Windows 2000, Office XP, and the Microsoft .NET Enterprise Servers as a way to upgrade the XML capabilities of your systems and infrastructure.
3. Download and evaluate beta versions of Microsoft’s developer tools.
4. Create pilot projects that test XML Web services.
5. Instruct that you vendors have a roadmap for making their applications accessible as XML Web services.

Get started and learn more. For more information about XML Web services and Microsoft .NET, visit microsoft.com/net.
Unlike desktop computers, which are fairly homogeneous, choosing mobile devices involves looking at durability, size, battery operation, operating system, application requirements, support price, and so on. Mobile device prices vary greatly, from a $300 phone or pager to a $2,000 laptop computer. Carefully evaluate the true needs of your users, but don’t be quick to take the low road; picking a device that doesn’t fully accommodate users will cost you more in the long run.

Choosing a mobile device is just the first step. With almost as many network providers as cellular radio providers, you need to carefully evaluate coverage, speed, network capacity, reliability, latency, technical and developer support, and cost.

Consider also whether you want to outsource some or all of your wireless solution. Plenty of IDS (software solutions providers), ASPs (application service providers) and WAPs (wireless ASPs) have experience with wireless networking issues and can design and build applications that may be too resource-intensive to undertake in-house. In fact, 79 percent of survey participants who are implementing a mobile consumer solution plan to rely on the aid of a third-party provider.

Effective communications
Emerging mobile applications focus on the wireless extension of enterprise information. Companies can easily adapt those mobile applications to their information infrastructure to extend back-office applications to their wireless system. These mobile applications use standard Web browsers to deliver all the information road warriors need.

The reader we polled agreed that users need this functionality. 84 percent require that the wireless solution synchronize mobile data with corporate databases.

Mobile users communicate using a variety of devices, so corporate data must be formatted and filtered appropriately for each wireless device, whatever it may be. Some organizations buy packaged applications from a third-party software vendor instead of building them themselves. Mobile middleware can also handle much of the necessary data retrieval, filtering, formatting, and synchronization. According to our survey, 73 percent of survey respondents use or plan to use middleware applications from major vendors such as IBM.

Components are definitely taking the wireless plunge. They’re using many different devices, networks, technologies, and applications to maximize the efficiency and effectiveness of their mobile workforce. Advances in technology, devices, and data compression are making wireless data communications more convenient, reliable, and faster, all adding up to improvements in productivity that directly impact the bottom line.

Senior Analyst Avi Ginzburg (avig@infoworld.com) covers enterprise mobile networking and wireless technologies.

Reality...
Fact...
Today...
Right Now...
The Balancing Act

- Faster Strategic Decisions
- Quicken Time to Execution
- Improved Results

- Financial Results
- Operational Results
- Link Business Operations with Technology

Mobile Health
Mobile Health is a topic that **transcends** the collection, storage, reporting, and transmittal of data.

Mobile Health is a broad topic that encompasses......

- People
- Business Practice
- Systems
Vital Components of Mobile Health

People
- Individual Motivation
- Fear of Computerization
- Personnel Costs
- Organizational Culture
- Big Picture
- Integration vs. Functionality

Systems
- References
- Standards Compliance
- Data Redundancy
- Vendor Strategies
- Vendor Alliances
- Best of Breed vs. Sole Source

Business Practice
- Work Flows
- Process vs. Task Orientation
- Clear Vision and Priorities
- Business Plan
- Data Ownership
- Patience and Time

Compromise
Our Challenges
To Gain Success in Mobile Health —Focus on Desired Outcome

- Effectively use what is currently available
  - Results/transcription data on-line
  - Devices (fixed and wireless)
  - Intranets, internets, portals
  - Dictation (use the clinician's voice not his hands)

- Stop creating new processes to avoid using currently deployed automation
  - Printing electronic data for placement on chart
    - MAR
    - Lab Results
  - Allowing physicians to manually sign records vs. e-signature
  - Stop faxing information that is online

- Place emphasis on automating collection and accessing automated data
It is Documented that...

Less than ½ of all projects create high levels of economic value.

1/3 of all IT Projects are never completed.

Of the remainder — most come in late or over budget.
Success in Mobile Health

Clinician Concerns for Workflow, Quality and Efficiency

Supporting Healthcare Delivery Through Automation
Business Strategies

- Workflow
- Human Capital
- Supply Chain Management
- Aging Population
- Physician Affinity
- Patient Safety
- Outsourcing
- Healthcare Consumer
- Cost and Clinical Performance
The Opportunity

Fulfilling Clinician’s Vision: Improve Care Delivery and Decision Making

- Workflow
- Actionable data
- Timely access
- Improve quality
- Promote safety
- Real time information

- Providing support/assistance in decision making for all clinicians
- Support stewardship of financial and human resources
Objectives to Meet Clinician Vision

- Seamlessly integrate into clinicians workflow
- Intuitive
- Minimal training
- Get value to the end user quickly
Pyramid of Elements
For Success in IS Projects
Success in Mobile Health

Greater Technology Efficiency

Technology - Centric  Process - Centric

Alignment of Business Strategy and Technology

Tactics not linked to technology efficiency or business strategy

Greater Business Enablement
Organizational Alignment

Greater Technology Efficiency

Technology - Centric

Alignment of Business Strategy and Technology

Process - Centric

Tactics not linked to technology efficiency or business strategy

Greater Business Enablement
SUCCESS

Project Statistics (As of 8/19/03)

- 18 months to implement a full clinical documentation system for 7 campuses
- All Go-Live dates achieved
- 560 wireless devices deployed
- 5000+ direct users of the system
- 240+ forms automated
- Thousands of data points automated
SUCCESS

### Before

#### INSULIN SLIDING SCALE - SEE DETAILS:

- **INTERVALS:**
  - ** Every 4 Hours **
  - ** Patient History & 4 Hr. Interval **

#### Details:

- **Insulin Sliding Scale:**
  - **NOXOLIN R U-100**
  - **NOXOLIN R U-100**

#### NSAID (Nonsteroidal Anti-Inflammatory Drugs):

<table>
<thead>
<tr>
<th>NSAID</th>
<th>Dose</th>
<th>DoS</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibuprofen</td>
<td>800 mg</td>
<td>04/05 12:00 PM</td>
<td></td>
</tr>
<tr>
<td>Celecoxib</td>
<td>200 mg</td>
<td>04/05 12:00 PM</td>
<td></td>
</tr>
<tr>
<td>Naproxen</td>
<td>500 mg</td>
<td>04/05 12:00 PM</td>
<td></td>
</tr>
<tr>
<td>Diclofenac</td>
<td>75 mg</td>
<td>04/05 12:00 PM</td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>81 mg</td>
<td>04/05 12:00 PM</td>
<td></td>
</tr>
</tbody>
</table>

### After

#### MEDICATIONS:

- **Diabetes Management:**
  - **Novolin R U-100 (IV):**
    - **Dose:** 120 IU
    - **Time:** 04/05 12:00 PM
  - **Diabetes Management:**
    - **Dose:** 120 IU
    - **Time:** 04/05 12:00 PM

#### NSAID (Nonsteroidal Anti-Inflammatory Drugs):

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#### Other:

- **ACETAZOLAMIDE (IV):**
  - **Dose:** 500 mg
  - **Time:** 04/05 12:00 PM

---

#### Additional Notes:

- **Site:**
  - **Venous:**
    - **C-Peripheral:**
      - **C-Distal:**
        - **H-Venous:**
          - **J-Access:**
            - **K-Poly Cath:**
              - **L-(Other):**

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**THE QUAMMEN GROUP**

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SUCCESS
Remote Physician System Usage

Physicians Visiting 3 or More Times

<table>
<thead>
<tr>
<th>Months</th>
<th>Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUG</td>
<td>50</td>
</tr>
<tr>
<td>SEP</td>
<td>100</td>
</tr>
<tr>
<td>OCT</td>
<td>150</td>
</tr>
<tr>
<td>NOV</td>
<td>200</td>
</tr>
<tr>
<td>DEC</td>
<td>250</td>
</tr>
<tr>
<td>JAN</td>
<td>300</td>
</tr>
<tr>
<td>FEB</td>
<td>350</td>
</tr>
<tr>
<td>MAR</td>
<td>400</td>
</tr>
<tr>
<td>APR</td>
<td>450</td>
</tr>
<tr>
<td>MAY</td>
<td>500</td>
</tr>
<tr>
<td>JUN</td>
<td>550</td>
</tr>
<tr>
<td>JUL</td>
<td>600</td>
</tr>
</tbody>
</table>

Total MD 3+ Visitors
SUCCESS

- What’s in it for me
  - Supports workflow
  - Reasonable response time
  - System reliability
  - Easy to use (Intuitive)

- What’s in it for my patient
  - Provide data needed for care
  - Eliminate redundant queries
**Mobile Health** encompasses much more than the relationship between the physical parts of the system.

Successful mobile health results in the utilization of product and solutions that contribute to the organization.