Factor Ten Computer

A computer system and business model that achieve factor ten reduction in material usage over a ten year period of computer usage.

Display

- LCD screen is replaced with video-enabled glasses with micro-projectors.
- Glasses enable almost all of the generated light to reach the eye.
- Pixels can be made much smaller
- Superior efficiency and vastly less material usage than typical LCD screens.

Input Device

- Keyboard and mouse with a single large integrated multi-touch pad.
- Pad supports an arbitrary number of inputs, including fingers and tablet pens and is customizable in function.
- Integrate multi-touch pad and OLED screen, to make it easier to see what you are typing / clicking on with your fingers.
- Thin, light, and cheap to make.

Modular Components

- Computers will come with several power options. Extra power packs can be inserted for more demanding operations.
- Units are all solid-state-based, with no hard disk drives or optical drives.
- Modules are designed to stay in your backpack, out of sight, and therefore never go out of style.
- Modules communicate wirelessly with external display, audio, and input peripherals, via Bluetooth, Wi-Fi, and Wi-MAX.
- Basic laptop contains only the CORE module, for the basic user who uses the computer to email, Internet, and type documents.
- Super User would take advantage of resource intensive functions like graphics and gaming with the CORE module plus several MORE modules.

Optional OLED Display

- Optional, portable, roll-up OLED screen to share information
- As thin as 0.05mm, requiring little material.

Subscription Fee Business Model

- Customers pay subscription fee for use of hardware and software.
- Less than a consumer would pay for a computer based on a two year replacement cycle.
- Cost reductions achieved through recovery, reuse, and recycling of parts in systems.
- Emphasize on maintaining optimum user experience and ability to perform required tasks on the computer.
- Maintains parts of the computer the user sees, the glasses and input peripheral, in style by changing their configuration
- Focus will be on right sizing the equipment for desired uses rather than planned obsolescence.
- Hardware will be returned to the manufacture at the end of the subscription.

Service Model

- Customer takes the computer to the service provider at retail outlets for service and upgrade.
- Hardware and software will be replaced and upgraded to maintain required system performance.
- Right-size equipment for user needs and software requirements,
- Focus on maintenance and performance of both software and hardware. Many users mistakenly assign blame for slow computer performance on hardware, when software is the culprit.
- By focusing on optimizing overall system performance, hardware will have to be upgraded less frequently.
- Individual components will come back to the service provider for recycling or refurbishing.

### Estimated 91% Mass Reduction

<table>
<thead>
<tr>
<th>Item</th>
<th>Replacement Schedule</th>
<th>Mass Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Original Computer</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>CPU</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Hard drive</td>
<td>3.5</td>
<td>2.5</td>
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<tr>
<td>Keyboard</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>RAM</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Housing</td>
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<td>2.5</td>
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<tr>
<td>Battery</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Screws Bolts</td>
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<td>2</td>
</tr>
</tbody>
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Overall Mass as % of Original 9%