IPRO 341 – Midterm Report
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IPRO 341 Fall 2006

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Outline

- Background
- Collaboration
- Process
- Technical issues
- Societal issues
- Recommendations
- Next steps
- Insight
- Questions
History of Insight

• Fall 2005
  ▪ Researched emerging technologies
    – AI, RFID, Video Games, Internet, Optical Drives, Cell Phones

• Spring 2006
  ▪ Focused on nanotechnology
  • Perceptions of Society
    – Stakeholder Bias
  • Major products currently at market
Objective of IPRO 341

- Collaboration through a distance setting
- Identify technical issues
- Identify and define nanotechnology through self-directed learning
- Understand process involved with emerging technology
- Technical and societal aspects
Fall 2006

• Working with Ball State University
  – Architecture – “Nanostudio” (mix of actors)
  – Process of evaluation with technical and social implications
    • Aesthetics vs. Functionality

• Initially began researching nanotechnology
  – General overview, then specific materials
  – Evaluated individual designs
Individual Groups

- 3-4 people per group
- Each individual group has different materials
- Groups also have different designs and sites
- Materials not necessarily applicable today, but within 25 years
  - However materials must be proved to work in the lab setting
- Communication with BSU (long distance collaboration)
Natural Umbrella House

• Nanowire paper, Quantum Dots and Nano-sensors

• Pro: Movable walls, Responsive Skeleton
• Con: Roof may melt after it rains
Nanoshell House

- Translucent Nanosteel, Carbon nanotube sensors

- Pro: Technology already exists
- Con: Electromagnetic effects
Stretch Building

- Carbon Nanotube envelope, CNT Liquid Crystal Displays

- Pro: Immersive environment
- Con: Taking too many “design liberties”
Stack Building

- Carbon Nanotube Sheets, Quantum Dots

- Pro: Feasibility
- Con: Scientific limitations
Fleischman House

- Carbon nanotubes, Organic Light-emitting Diodes

- Pro: Adaptability to environment
- Con: Structural integrity
Conclusion

• BSU overall designs have questionable feasibility
• Full potential of nanotechnology is yet to be determined
• Further evaluation of Social implications
• Collaboration of tech and non-tech fields
But There Is More...

- Social implications research
  - 5 different categories

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<thead>
<tr>
<th>Material</th>
<th>Education</th>
<th>Society</th>
<th>Construction Market</th>
<th>Other</th>
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<tbody>
<tr>
<td>Recyclable</td>
<td>User</td>
<td>Privacy – hacking</td>
<td>Construction time</td>
<td>How other nations deal with / what regulations do they have?</td>
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<td>Cost-efficiency</td>
<td>Insurance agents</td>
<td>Sabotage / attacks</td>
<td>Material delivery</td>
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<td>Workers</td>
<td>Religious reactions</td>
<td>Job force / market</td>
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<td>Compatibility</td>
<td>Designers / Engineers</td>
<td>Malfunctions</td>
<td>New hardware / machines needed</td>
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<td>Governing body</td>
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Next Steps

• Website plans
• Possible use of case studies
  – Viva Gel, Diamonds, Building issues, Weapons
Insights

• Personal experiences
QUESTIONS?
References

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