Workshop Discussion

- Introduction
- Case Studies
- Project Data
- Project briefs
- Dissemination & Communication
- Competitions
- Research

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Case Studies

- General comments
  - Have the right decisions been made?
  - Book #1 & book #2
  - Business stuff – multi-disciplinary perspective, knowledge transfer
  - Decision analysis key part of each case study
- Jet intake design
- Wheels – dynamics and aerodynamics
- Control systems – e.g. Winglets
  - Active vs passive control
- Rocket design – liquid, hybrid, solid

Case Studies

- Turnaround planning – operations management
- Cost model
- Materials
- Safety and risk management
- Car vehicle dynamics, including steering, rocket firing
- Manufacturing – concurrent engineering, integration, partners

Case Studies

- Supply chain management
  - Distributed capability
  - contracting
- Project management – skunk works
  - Distributed working and communication (flat structure problems)
- Run location
- Environmental aspects
- Cockpit design and ergonomics
- Braking systems – aero and mechanical

Case Studies

- Education
  - How do you transfer knowledge and skills
  - Pedagogy
    - Cultural inheritance and new generation of learners
    - New interfaces
  - Use as a **live experiment**
  - Collaboration – virtual team working
    - 24 hour design project - international

Project Data

- Overall design brief- if it exists?
- Vehicle technical specification
  - Even brief version
- Vehicle options under consideration
  - Parameters open to discussion
- Performance data
  - Lift, drag, thrust, rolling coefficients, run simulations
- Performance model – Ron's spreadsheet ☺

Project Data

- CAD – components only with detail
  - Overall physical envelope not possible – yet!
  - Air intake geometry
  - **Rear wheels, fairings and suspension**
  - Pump system - materials
  - Braking systems
  - Steering, front wheel system
  - Car Structure

Project Data

- Data acquisition and telemetry
  - Vehicle health systems
  - Run data for analysis and validation
- Vehicle loadings – e.g. Front axle
- Electrical and electronic systems
- Emergency and safety systems
- Decision data – trade-off
  - Decision analysis process, include in case studies
- Cost data

Project Briefs

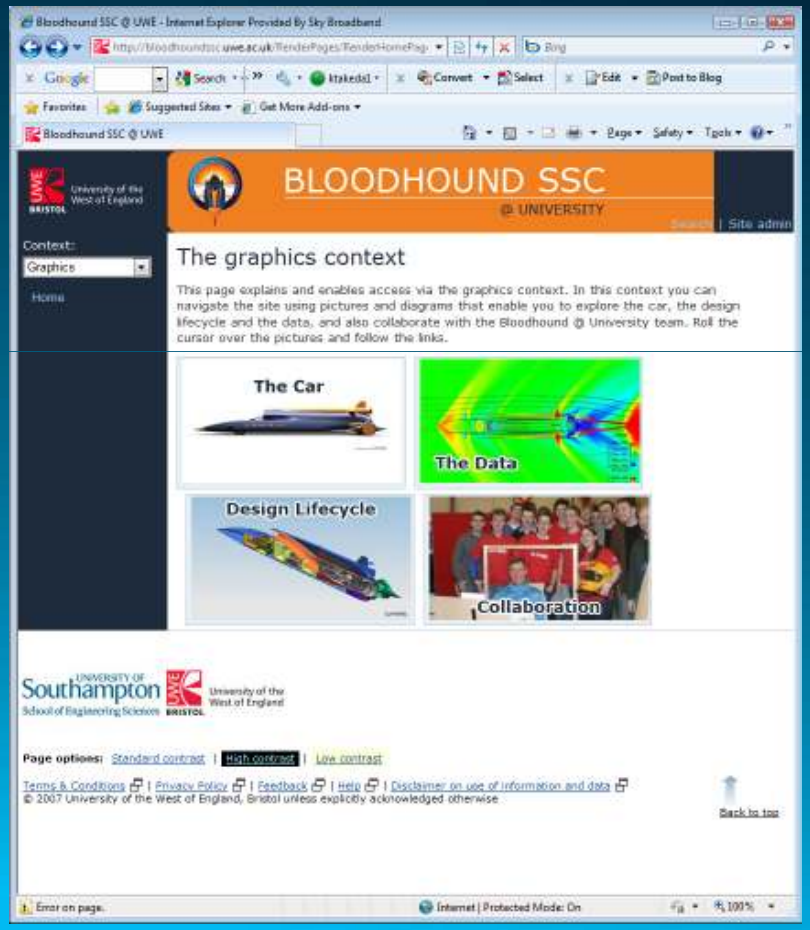
- BH team project laundry list
  - Heat management – e.g. HTP pump
  - Turnaround logistics
  - Jet fuel tank – minimise ullage
  - Rocket mounting – measurement of thrust vector
  - HTP coupling for refuelling rocket oxidiser
  - Force feedback through steering wheel
  - Cockpit crashworthiness
  - Supersonic paint test
- **How do we raise money!**

Project Briefs

- Logistics for whole team
  - Physical, political (strategic metals), costs
- Driver preparation
- Driver monitoring
- Ethics
- How do you assess if this makes a difference?
  - Impact of science on UK PLC
  - Impact of public engagement and education
    - New ways of interfacing with new generation of engineers
- How do you disseminate

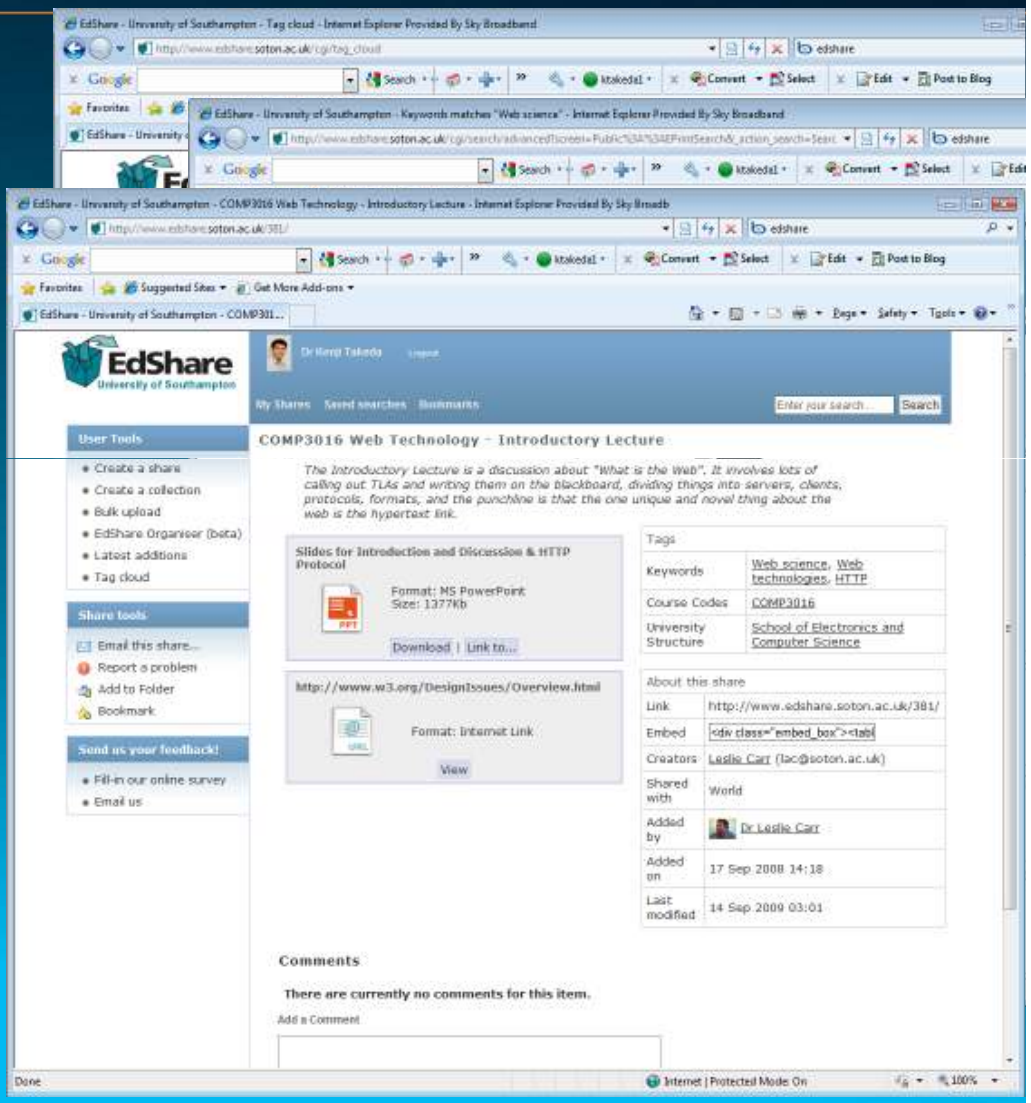
Dissemination & Communication

- BH@Uni portal
  - Business model – people knicking Uni work
  - Licensing issues
    - Tension between open access and making money
    - IPR derived from BH material
  - Harvard Business School model for case studies
  - Some peer review
    - BH certified material



Dissemination & Communication

- EdShare
- Try it out
- Authentication



Dissemination & Communication

- Podcasts – small chunks
- Video seminars/lectures
- Webinars
- Wikis
- Exhibition
- Roadshow
- HE events/workshop – Formula Student
- Link back to industry – SME to link with academia
- Competitions....

Dissemination & Communication

- Audience
  - Trade bodies – IMechE, MIA, etc
  - **STUDENTS! Bottom-up approach**
- Student ambassadors
- Engineering tasks to students
  - Students are part of the project
- Viral campaigns
  - Managing authenticity
- Hosting workshops
  - Guy@Westminister

Competitions

- Intense team design competitions
  - Piggyback existing competitions
- BLOODHOUND SSC business/engineering game
  - Modular
- BLOODHOUND innovation competition
  - IPR issues and access for publication
  - Drip feed, web-based, peer-assessed – league table
    - Dragon's Den final
  - Major project/challenge - individual and team -2010/11
    - Incentives – low-speed car runs, dinner, prize-giving
    - Masters projects for Summer 2010
    - Live list of projects – optional deadline

Research

- 5 year timescale – adding value to UK PLC
  - Platform grant – TSB to leverage EPSRC
    - Collaborative innovation project (EPSRC) – assessment of impact
  - Innovation in the UK to generate new knowledge
    - Exchange, education, engineering, management
    - Unlocking innovation, enterprise to SMEs
  - Promoting open innovation – new model
    - How does this project do it?
  - Technical
    - Supersonic composites
  - Educational aspects – who to fund?
    - Higher Education Academy

BLOODHOUND@University Special Interest Group

- Higher Education Academy Special Interest Group
- Led by University of Southampton
  - In conjunction with UWE & Swansea University
- Regular workshops
  - Community-driven activity
- Dissemination through HEA & BLOODHOUND@University portal

The Higher Education Academy

www.engsc.ac.uk

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