User experience encompasses all aspects of the end-user’s interaction with the company, its services, and its products. - DON NORMAN
Usability Defined

Usability is a quality attribute that evaluates how easy user interface are to use.

"To complicate is simple. In order to complicate, you just need to add something..."

- BRUNO MUNARI

Complicare è facile, semplificare è difficile.
I saw an ad recruiting physicians... It promoted state-of-the-art operating rooms, dazzling radiology equipment... one line was printed in bold:

**No E.M.R.**

Usability & Healthcare

1. Learn to Identify Usability Problems
How steep is your learning curve?

Performance

Loading…
Memorability

Operation completed successfully. There must be something wrong.

An error has occurred while trying to display an error message.

Radiation Oncology Safety Stakeholder’s Initiative (RO-SSI).
Technical Jargon

Ambiguous Language

You need to **deselect** the previous **selection** to **select** a new dataset.

Not Actionable

- Users should be presented with a clear solution
- Don’t simply recommend contacting technical support.
1. Learn to Identify Usability Problems

2. Root Cause Analysis + Solutions

<table>
<thead>
<tr>
<th>Capability</th>
<th>Humans</th>
<th>Machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endurance &amp; Accuracy</td>
<td>Fatigues easily</td>
<td>Excel</td>
</tr>
<tr>
<td>Computing &amp; Ability to perform simultaneous operations</td>
<td>Slow and error-prone</td>
<td>Excel</td>
</tr>
<tr>
<td>Intuition, Reason inductively</td>
<td>Excel</td>
<td>Not yet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capability</th>
<th>Humans</th>
<th>Machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>Limited short term working memory. Large long term memory, but unreliable and slow access.</td>
<td>Excellent for repetitive work. Unaffected by emotions and motivational needs.</td>
</tr>
<tr>
<td>Attention</td>
<td>Easily shifted ...</td>
<td></td>
</tr>
</tbody>
</table>

### Consistency & Integration

![Consistency & Integration Diagram]

### Usability Improvements

**BEFORE**

- All workflows started from the Patient List Selector, including calibration procedures.
Usability Improvements

AFTER

• Introduced Dashboard to optimize workflows based on clinical tasks and user roles

Examples (cont.)

• Going from single, static display layouts to highly configurable display options to meet diverse user preferences.

BEFORE

AFTER

1. Learn to Identify Usability Problems
2. Root Cause Analysis + Solutions
3. Conclusion
Balancing Needs

- Research & Development
- Manufacturing
- Regulatory
- Sales
- Marketing
- Finance
- Human Resources
- Applications
- Installation Support and Service
- IT
- Training
- Medical Affairs
- Patient Access
- Legal

“...you have never been in a bed with a mosquito.”

- BETTE REESE
Even if you are on the right lane you will be run over if you just sit there.

- WILL ROGERS

Thank You