Brainstorming and Painstorming

CSI 1440
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What is Brainstorming

• **Brainstorm:**
  Sudden disturbance of the mind; sudden inspiration ...
• Brainstorming is an intuitive method of working as a team to generate concepts where team members communicate ideas verbally and with quick sketches
• All team members are encouraged to be open and uninhibited
• Goal is to comprehensively explore a breadth of solutions ideally leaving no promising directions unexplored
• Team members build upon each others’ ideas

Brainstorming Process

• Form a group with 5 to 15 people (too few gives inadequate ideas, too many can break down the group into multiple conversations or inhibit participation)
• Designate a group leader/facilitator who will solely direct and record
• Introduce the problem, then brainstorm ideas; wrap up when stagnation is reached (30-45 minutes)
• Record all the ideas generated

Brainstorming Guidelines

• Provide a suitable working environment
• Avoid hierarchically structured groups
• Don’t confine the group to experts in the area
• Carefully define the problem beforehand (or at the start) and allow time for individual thought
• Do not allow the evaluation of ideas
• Think wild and encourage humor
• Practice applying the brainstorming technique on real, but non-critical problems

Advantages of Brainstorming

• A set of individuals can collectively build on each other to generate ideas that would not arise individually
• Each member of the group contributes ideas from his or her own viewpoint
• Good team builder/morale booster
• It’s a great tool to start developing concepts (just don’t make it the only tool used!)

References

• Dave Verduyn guest lectures at KEEN.
• Many examples taken from presentations by Dr. Jonathan Weaver at UDM, Dr. Sri Condoor at SLU, and Dr. Walter Bradley at Baylor.
Disadvantages of Brainstorming

• The “right idea” may not come at the “right time”
• Group conventions may sidetrack or inhibit original ideas (hence it is best to have each individual generate ideas beforehand)
• The team may be distracted by a misdirected focus
• Certain team members may dominate the discussion
• Other than encouraging “unconstrained” thinking and “out of the box” ideas, there is very little direction or process to actively stimulate new ideas (we’ll cover some tools for systematic innovation to address this)

Painstorming

• Identifying and developing countermeasures to your customers’ pains [Dave Verduyn]
• “Necessity is the Mother of Invention, and it is Frustration that Fuels the Fire!”
• ALWAYS be on the lookout for the frustration that might fuel your big idea!
• Let’s look at some examples of Painstorming

What’s the toughest part of putting on shoes for a 2 year old?

• Keeping them on!
• Get lost easily
• Ruby won’t stop running around
• Hard to tell which shoe goes on which foot
• Hard for Ruby to do by herself

What are the pains involved in scuba diving?

• Weight
• Capacity
• Having to refill periodically
• Regulator/pressure lines
• cost or rental fees
• What’s the problem here?
  • Messy when you reach the end
  • Hard to get the last bit out
  • Utensils not shaped conveniently

• What’s the problem here?
  • Uncomfortable
  • Too heavy to wear
  • “true 3D” is layers of 2D graphics
  • not “portable”
  • could not link to other VB systems
  • not in full color
  • can’t save games!

Things to Look for When Painstorming

• Inefficient use of resources (material/time/energy/repetition/etc.)
• A new environment
• User complaints or modifications
• Conflicting requirements on the product

What pains you?

• As you go through your day, as you watch others going through their day, watch for irritations or frustrations encountered in the use of “time-saving” software applications.
How Will We Use This?

• As a result of getting to know your peers better, select a group of 3 to be your project team – due January 19, 2015 by email
• Get together and discuss software applications that are frustrating
• Decide on one application for a potential need that will be your group’s project
• Conduct a Pain Storming group activity and submit your list of pains by January 26th.