Riversimple

A new concept for sustainable mobility

@riversimple
www.riversimple.com
An introduction to Riversimple

Our purpose is to provide mobility at zero cost to the planet

We’re developing a radically efficient hydrogen fuel cell vehicle

We never want to sell one
We’re very small – but have big ideas!
800+ beta testers
What motivates us – sustainable automotive

Unsustainable

Socially

[Images of L.A., Mumbai, and Detroit]

Environmentally

Atmospheric Carbon Dioxide

Financially

$25 Billion Lifeline for GM, Ford, and Chrysler

Profitability of a B segment car: c.$500
Development costs of a B segment car: c.$1 billion per vehicle
Current automotive industry

You never change things by fighting the existing reality.

To change something, build a new model that makes the existing model obsolete.

“We’re not certain why they disappeared, but archaeologists speculate that it may have had something to do with their size”
21\textsuperscript{st} Century constraints

We need new business models, adapted to the constraints of the 21\textsuperscript{st} Century.
Riversimple 7 point strategy
Selling mobility as a service, instead of a car as a product.

It’s better financially and environmentally.

Must be coupled with technology.
Making efficiency profitable

1. Decoupling acceleration and cruise demands
2. Mass decompounding
New business models create new design incentives
Benefits of the network electric powertrain

![Graph showing power distribution between internal combustion engine, battery electric vehicle, and network electric vehicle (RASA).]
Power: 8.5 kW hydrogen fuel cell
Efficiency: Efficiency equivalent to 250 mpg of petrol
Emissions: 40 gCO₂/km
Well-to-Wheel
Acceleration: To 60 mph in 10 seconds
Speed: Max cruise speed 60 mph
Range: 300 mile range
Weight: 580 kg
Riversimple 7 point strategy
The inevitability of new value networks

“Aligning business interests across Riversimple’s value network can create long-term, open and sustainable business relationships”

Disconnect between supplier incentives and Riversimple’s

We need to go upstream with sale-of-service
Sale of service upstream

Feasibility study into:

Circular Economy: Business Models

Objective: Deliver a plan to pilot a ‘circular’ business model
Methodology
Mapping the value network / selecting interventions
Developing and negotiating the value proposition

Shared retained value: Riversimple pay for fuel cells on a normal sale-of-product arrangement, although form an agreement to return the fuel cells at end-of-life. A return price is negotiated based on the potential for retained value (re-use, re-manufacture and recycling of components). Alternatively a discount on new fuel cells could be negotiated, based on the value retained from fuel cells returned.

Fuel cell power performance: Pure functional result agreement whereby Riversimple pay for power delivered by the fuel cell, operating hours, or some other measure (e.g. kWh). Payments would be structured according to an agreed contractual period (e.g. paying for operating hours for a number of years). Fuel cell supplier retain ownership of the fuel cells. Performance incentives would preferably be incorporated, as with previous offers.
Financial model

Aim is to agree a model to implement
In our methodology this would then proceed to ‘business planning’
Outcomes of study

1. Partner who agreed to pilot got taken over, so this couldn’t take place!
2. It’s feasible!
3. Methodology; we have a better sense of ‘how’
4. Must be coupled with technology
5. Collaboration is key – grant funding helps
6. We need future collaborative projects to help us develop the business model AND technology side by side
Next steps - APC

- Focused on the whole powertrain – fuel cell to motor
- 3 year technology development programme
- Whole cross-cutting work package focused on exploring servitisation
- Partnered with fuel cell supply chain partners
- Outcomes are:
  - Agreed value proposition for key components
  - Technology developed in accordance with requirements of the value proposition
Creating a value network for fuel cells
Creating a value network for fuel cells
Next steps - DTU

• Focused on the rest of the car!
• Aims to pilot in-line with beta trial / early production
• Aiming to develop and cross-fertilise methodology development and skills into APC project and *vice versa*
Next steps - DTU
There is another way...

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