

## EVOASIS - Report for Metadesign Workshop (23 April 2010)

*"A day of unencumbered activity – it was like being in a nursery - a stunning number of energies and creativities" –*  
(Richard Barrett, from his closing comments at the end of the workshop.)

This report constitutes edited highlights from notes made at a workshop that took place on the HMS President ship, moored at Victoria Embankment, London, on 23<sup>rd</sup> April, 2010.



**Lunch on the deck of the HMS President - the chosen location for our workshop**

The workshop was devised and managed by the Metadesigners Open Network (MON), a new not-for-profit organization established in 2010. It represents a preliminary inquiry, which was run as an exercise to test some tools and methods devised by the MON team. The results were based on information supplied by Richard Barrett (EPR), on behalf of Evoasis. They are offered on a pro bono basis to Evoasis in the hope that they may be useful for possible planning purpose.



**Thirty participants gather to devise possible business strategies for the future**

MON invited a carefully selected team of thirty that included distinguished innovators from design-related fields. Great care was taken in achieving a balance of personalities and professional backgrounds, plus an equal gender balance. This was not for reasons of political correctness, but because we needed to create an open spirit in which differences were valued as part of a way to find new opportunities.



### **What are the Aims of The Metadesigners Open Network Group?**

The ultimate aim of MON is to help the human species to survive the imminent threats posed by climate change, biodiversity losses, etc. Currently, our particular contribution is the development of 'metadesign' – a new field of design that is applicable to highly complex systems. The workshop used the general metadesign approach that we developed from an AHRC and EPSRC-funded research project conducted at Goldsmiths, University of London, between 2005 and 2010. Previous experiments have taken place over several days. On this (one day) occasion, there was not enough time to use many of the 80, or so, tools that we have devised. Nevertheless, our basic approach could be discerned from the long-term, comprehensive scale of thinking that was evident from the way we organized the group into four, interdependent teams. The underlying supposition behind this work is that 'design thinking' can be used to enhance business thinking, if it can be modified in appropriate ways.



*John Wood welcomes everyone and outlines some principles of metadesign*

### **What Are Our Methods Intended to Achieve?**

It seems clear that energy shortages, coupled with environmental problems will force some radical changes in the way we live and do business. The workshop was part of a quest for a much-needed paradigm change. Changing paradigms is extremely difficult. This is because each exists as a complex network of co-dependent elements. This workshop did not take into account the precise details of market conditions pertaining to Evoasis (local cultures, tax incentives, political will, vested interests, pricing structures, competition from other companies, etc.). For this reason, the outcome was very generalized. However, it could be regarded as a basis upon which more detailed studies might change the paradigm within which the electric car market operates.



*Richard Barrett (client) outlines the Evoasis business vision and explains the challenge*

### **The Workshop Format**

In seeking a suitable strategy for paradigm shift, our approach was to look for synergies that already exist at many levels within the system. This is not always easy because it calls for a sophisticated level of teamwork. This, in turn, requires emotional intelligence as well as intellectual intelligence. Finding new synergies in the short time available to the workshop was a challenge, because many of the group did not know one another. It was therefore important to ensure that team members would bond quickly in order to work together synergistically. The first session therefore emphasized shared experiences, rather than intellectual ideas. We asked each individual to take turns at initiating a drum rhythm in front of the group. We repeated the experiment and asked the whole group attempting to clap, in unison, to this rhythm.



This tool worked better than expected. It is easy to facilitate by a non-expert. It took less than fifteen minutes to run and it relaxed and 'bonded' the whole group.



The Room Layout



1) Layout of the team tables 2) The four teams were interconnected in six relations

We set up four teams of experts, each placed at a table. The four tables were arranged in a square, with a fifth table at the centre. Each team consisted of three invited guests, one facilitator, one observer (note taker) and one video-camera operator, standing slightly away from the table.



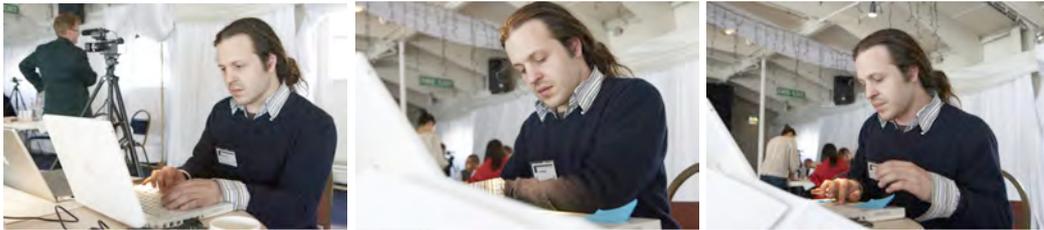
Although a 2D square does not quite make the teams equidistant from one another, conceptually, it signifies our avoidance of a hierarchy. Each team on the four (outer) tables had a particular theme – shelter, mobility, clothing and food. The broadening of the agenda, and the non-hierarchical nature of the group structure, were key aspects of our approach.



We wanted to challenge received ideas of what an electric car, or energy utilities, company might be expected to do, or to be in future. We invited each of the teams to question the usefulness of their assigned category. The results confirmed that any product category could be stretched, shifted, or morphed into another one because of innovations from competitors in their own market, or even from other industries.



The central (fifth) table was the 'base camp' for Andrew, who monitored activity from all four tables (via post-it notes), and compiled an up-to-date mind map that was projected onto a large screen that could be seen by each of the four groups.



The central table was shared with Jordan (above), who collated the information as it came in (on post-it notes), and published them as Tweets on our 'metadesigners' Twitter site. It was also a central location from which Richard, our client, could keep an eye on the progress of the four teams.



Much of the discussion was supported by hands-on activities that are typical of the way that designers think. We are aware that individuals tend to prefer particular ways of thinking (e.g. visual, 3D, schematic, symbolic, etc.) and tried to acknowledge this in the materials we made available.



The relationship between comments, ideas, images and models is not always obvious, so we documented the whole event using 8 microphone channels, 5 video cameras and 3 or 4 still cameras.



Much of the discussion was characterized by the simultaneous making of sketches, models and diagrams. This was not something that is required, but is behaviour that emerges from the type of participant that we invite (also because suitable art materials are made ready-to-hand).

We believe that an open, comprehensive and radical level of questioning was needed, because of the complexity of the issues that will determine how change occurs. We see the uncertainty of Evoasis's predicament as an indication of society's current state of relative confusion, ignorance, ambivalence and denial. The fact that investors may find their creative, adaptive mode of entrepreneurship confusing may mean that some bankers have yet to catch up with the increasingly unpredictable nature of business in the 21<sup>st</sup> century. Most people may be aware that a new system and culture of energy production and consumption is urgently required, yet few sectors of society seem to know how they would prepare for, or manage, the changes that might be required. It is not realistic to expect one sector of society to intervene decisively in making a profound change, however powerful it may seem to be. We see the whole system – public opinion, vested interests, governments, NGO's, corporations, and the press as a paradigm that sustains itself by a process of internal self-reinforcement. There are many elements that may be critical to the identity, and therefore the survival, of any societal paradigm. Managing/coping with paradigm change will therefore require the making of a number of simultaneous changes at many relevant points within the system.

#### **SUMMARY OF DISCUSSIONS**

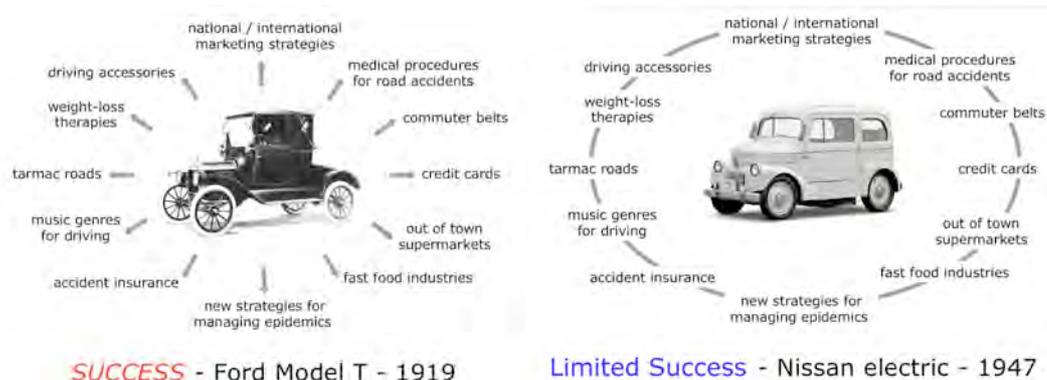
- Cars are currently seen as 'technology', 'convenience' and 'comfort'.
- They evolved from within the American Dream, which is often caricatured as an individualistic, selfish exercise of a 'rights-centred' ethic.
- This links lifestyle and fashion with the rhetoric of conspicuous consumption, often exemplified as needless travel.
- Car [style and brand] ownership often signifies exalted owner-status
- But [car] travel may become 'pay as you use'.
- Few people can evaluate their bodily strength in mechanical energy [car] terms.
- If this were to change, all fuel would be perceived to have a higher value.
- Will stakeholders become 'sharers and contributors' within a more participatory style of localism? The challenging of long-held assumptions led to the idea of a 'Local

Exchange Trading System Landscape' in which society becomes based on a paradigm of flow rather than stasis?

- In the 20<sup>th</sup> century, cheap energy [and cars] accelerated business and made lifestyles less healthy. The 'fast-food' revolution created convenience but caused alienation.
- Industry intensified food production, then distributed widely, quickly and cheaply.
- Because fuel prices are likely to soar Evoasis may need to rethink mobility under a *purpose-driven* approach, rather than a *process-driven*, or *profit-driven* approach.
- The purpose of a business is survival [not profit, which is a mere process indicator].
- Future companies may need to look at the ratio of energy expended [e.g. for transportation] versus energy out [e.g. in the calorific and other values of food and other crops].
- Bio-fuel cultivation may be acceptable (1.4), only insofar as it does not compromise net food production for a given land area.
- The global distribution of food may become less profitable if local food production technologies stimulate 'diversity-based' business methods.
- These would reduce the need for long-distance travel and subvert the idea of 'consumer' as a passive 'non-producer'.
- It would change the idea of 'utilities' [e.g. energy, water, etc.] from an emphasis on raw materials to one of complex, subtle relations – i.e. from quantities to qualities.
- The revaluing of the 'local' may bring about unforeseen opportunities for 'spontaneous cooperation'.
- This could help integrate business, community and the ecosystem. Evoasis might therefore enhance its long-term survival by helping communities to improve their relationship with themselves and with nature [e.g. alternative agriculture]
- Evoasis as [i.e. an 'energy qualities' utility company] could re-balance contribution and consumption [e.g. broker new relations between education and food]
- Supermarkets as potential sites of local identity [growing food on charging stations]

### The Car Paradigm

One of the challenges encountered by radical innovators is that even the strongest initiative may not have the expected market impact when it is introduced. Like all complex systems that have reached maturity, markets tend to resist changes planned by one player.



### Metadesign aims to create new paradigms from many simultaneous innovations

This systemic approach enables our researchers to analyze ecosystems and markets within the same framework. In each case it is common for 'players' (whether collaborators or rivals), to work together to resist a paradigm change. This tends to happen when small changes threaten the status quo. Henry Ford was able to change the existing paradigm because a sufficient number of small, complementary changes were introduced at many levels at roughly the same time that he developed his factory system (see above left). The mapping of paradigms is a tool that we are currently developing. We hope that it will enable us to find creative ways to intervene in situations where a significant number of players can see that change would be beneficial, yet are unwilling to make the first move.

The initial notion of charging stations for electric cars – compared with petrol stations – will probably mean longer waiting times for customers. There is long-term uncertainty about this aspect of charging batteries. Seeing the additional delays of battery re-charging enabled Evoasis to identify a retail opportunity. Rather than think of 'products' as a (factory-made) given, it could be seen as a primary resource that could become part of a trading cycle. Smart charging systems, vehicle guidance systems and the ubiquity of information may mean that travel becomes considerably slower, less frequent and of a much higher quality than that currently offered. It is possible that logistical services could therefore become a better source of business revenue than the sale of vehicles, or the transportation of goods, or people. This would also have an impact on the way jobs are awarded, and upon the distances between citizens, their homes, friends and families, and places of employment. Energy is a primary unit of exchange in nature. We need a clearer unit of 'embodied energy'

Banking talks about the cost of money, could we have a similar metaphor for energy generation, transportation and storage. 'Efficiency' reframed as an unhelpful ideal... At present, our society sees oil as a 'resource', but this is usually because -

We ('E' energy company) can convert ['x' resource] to money ['n' process units]

We (everyone else) we can convert money ['n' process units] to ['x' resource]

We can convert [resource] oil to energy [resource]

We can convert energy [resource] to life-enhancing action, such as travel [outcome]

We need an energy value system, such as a calorie-based unit of measurement. 'Might eco-mimicry aid us in developing a new natural model of mobility? 'Synnovation' (synergetic innovation) - Creativity and sexual reproduction share a similar purpose.

In order to become more effective, business needs to become more ephemeral. The Haldane notion of size - scaling is not simple - so think of always reducing by orders of two. The mobility team asked 'how might we create new value systems?' This issue was explored by comparing cities with electronic circuits. The metabolic effectiveness of modern cities was equated with the evolution of the microprocessor. Moore's Law predicted that the number of components in integrated circuits would continue to double every year, continuing "for at least ten years". However, where microchip designers turned this trend for miniaturization (i.e. shorter distances between components) into greater 'efficiencies' (i.e. connectivity x time), the planning of modern cities has tolerated urban, and suburban, sprawl. This is one aspect of a trend for businesses and individuals to see medium, or long distance, travel as a normal routine. Where, for example, daily commuting from home to work is a costly drain on resources (leisure time, working hours, investment in roads, etc) this has been overlooked because of the cultural habits and assumptions surrounding the motor car - and because of the availability of cheap fuel. This pattern (paradigm) is expected to change, once fuel prices exceed the level of public tolerance. However, the next trend can be hastened by judicious interventions on many levels. The trend for smaller corporations and access to telecommunications at ever increasing bandwidth will also reduce the scale of organizations and will make them more 'open' in terms of sharing their knowledge and resources.

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ADDITIONAL NOTES - from the shelter, mobility, food and clothing teams

Some surprising connections were made that expanded the conventional scope of electric vehicles and gave them a fresh relevance to community and ecological issues. N.B. while some of these ideas have a reasonably practical potential, others are speculative, or even fanciful. However, it should be remembered that scientists are accomplishing hitherto remarkable feats of innovation<sup>i</sup>.

### **The Implications for Shelter and Domicile**

Conceptually speaking, although this particular team's horizon of concern was 'shelter', it was aware that technological advances mean that any product – even a car - can be 'morphed' into any other product. This is not especially hard for humans to accommodate. For example, whereas some people live in cars (e.g. camper vans), others move their houses around on wheels (e.g. timber housing in the USA). How might electric cars shelter occupants from danger, harm, Nature, etc.? What might be the relation

between shelter and effort, or the 'economy of means'? Input from Clothing – the car is an 'energy hub', or production unit. It powers your house when you get home. The car becomes the home.

*Q: How might we model the diverging and converging nature of community?  
A: Currently, we can see this represented in the family vehicle.*

We need a new pointer to the future. 'Re-linguaging' is a non-analytical method that our researchers developed. It is an active and creative way to find, or to define, potentially useful things that nobody noticed before. (E.g. the United Nations denied that some military aggression exceeded the usual purposes of a war until Raphael Lemkin invented the word 'genocide', in 1943. After that, everyone was able to recognize it and to act upon it).

This team questioned the word 'shelter' (and its physicality) and the things that happen in it. In playful terms, the word 'shelter' suggests this relation, i.e. 'car as shell'.



How do our names for spaces reflect their physicality? Could stakeholders become 'sharers and contributors'? It discussed the notion of 'participatory localism'. This might set out to create a holarchic community that used local currency methods that are embedded within the specificities of the landscape, or culture. They coined the term - 'Local exchange trading system landscape' or 'HABITAT'. It came up with many other terms that led them to discuss the DIY culture. It enabled them to question the way we create distinctions between mobility and stasis. Why do buildings have to be static? Why do cars have to move? Can our building materials be based on a paradigm of flow rather than stasis? The shelter team considered air and water as possible building materials.

| <b>Old Paradigm</b>                    | <b>New Paradigm</b>   |
|--|---|
| Mortgage rates                         | Instantly responsive  |
| Heavily regulated                      | Creative, participatory   |
| Heaviness (i.e. materials, bricks etc) | Responding to the environment Economy of means, lightness (e.g.: wood, straw, clay etc) |

Example: Supermarkets could create a social focus by growing food on the premises (hydroponically or aeroponically). This would bring better quality stakeholders sharers & contributors. Evoasis would contribute more directly to the local community's production and consumption. In turn it would benefit from a more durable customer-base.

"EVO-TESCO" / "NO-WAYTROWS"  
A radically re-envisioned supermarket

Letswork / Letscape / Letslive / Letshab / Letscape / Letswork / Letscape (LETTs) / Landscape / Local exchange / Trading systems Work / (LETTs)work / Local exchange / Trading systems / Work. Create plastics from air - we are breathing in the raw materials for advanced plastics. Cars covered in solar panels. Cars could be an energy storage system...[?!]. Thus, mobility would become the less obvious, or more expensive option. If you have too much, you could sell your energy (we could become producers). Standard size car, but lots of adaptable parts, so it would function like a tent. Alternative shelter – like a Favela – self-organizing, everything recycled, creative. This type of construction is still (romanticized) as a symbol of cultural diversity. Mathias – building a thin-skin climatic envelope? Localism – part of the local ecologies e.g.: using local materials. The more material possessions and survives we have in the West, the more isolated we may

become. Personal high-speed mobility has helped to achieve this. Park shops (American case study of people getting involved in commercial food growing. Food input – Supermarkets, places to live, grow food.

### **The Idea of Mobility**

BIG PICTURE - The current economic system is designed to encourage unlimited economic growth. If this continues, it could lead to a series of ecological disasters. Some of these may be, to all intents and purposes, unstoppable. This team (mobility) therefore sought to reframe conventional notions of mobility within a long-term view. It asked itself how Evoasis might look beyond current lifestyles and familiar business practices? This meant seeking a more radical, lateral understanding of its whole situation and opportunities for development.

The team agreed that it would be important to devise a *purpose-driven* approach, rather than one that is *process-driven*. Many organizations confuse their purposes with their processes when analyzing their fitness for business. Arguably, the ultimate purpose of a business is to survive (and flourish) yet it is tempting to focus on the management of money, rather than the resources or actions that it can leverage. This may mean that, even if the energy required to produce a given unit of energy is greater than what is produced, this could (in some scenarios) still make sense in monetary terms. For example, the production of bio-fuels may be acceptable (1.4), only insofar as the solar energy taken does not compromise the need for food. Money is a tool that is uniquely instrumentalist in nature. It has few, if any, intrinsic qualities, yet is enormously attractive and is highly potent as a tool. But, while profit is a good indicator of a company's use of money [i.e. as process] high profits do not guarantee its survival.

4 value-levels: 1. Resources 2. Process Outcome 3. Society Outcome, 4. Process-Driven One way to bring all of the above issues together is by exploring ways to defeat entropy.

However, if business models become more 'de-centred', this team wondered whether there might be a significant change in the consciousness of corporate industries. One aspect of this might be a loss of the illusion of agency and the ability to remain strategic.

At the public level, the trend to creating a local diversity of nutrients, and other resources, will reduce the need for travel. A 'mobile-supermarket', with hydroponics logistical trucks powered by alternative energy sources. Alternatives to the current ideas and concepts of work need to be found. This might help reverse entropy. This notion led the team to ask whether we might become able to metadesign a more creative multilayered framework for business. Other ideas included the possibility of 're-languaging' the 'consumer' as a 'producer'. Could this render out-of-town hypermarkets obsolescent? The idea of 'brokering' utilities would also need to be 're-languaged'. Brokers tend to be seen as resource procurers and managers. However, they might see themselves as orchestral conductors or kitchen chefs. This would shift the emphasis from raw materials to relations – i.e. from quantities to qualities. The idea of 'anti-entropy' or 'negative-entropy' is important, in this context. The way that mafia families organize themselves may also inform new modes of management at the level of information transfer (N.B. but not as an inspiration for lawlessness). Reflecting upon 'greener', and 'lighter' modes of travel caused the team to reflect upon opportunities for 'spontaneous cooperation'.

### **Food Implications**

In the absence of a green alternative to cheap fossil fuels, many familiar patterns of business will need urgent revision within the next decade or so. As food is vital to human life, this team asked whether it could be used to integrate business, community and the ecosystem. The aims and predicament of Evoasis might therefore become an opportunity for human society to improve its relationship with nature. The food team reflected upon the current role of food within society and business, concluding that – ideally – we should harness market forces in a way that brings about a greater respect for food. Attitudes, especially in USA and northern Europe, reflect food being seen as more a part of a system of economics, rather than part of a system of ecology. Cars brought busier lifestyles. These led to a decline in traditional family eating habits and the rise of solo food consumption. The 'fast-food' revolution was only possible through an abundance of

cheap energy, which enabled industry to create food intensively, then to be able to distribute it, quickly and cheaply, to consumers across very long distances.

Re-thinking the conventional capitalistic model (reflected in supermarkets) of ownership and property. The team was reminded of the invention of agriculture (c. 8000BC) which became the template, or inspiration, for industrial factory methods in classical Greece 500BC. The food team thought about the need to consider alternatives to agriculture, although this is a very great challenge, given human population levels. How might we secure food production through alternative agriculture systems? An energy utility company would be in a position to re-assess the balance between contribution and consumption. Relations between education and food could be developed, if there is a new balance between consumption and production. Identifying supermarkets as potential sites of local identity. Could we grow food on the roof of a charging station and create a supermarket or community center? Do local communities affect global communities?

### **Fashion Implications**

*"Fashion will play a huge part in the evolution of, and in defining the role of, whatever electric cars become, in future..."* (in Richard Barrett's feedback summary to the clothing team).

In trying to explore the future issues of an energies/utilities company this team initially discussed what people identify or recognise as a 'car'. Key focus seems to be on 'technology', 'convenience' and 'comfort'. The comfort/lifestyle aspects also relate to clothing and, hence, to lifestyle and fashion. This team reassessed the relations and boundaries between functional clothing and fashion. How much of the emotion of 'home' can be put into a 'car'? In clothing discourse (i.e. from advertising), comfort is connected to warmth and coolness, also to softness. At the technological and user comfort/safety levels, why are cars hard? Clothing and cars both have a shelter function. Energy impact is related to how we deliver all of the above. Why do we need to travel? Why do we need so much space heating and cooling? There are cultural (local) aspects of this issue. One of these is the concept and meaning of 'outside v. inside'. In Portugal, the car is seen as a comfortable place in which to get warm. In USA there has been a long tradition of drive-in movies, at which customers park their cars together, buy snacks through their windows and eat them while watching an open-air screen together. This kind of practice is associated with the American Dream, and characterized by huge, fuel-thirsty automobiles that stand for a strident style of individualism, financial independence and the freedom to drive anywhere, at any time. These kinds of images and values endure within a collective imagination that is kept alive in American movies and their offspring. They have been exported to most other parts of the world and have become an implicit part of the idea of 'human rights'

At present, few people have any way of equating their bodily strength or stamina with what a car burns as fuel. If this were to change, the bicycle might become more popular. Energy would be valued for lesser tasks and transportation distances would shrink dramatically. Could clothing become designed to function as a battery? Dancing or running could capture and store small quantities of energy. Although this is unlikely to have much competitive impact on the car industry as it is configured, the imminent emergence of human energy devices will change people's awareness of the quantities involved in enclosed, high speed, personal vehicles (cars). Driving to the gymnasium may become unfashionable in future. But maybe the gym is not only for exercise, it's also for socialising too. The retail opportunities are similar to those of the Evoasis/EPR charging station sketch. The team looked for novel synergies between clothing, washing, and cleaning. But fashion might be used to reverse, or change the systems of fashion. There was a discussion on 'functional clothing' VS 'fashion': 'customisation' 'repair' 'hand made'.

### **SOME NOTES**

Clothing → Reverse fashion

- not selling but personalizing

- valuing wear

- reversing consumerism

- pay as you use

→ Car as clothing - filling station as wardrobe

→ Car as modular system - customisation

- manufacturing
- local souvenirs
- functional needs or car tourism?
- visible marks of production

→ Car as home - functional

→ technology hub (where the power is)

- personal
- emotional

How fashion can be used to reverse it?

Value of 'old', repairing and revaluing wear, 'retainability'

Hand made car: hand knitted car by each area

- souvenirs
- Ownership, identity: implying wealth / poverty
- Camouflage

A paradigm shift in fashion?

Labelling

Medical diagnosis: clothing as medicine, developed by army

Sports clothing

- Rapid manufacture

High tech VS Low tech

Washing, dry cleaning

Grid = clothing

Rope

Relationship between car/mobility and fashion/clothing

KEYWORDS COMFORT, INTIMACY, PRIVACY

Clothes team suggest a 'car technology hub' which supplies consumers needs, turning the consumer into a 'personal energy producer'.

Reposition 'money=success' to 'experience=success'. This is because fashion is routinely used to reverse, alter or change behaviour via beliefs and value perceptions. However, this process almost invariably supports habits of consumerism that have a damaging component. Whether it can be applied in a more responsible way may need to be (also) sponsored by governments.

Can we reposition the idea of 'money=success' to 'experience=success'?

'Is the national grid a metaphor for clothing?'

Is there something deeper we can learn from 'camouflage'?

'Knitted cars' that could be produced locally

Perhaps we could have a hybrid of shelter and mobility by crossing a 'magic carpet' with the M-Drive technology being developed for personal flying cars (powered by microwaves).

26<sup>th</sup> May 2010

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<sup>i</sup> Even in this past week it was announced that

1) an American team has created the first artificial life-form,  
[http://news.bbc.co.uk/1/hi/science\\_and\\_environment/10132762.stm](http://news.bbc.co.uk/1/hi/science_and_environment/10132762.stm)

2) Chinese scientists have made teleportation work over 10 miles  
<http://www.physorg.com/news193551675.html>