Next-Gen PC Design Competition

Entry Questions

Please answer the following questions. Do NOT exceed three (3) 8.5" x 11" pages. **Do NOT include your name/design firm name anywhere on this form**. Failure to follow these guidelines will cause your entry to be disqualified.

1. **Name of project**: *EnergyTree*

2. **Design Category of project** (select one)

   ☒ Personal Productivity
   ☐ Communication
   ☐ Entertainment
   ☐ Living and Lifestyle*

   *The Living and lifestyle category provides for a more free-form exploration, reducing challenges of manufacturability and focusing more on lifestyle scenarios including wearable computers and more forward-looking scenarios.

3. **Date project completed:**
   December 9, 2006

4. **Size:** What are the dimensions of the components?
   Energy Tree   25cm x 25cm x 20cm
   Recycling Bin   30 Liter capacity
   SmartPlug   10cm x 5cm x 3cm.

5. **Overview of Design:** Explain in non-technical terms why this PC Design is innovative.
   We have entered the 21st century entering a dawn of being constantly connected and always on. We are now more efficient within our work and leisure but not within our use of power and energy. The *EnergyTree* will change the perception and view of how power is being used, implementing a complete system looking at device consumption, home consumption and long term sustainability. The *EnergyTree* is more innovative as it looks as energy consumption as a complete lifecycle, making you become completely productive within you energy consumption.

6. **User and Context:** Describe the users of this product and the context of usage.
   This product should be used by everyone one there is no excuse for the amount of energy being lost by devices being left on and potential energy not being recycled. This product has been designed with an easy user friendly device, not just aimed purely at the tree hungers.

   The *EnergyTree* is designed to be used within a place that is always in view. It shouldn't be showed away in the same dark room that the computer lives, the Energy relies on light and is designed to always be viewed so the Kitchen or living room would be the perfect context for the *EnergyTree*.

7. **Scenarios of Use:** Describe how this design delivers on new scenarios that benefit the targeted user(s).

The usage of the product is 4 tiered being
   Tree Health
   The Energy tree contains a real tree, which requires no conventional maintenance from the user. The trees health is decided upon how well the user utilizes energy. If the user is extremely efficient with there energy use the *EnergyTree* will give the tree the nutrients and water it needs to survive and flourish. If the User is inefficient with their energy consumption the *EnergyTree* will poison and malnourish the tree, eventually killing it.

   This benefits the user by giving them a long term overview of how much energy they are saving.

Device drain

Device drain is a more specific use of the product that both monitors and can control devices that are connected to the *EnergyTree*, allowing all devices connected by *DeviceCheck* to monitor energy consumption and can control and turn off all power to device when not needed, or when controlled from the *EnergyTree* control panel.

Household drain

This part of the *EnergyTree* monitors the house as a whole. Looking at all energy consumption from heating the house, to the efficiency of your recycling with the aid of *EnergyTree* **Recycling bins**. This will be linked to an online system that will calculate your household efficiency and give you green points in reward for an eco-friendly house.

Collector

Collector makes use of the community spirit in today's web 2.0 online societies. The system will be online, and accessed via the touch screen of the *EnergyTree*.   The collector is there to encourage people to recycle and take recycling to the depot to be processed. Once at the depot the collector will get extra green points. Although every person could take there own Re-Tree Bins, not everyone will want to and not every local government can afford to collect and sort the recycling as effective as lots of dedicated collectors.

8. **User Interface:** How does this design contribute to making the PC easier to use?

The Energy tree is made easier by both a passive tree feedback on energy efficiency and for more detailed a touch screen will come from the *EnergyTree*. The user interface will be custom to the *EnergyTree*, just supplying that data regarding energy efficiency. The display will be a touch screen activated by the user's fingers. There will be no need to enter much data into to the system as every input for the *EnergyTree* will communicate seamlessly with the *EnergyTree* base station. This design to have everything talking to the base station and being controlled from one central unit is a major design decision. This empowers the user to have complete control of unplugging power hunger devices, turning down the heating and weight recycling. All of this can be accessed from the central display of the *EnergyTree.*

9. **Technical Aspects:** Describe any new enabling technologies that are key to this design's success. How do these enhance the overall PC experience?

The key technologies in this product are Solar, Wireless, Rfids, High-speed Internet connections, touch screens and automated controls. These technologies are readily available, the convergence and getting them all to talk to each other will be a key to getting this product become a success. One of the most technically advance parts to the *EnergyTree* is the *EnergyTree* **Recycling bins**. Recycling bins have been very low tech containers but *EnergyTree* **Recycling bins** will have built in scales to calculate total weight of recycling. The weight data will then be stored in a RFID which can be read from the base station to know when the recycling is ready to be picked up. The RFID will also serve as an identifier at the recycling plant so that material cross contamination doesn't happen.

10. **Aesthetics:** How does the appearance, interaction, or system behavior enhance the products emotional? Appeal to the users?

A real tree was used as the main feedback for household energy use

The connection with a real tree engages the user to know what effect they are having on there macro environment, the tree is a metaphor for the damage to larger environment. There is a pre-existing emotional connection with saving energy and saving the rainforest. .

Develops communities (collecting and Area vs. Area competitions)

The collection of rubbish can be done via an online community, your local neighbor can pick up everyone's paper recycling. This means that the user doesn't have to empty every one of your bins. A sense of community will reinforce people to recycle, coupled with real statistics and reward points to encourage people to think green and see the rewards.

Interaction with knowing where all the power is going.

With 'the *EnergyTree*', the user can see where all of your power is going. Instead of the user just having a quarterly bill that says how much you have used, you are now directly connected to the problem. This interaction will create a real link between turning a light off and just leaving it on because it's easier. Before

you wouldn't see the effect of the action, but with the *EnergyTree* you will see a direct connection with cause and effect.

Real feedback on Where and What your recycling is doing.
The Energy tree will be data service to connect recycling to new products. This will stop the myth that recycling is just being taken but not being done with anything once it gets to depot.

11. **Accessibility:** Does this design address usage by individuals with unique abilities?
    The design has been created with an Easy to use touch screen interface, no input devices are needed, the environmental input devices require no knowledge of tech as these are just Plug and Play. To streamline the use the *EnergyTree* a restricted windows interface, used just for showing energy productivity.

12. **Ecology:** How is the design environmentally innovative? Consider consequences and effects on behavior over the whole life cycle of materials and processes, source and waste reduction, energy efficiency, and repair/reuse.
    The whole product is environmentally friendly, its there to create a CO2 neutral house. It's solar paneled, meaning no power is directly needed to power the device. The device encourages turning off devices, and recycling. The actual product has been designed for a long life, as the real tree will outgrow after 15 years. The *EnergyTree* will be made from as much recycled materials as possible, although any energy used in product will be retrieved from its product lifecycle as a result of the recycling undertaken by the user.

13. **Business Advantage:** Explain why you think this design would benefit a PC manufacturer's bottom line.
    The Energy tree creates a sustainable business plan for the Microsoft business, as if society doesn't recycle, or use less power there will be nothing to run our devices. There will be a knock on Microsoft's promotion about caring about energy lifecycle, and being viewed as a company that just doesn't create product that are designed to be outdated before they are released.