

Alternative Mobility Solutions - The EMD Definition

“Creative new mobility solutions including vehicles, services, technologies and paradigm shift products that not only takes into account and optimises the existing infrastructures, but also provides unprecedented new user experiences, whilst at the same time allowing us to intelligently redefine our dependency on the automobile.”

Let's Start With The Big Picture

If we just stop and take a few moments out of our busy, stressful schedules and step back to look at the big picture of the world today, there are plenty of things we would consider madness. Here are just a few.

A third of the world's population is overweight or obese and nearly a billion people are starving. (stopthehunger.com)

The bottom half of the world's population has the same wealth as the richest 85 people in the world. (Forbes)

We are still killing each other by the thousands over our differences in the interpretation of “God” and can be executed for our beliefs (however pacifist).

In some African countries more people have access to a mobile phone than to clean water.

On average in the USA, a driver will spend 42 hours annually sitting in traffic jams wasting nationally \$121 billion in time and fuel.

Our cities are saturated with vehicles, pollution and noise and developing countries are crying out for simple transport solutions to work the land.

The terrible thing is that most of us are just too wrapped up in our personal worlds, trying to just get on with our lives, that we just put up with these situations.

Whilst **EMD** is unable to solve these major problems we believe that a lot can be done to help improve the quality of our lives through Alternative Mobility Solutions that reduce our dependency on the automobile, especially in our cities.

The world is undergoing the largest wave of urban growth in history. More than half the world's population live in cities and towns and by 2030, 5 billion people will live in urban surroundings.

The Automobile, Engrained In Our Lives, Culture And Economies

The automobile has been with us for over a hundred and thirty years and as you see from the images to the right in many ways not a lot has changed. Certainly the product has become extremely refined with an abundance of new technologies, making our journeys safer, better connected and more comfortable.

Today we are also beginning to see the first serious propositions for self-driving cars and we will experience more automotive development in the next ten years than we have seen in the last fifty.

Our relationship with the car is deeply rooted and the automobile industry is also deeply entrenched in our economical and social worlds.

The automobile industry employs hundreds of thousands of people, in the factories, the development centres, the dealerships and the brands, either directly for the car companies or for the myriad of suppliers that deliver to them.

The OEM brands are under contract to supply a 'product' for the factories to make, to keep the company going and often an entire region in work.

These factories are designed and equipped to build cars, even to the point that the dimensions of the production lines dictate how big the new cars can be.

When a car factory closes an entire region can be left devastated with tens of thousands of jobs lost, with huge economic and social repercussions.

It is a vicious circle especially for a struggling OEM. As market share falls, the factory output drops, the share price falls, cash dries up and the industry observers get nervous.

The only way to improve the situation is to produce new, better, shinier cars that can be made in the existing factories, because there is no cash to develop paradigm shift products or to reequip the factories.

The Romance Of The Automobile

Automobile travel used to be a romantic notion of adventure filled journeys, discovering new places and the relief of arriving at your destination without breaking down.

The styling of the cars during this period reflected this pioneering spirit and many say that car design ended in the 1960's, as our cars became more of a disposable item (and more reliable) as we entered the 70's and beyond.

The continual growth of the classic car industry is proof of our deep relationship with older cars and this bygone romantic period.

Urban Automobile Travel

Urban automobile travel today has no romantic connotations and the only relief is when we finally make it to your destination 'almost' on time.

The average speed in London today is 10mph, the same as horse drawn carriages a century ago. The average speed has only increased by 1.5mph since the introduction of the congestion charge in 2003, or to put it another way, the average speed is now that of a running chicken instead of a running mouse.

Traffic jams are not new in London. The 17th century diarist Samuel Pepys twice recorded being stuck in horse-and-carriage jams.

The original idea was that our cities would be the 'hubs' of activity, bringing everyone together and allowing easy exchange of trades, cultures, business and ideas.

The close proximity of all these different activities meant fast and easy travel and communication...

As a result people abandoned the countryside and flocked to the cities in hope of a better life.

For many, the cities do offer what they are looking for, but as the population of the cities grew, they then sprawled out into suburbs, which then required a transportation system for getting in and out of the cities.

The real problem starts when the automobile enters an urban, reduced lane environment. You simply cannot go faster than the person in front of you.

If one person fails to maintain the flow of traffic, thousands of people are delayed.

When we get stuck in traffic we get bored. We use our mobile phones to make calls, check email, send messages or surf the net.

Certainly, measures are being taken. The urban planners and public transport officials are working to make traffic flow as efficiently as possible, with intelligent traffic lights and new technologies, but the problem remains the sheer quantity of vehicles and individuals reactions.

We have been looking for solutions since the beginning of the automobile and some early Alternative Mobility Solutions are shown here.

Urban Travel Developments

The increase of new public transport systems such as trams, vehicle-sharing schemes and incentives for not using your car as well as deterrents for using it, all help.

Some cities have already banned the car from certain areas and the city of Hamburg wants to be car-free for 2034, with 7000ha of its surface dedicated to pedestrian and cycle users. Copenhagen in Denmark has a very strong bicycle and bicycle lane culture.

Pollution, global warming and simply a better quality of life are vectors.

When you also consider that up to 40% of a car's fuel is used looking for a roadside parking space in a city and that 30% of city traffic is people looking for parking spaces, then you realise the size of the problem.

The irony is that there are for example thousands of unknown underground parking spaces in Paris that sit empty.

There are of course workarounds, with the introduction of bicycle and electric car rental schemes.

Two, and the now very popular three wheel scooters allow the user to weave his way through the traffic. The downside is the associated pollution, noise and danger.

The beautiful city architecture (which for economic reasons we are incapable of replicating today) is buried under all this visual pollution.

It is ironic that Paris based Renault was the first OEM to invent plastic bumpers for their urban Renault 5 in 1971, which allowed city drivers to 'bump' themselves into even tighter parking spaces without causing 'too much' damage to other cars.

Even the new 2015 model Citroën C-Cactus' main selling point is it's urban protective cladding.

I participated in multiple brain storming meetings during my time at PSA, with Advanced Designers, Marketing Experts, Engineers and Sociologists to dream up new products and solutions to help combat urban congestion. After months of analysis and meetings the overall conclusion was as follows:

“If we are going to be forced to sit in our cars in traffic jams for 4-5 hours a day, we should make our interiors more comfortable”

I promptly left that company and created [EMD](#).

Electric Cars

In 1912, there were more electric cars on the road than petrol powered cars. However, the rapid implementation of petrol stations and the reduced autonomy of electric cars soon saw the petrol-engined car forge ahead. Yet, whenever there was an energy crisis or there was social-political-environmental pressure, the electric car would reappear and the electric car debate would start all over again, until the cynics would quash the positive aspects with range anxiety and recharging arguments.

Things are moving very quickly today and I liken the development of the electric car to that of the Chinese OEMs.

Ten short years ago, the Western OEMs smiled reassuringly to themselves saying that the Chinese brands had no engineering quality and all they could do was copy.

Five years ago we started to see a vast improvement in the quality of Chinese cars and the Western OEMs were still complacently smiling to themselves, reassured that the Chinese still had no idea about Styling and Brand.

Fast forward to today. China has over 170 Chinese automobile companies, whereas America still has its 'Big 3' and France is down to 2 (35 in 1948).

Take Qoros for example. Their products have the styling sophistication of VW, they have a 5 star NCAP rating and five years ago they were nowhere in Europe!

It would take a very brave automobile executive to ignore the Chinese brands today.

I firmly believe this accelerated wave of development will apply to the electric car as well, even though the Renault inspired drive with their Twizy, EON, Fluence and Kangoo electric cars has not proven to be a commercial success yet.

The Chinese have changed their policies so that the western partner in current automotive JVs can now have a majority ownership and decision making. They are leaving the western companies with a dying product whilst they leap-frog ahead and go pure electric.

(If you are interested in the debate about electric cars, there are two excellent thought provoking films by the director Chris Paine:

“Who killed the electric car” and “Revenge of the electric car”.)

Electric Cars

A number of OEMs have produced electric vehicles with little or no conviction, simply so that they can say that they have a model in their line up, (and be allowed to sell their other models in certain markets) little believing that there is a market for such a vehicle. However, the momentum is there and like many environmentally related subjects the impetus has come from California.

Up until now, electric cars have been mostly the domain of environmentalists. The technology is relatively simple and any good home mechanic could make/transform an electric car in his garage.

The problem is that nobody really took these cars seriously as they lacked proper development, engineering, styling and image.

A recent visit to the Beijing autoshow revealed the speed at which the electric car is advancing, with nearly every major brand offering at least one model. However all of these cars are based on traditional architecture and do not take advantage of the packaging possibilities that EVs offer.

The designs are so conservative that even colour and material choices are no different from normal cars, with exception of the 'blue' accent colour haphazardly applied.

These companies are doing the cause no good and believe that Design is simply to make engineering solutions look pretty at the end of the product development, and not an enabler for better product from the beginning.

The Chinese have realised this and there is a government push to improve the quality of Chinese electric cars.

One company that is a shining beacon of hope is Tesla.

Their model is stealing buyers away from the German premium brands. With an extended range, great driving performance and fabulous looks, the car is going from strength to strength as more dealerships are setting up and fast recharging stations are being built. Half of the cars have been sold in California.

BMW has launched their i3 and i8 cars and have taken the bold step of using electric technology as a justification to create a new styling language for this range of cars. With the majority of OEMs producing electric cars that look like thermal engine cars, (so as not to shock the establishment) this is a courageous decision on their part.

Please see my LinkedIn article [here](#) about the Chinese Automobile EV race.

OEM Alternative Mobility Solutions

However promising the electric car solution is, it does not answer the problem of urban congestion and traffic jams. Certainly they go a long way to reducing pollution, but the space they take up on the road is the same as a conventional car.

A number of OEMs are looking at Alternative Mobility Solutions (prototypes only for the moment) and getting away from the traditional “Car”, and for the moment they can be broken down into the following categories:

Electric cars (as mentioned on the previous page) that closely resemble thermal engined cars but do not take advantage of the architectural possibilities of electric drive as they are derived from traditional packages.

Small urban four wheeled tandem vehicles, that have a reduced footprint, but are still are very much car inspired and hold on tightly to the traditional car ethos.

Futuristic Japanese four wheel electric urban cars that are more product design inspired than automobile inspired.

Three wheel vehicles which cross-pollinate cars, bikes, products and even furniture.

Half and half proposals where the first part of the journey is by conventional car and is completed with an incorporated second mobility solution.
(The Ford Motor Company now promotes itself as a Mobility-Provider rather than a car company.)

Piaggio the Italian scooter and light utility company has cornered the market with a radical leaning three wheel scooter the MP3, which enables nippy city transport for those who do not feel comfortable on two wheels, but does not answer any environmental concerns.

Other Alternative Mobility Solutions

There are a whole host of ideas, projects, products and systems that can be exploited to make urban travel more pleasant and car free.

With an occupancy rate in Western Europe stabilised at around 1.5 people per car and a decreasing rate from 2.0 in Eastern Europe (as cars become more available) there is a great potential to vastly reduce the number of cars in our cities through car sharing.

Improved public transport solutions. Trams are making a resurgence as they provide above ground easy access transport and the latest generation of trams are comfortable and efficient. London has redesigned the traditional London bus for improved convenience, comfort and efficiency.

Individual publically available paid solutions such as bicycle rental networks and electric car networks also reduce the dependency of owning a car.

Bicycle lanes. Countries such as Denmark, Holland and Germany heavily promote bicycle travel. Bicycle riders in Denmark have 10,000km of cycle paths and the cyclist has absolute priority over car drivers in cities.

There are also solutions such as roller-skates, skateboards and pavement scooters than can be used in pedestrian zones and in dedicated or cycle lanes as seen here. This is where **EMD**

focuses its attention.

The First Mile / Last Mile Dilemma

The public transport providers are all searching for the solution of how to get travellers from their homes to the departure stations and from the arrival stations to their final destinations as easily and seamlessly as possible.

This first/last mile dilemma is one of the major hurdles for public transport providers.

The Future

Urban planners imagine a utopia of cycle paths and pedestrian walkways. Whilst this is a nice image, the reality of daily life is much different.

Not everyone can ride a bicycle and you can only walk so far.

Even with improved urban public transport such as trams and pollution free buses, the city dweller will still require an autonomous mode of transport.

The VÈlb' public bicycle rental scheme in Paris works very well for getting about, but is not the ideal solution if you have anything to carry.

The Autolib' public electric car rental scheme works well, but is overkill is all you need to do is a some light shopping.

EMD strongly believes that there is room to develop other, more practical Alternative Mobility Solutions.

A Radical Thought

What if the powers that be stopped ALL automobile manufacturing today and forced the OEMs to bring out an alternative solutions? There are easily enough cars already on the planet today that could be maintained to serve our needs until replacement solutions are found.

The automobile has become simply a disposable object. When it breaks, we throw it away and get a new one.

There are very, very few cars today that our children and grandchildren will be collecting, cherishing and restoring.

Even the role of the mechanic has changed. Long gone are the days when a mechanic's job was to find the problem and replace a mechanical part.

Today, if the plug-in diagnostic computer says replace this or that electronic module, then the mechanic will look no further than the screen. These modules in many cases are worth more than the car.

Complexity and technology comes with a cost.

The number of perfectly good cars being scrapped because of this and the social pressure of consumerism to have the latest car is madness.

No matter how much more efficient and less polluting modern cars are, at least 50% of their overall pollution contribution comes from their manufacturing.

Upcycling

Upcycling is the process of converting old or discarded materials into something useful and often beautiful.

You often see upcycled furniture or clothing.

What is the difference between Recycling and Upcycling?

Recycling takes consumer materials, mostly plastic, paper, metal and glass and breaks them down so their base materials can be remade into a new consumer product, often of lesser quality.

When you Upcycle an item, it is not being broken down to its core materials to be recycled. You are refashioning it, improving it, giving it new life; like cutting up an old shirt to make something new, but it's still made of the same materials as when you started. Also, the Upcycled item is typically better or the same quality as the original.

So how about Upcycling our cars?

In a strange way many countries in Africa and even Cuba have a culture of make and mend, sometimes finding the most creative solutions imaginable to keep their cars on the road, due to lack of parts or money.

In reality, Upcycling of cars has in reality always existed, from the first bespoke carriages at the dawn of the automobile, to the Custom Cars and Hot-Rods that started in the thirties and took off after WW2.

It may all sound like part of the slow food, slow sex movement, but we can't drive quickly anymore anyhow, so why not take the time to enjoy things more including our cars?

To see **EMD's** latest Upcycled car project please click [here](#).

What Will It Take?

In Cuba it took the Cuban Revolution of 1953-1959 and the ensuing embargo from the USA to leave all of the pre-revolution American cars without spare parts.

When push comes to shove people get creative and for the last 55 years the Cubans have been maintaining these old cars with parts from others and genius solutions. One visitor to Cuba even saw someone making brake fluid from bush sap and mineral spirits.

In Africa it has been the need to have transport, no matter how old or battered. Africa has always been the graveyard for dying French cars, which instead of being crushed, take the boat from Marseille to start their new lives in Africa. Again the ingenuity of the Africans to keep them running is amazing.

But how about for the majority of us, the people happy to sit in traffic jams everyday so that we can partake in the rat race? What will it take for us to make the change?

I certainly don't want to imagine revolutions or economic suffering as a way to make change, but as long as new offers of transportation solutions are not available, then we will continue to depend on the car.

Can we depend on the car manufacturers to take the first step?

My Eureka Moment

On the 9th of December 2010, nearly 5000 staff at the OEM tech centre where I was working got snowed in. It was total gridlock and utter mayhem.

Not in the mood to participate in the newfound solidarity and comradeship of my fellow 'stricken' workers as they queued up for their evening company subsidised "bifteck et frites", like Pavlov's drooling dogs, and certainly not wanting to sleep at my desk, or work the next day with ripe unwashed fragrant Frenchmen, I decided to walk the 14km home.

It was full moon and the grey-blue light reflecting off the perfectly even snow made visibility easy. It was eerily quiet, not a car engine to be heard.

The only sounds were those of crunching feet in fresh snow, the sound of birds chirping and of children laughing.

I walked the same route that I had driven daily for the last seven years. I saw things that I had never seen before from behind the wheel of my stylish tin-box; little side streets, cute houses, parks and greenery.

Until then I had never realised that there was anything on this road except the daily scene of moribund 1960's high street architecture.

When I crossed paths with other walkers, they were courteous and smiled.

I stopped on the way for a quick meal at my local Indian restaurant that kept me warm and in good company.

Sure my feet were wet and my shoes ruined when I got home, but guess what?

I walked the 14km in less time than driving home on an average Friday evening.

It felt great.