

Workshop Discussion

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





- 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



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

ENGINEERING ADVENTURE WWW.BLOODHOUNDSSC.COM



- 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



- 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!

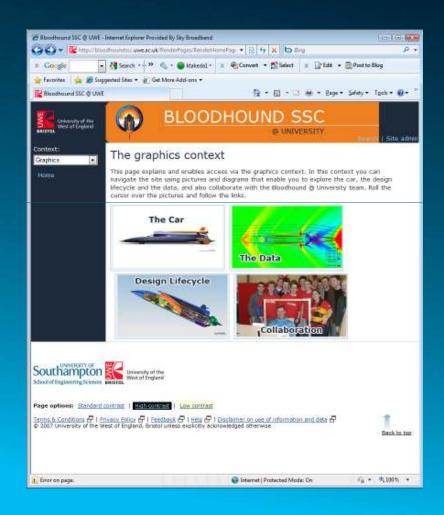


Project Briefs

- 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

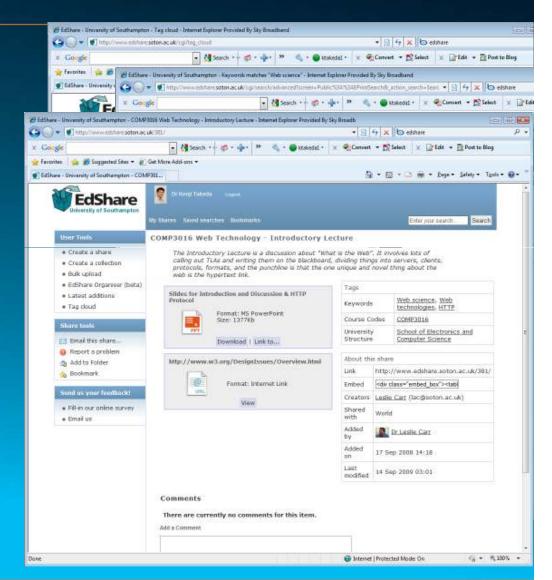


- BH@Uni portal
 - Business model people knicking Uni work
 - Licensing issues
 - Tension between open access and making money
 - IPR derived from BH material
 - Harvard Business School model for case studies
 - Some peer review
 - BH certified material





- EdShare
- Try it out
- Authentication





- 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....



- 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





Higher Education Working Together















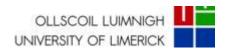






















ENGINEERING ADVENTURE



BLOODHOUND@University

- Open-access cutting-edge engineering project
- The devil is in the detail
- Inspiring, engaging and exciting!



BLOODHOUND SSC

THE ADVENTURE BEGINS WWW.BLOODHOUNDSSC.COM







ktakeda@southampton.ac.uk

ENGINEERING ADVENTURE WWW.BLOODHOUNDSSC.COM