



Xcar – Part II

More Thinking about Xcars, Immaterialisation,
Dematerialisation and More

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Introduction

This little thinking exercise¹ is about a topic which we have chosen to “Xcar”. It is intended to be read in parallel with two other short think drills: “The ‘Xcar’ in Your Future” and “Immaterialisation? A Poor Man’s Guide”. All three pieces are available for review and comment on the ASSIST web site at <http://assistweb.org>, the [@New Mobility Agenda](http://newmobility.org) site at <http://newmobility.org>, and the [@World Carshare Consortium](http://worldcarshare.com) at <http://worldcarshare.com>. It is felt that as a result of the fact that they are being read and, one hopes, critiqued by three quite different professional audiences, each with its own interests and specializations, should help to ensure their quality and relevance (or utter discussion, humiliation and running out of town of the author)

As you read these documents you will note that there are frequent references to something called “carsharing”. These are not unrelated concepts, but they are as you will hopefully appreciate not altogether identical. If carsharing is, say, a medium evolved primate, then Xcar is, say again, the earliest variant of homo sapiens.

We need to be sure that we have this distinction firmly in mind because so often many of us think we know what the primal ape or carsharing is all about. The fact that this may not be the case and that we have not perhaps looked closely enough even at the ape, does not seem to bother most people. This is because the concept of people sharing cars instead of owning and driving their own seems like such a simple one to master. The fact that there are hundreds of such systems that have been built up (and as many that have disappeared) over the last generation should be read as a sign that (a) there is indeed something that is going on and (b) it may not be quite as simple as might meet the eye.

Of course if you have already made up your mind about all this, then save yourself a few minutes and stop here. But if you do chose to read on, it is almost certain that you are going to spot ideas and phrasings to which you may object. If and when that happens, you are warmly invited to address your comments to the author of this piece.

¹ Henry Ford in his highly original "My Philosophy of Industry" published in 1929 wrote that of all the kinds of work he could imagine the hardest work of all was thinking, and that's why most people don't do it.

Objective

My goal with this piece is not to sell you either on the concept of Xcar as something that maybe you should be thinking about doing yourself (but maybe you should since it can be a great way to live). Nor am I trying here to push the idea of Xcar is as an example of immaterialisation that is so very good that it deserves to be among the examples to be developed and exposed by the ASSIST team between now and February 2002.

No, what I would like to accomplish with this little paper is to exercise the idea of Xcar as a readily understandable example of immaterialisation (and dematerialisation), in the hope that in the process I will be able to advance the group's understanding (and my own, thanks to your comments and feedback) of how immaterialisation works or might work in one specific real world case.

Think of this as a proposal for a really good null hypothesis – one whose goal it is not necessarily to be right at the start, but to evoke thought and reactions and perhaps in due course be replaced by a stronger and better hypothesis. Unless of course it is very important for you to be right from the very beginning.

Xcar?

We have deliberately chosen this strange name in the last months for several reasons, including not least that it has the advantage of NOT being carsharing or anything like it. This we feel is important because if one is to understand the future it is important not to be encumbered with not too much inappropriate intellectual luggage.

Xcar to us evokes a couple of useful things in the present context. For example:

1. The “X” is used to signify something that is unknown, and the last three letters suggest that it may have something to do with motor cars. A new kind of car?
2. “X” refers both to an unknown thing or person, and also to an unknown quantity. This last also has significance here since this is a new concept and in its early stages we will not be able to be very precise about the quantity side of its future.
3. “X” is also used as a multiplication sign, which we think appropriate since we anticipate that Xcar will indeed multiply and proliferate.
4. If I am illiterate, I will sign myself with an “X”, which may identify me in certain cases but also tells you something about me at the same time.
5. “X” – thinking of it this time as the Latin preposition “ex” -- also means without, exclusive of. Free of. Thus, I am suddenly without my car, free of it.²
6. And of course as “ex” it also means beyond, as in “beyond the car”.³

² You may not have given this much thought in your own life, but if you talk to those who have taken the step, one of the things that is most striking is the extent to which they celebrate each day that they are indeed “free of their car”. May not sound like much to you at first, but you might consider talking to a sample of them to understand what it means to them.

³ An X is often used too as a sign of a kiss. Now this is not at all intended as a joke or sly remark. Certainly one of the greatest victims of ‘rational thinking’, such as the predominance of economics as a motive for choice, in the old 20th century is that it excluded concepts such as love (or, just as often and just as bed, loyalty, patrimony, culture, community). So if Xcar helps us to remember that love is not something to be excluded or reduced so a trivial sideshow in our personal and collective choice, then is this not an important additional attribute of our new word?

A Bit of Conceptual Arithmetic

Let's try this just to get us going and with the thought that it may help us understand that this concept is not just some sort of irrelevant small change. Very roughly then...

- There are something on the order of 500,000,000 cars in the world, roughly 40% of which in Europe.
- According to our rough calculations, something on the order of half of these 200 million odd Euro-cars are good, fairly near term candidates for Xcars.⁴
- If within the next decade, say, all 100 million of these targeted owner drivers switch to Xcars (and who knows, it might be more) then we are faced with a situation in which, say again, 90,000 private cars disappear from the roads and parking areas of Europe.
- They disappear from circulation, by the way, not because of pressure or improvements from the manufacturers – to the contrary, wouldn't you think? – but because these 100 million Europeans have started to think differently about what it is they want from life.
- This leaves us with 10,000 Xcars out there on the street. There are a couple of interesting points in our present context about them too:
 - They will be driven in a different manner from the old cars: more intensely, for the most part over shorter ranges, most often in and around cities, and by different drivers.
 - We can therefore anticipate that the industry will quickly understand that this is a new product area and will begin to design and optimize for these new use patterns.
 - And incidentally, once a given product can be more narrowly targeted in terms of its operational context, it can of course be more aggressively designed for that context. In this instance, we can expect such things as better fuel performance, perhaps different motive technologies, certainly smaller vehicles, and the list has to go on.
 - Further more, since they are more intensely used, we can also anticipate shorter life cycles, which means that future generations of Xcars will be more rapidly upgraded than as things stand today – with, almost for sure, new, better and more materials-efficient technology.

⁴ If you are currently a car owner and live in a city and drive less than 10,000 km per year, then you are a good candidate for an Xcar. See WorldCarshare.com for details.

Xcars and IST

The Xcar world is today just beginning a transition that will shortly make it into an IST intensive industry.

For the most part, the local groups offering these services are more or less average' users of IT, but if you look at them closely you will see that there is a steady trend toward ever more intensive use of these technologies in just about all ends of their business. Given the extent to which this is basically an information intensive business, this is hardly surprising.⁵

But what about the ITS-intensive Xcar system of the very near future? How might that work? Well, a look at what is going on in Helsinki at their new CityCar Club (<http://www.CityCarClub.net>) will provide some useful clues. Here is the basic pattern that they are working toward:

1. I am a signed up member and need an Xcar, so I dial the three digit hotline code on my mobile phone. This takes me into the Xcar control center.
2. The robot know who I am, where I am (GPL phone), and where the nearest Xcar is (more GPL).
3. Based on this information it proposes to me the closest vehicle, also identifying vehicle type, color, what have you.
4. I do not accept the proposal for a small city car since I need something larger, at which point the robot gives me the precise location of the nearest station wagon, together with a map (WAP?) which show me where it is and how to get to it.
5. I accept and reserve the vehicle (for which a small charge is made and 'enough' time given so that I can get over there without breaking my neck.
6. When I get to my reserved Xcar, I use the mobile phone to open the door, and then to start the engine.
7. When the engine starts, so too does the automatic charge to my credit card (pre-registered of course).
8. I drive to my destination, use the mobile to cut the engine and lock the door, and my counter stops clicking.
9. During all this time the Xcar is fully monitored to make sure that it is properly fueled and that the vehicle is fully road ready.
10. If there had been any sort of incident or damage, monitors pick this up and, if it happens on my watch, then I am responsible for it.

Is this the way that Xcars work today? No. But it is the way they are going to work in the future, and were it not for the ability of IST to integrate in this creative way with the hardware and the management system, then the major Xcar revolution would probably never occur on the scale that I believe we can now anticipate that it will.⁶

⁵ Again, if you are curious a visit to the current International Inventory that you will find at WorldCarshare.com will help make this point.

⁶ Incidentally, it seems clear that there is scope for a much broader transport information system that will not only tell me about Xcar availabilities, but will also offer my information on the full spectrum of other movers as well (public transportation, taxis, all kind of new services, etc.)

The Xcar Process (Or was that 'Switch'?)

With a full generation of evolutionary experience now behind us, something on the order of 100,00 people already involved with early Xcars in a couple of hundred cities around the world, most of which as yet in Europe, this is not an entirely abstract concept. Let us see if we can trace some of the elements of the Xcar pattern as it plays itself out in real life to probe for any telltale signs of immaterialisation (or dematerialisation) in the evidence:

- There are three essentially preconditions for Xcars to be turned from abstract concept into fungible reality in any given place:
 1. There has to be someone or some entity there to supply them.
 2. The place – until now almost always a town or city – has to have some kind of critical mass of people who know how to drive and can afford to do so when it is necessary.
 3. And it is, finally, necessary that these good people be able to add and subtract, and that they apply these skills to their car and transportation budgets – for if they do, and they drive less than 10,000 km a year, they are god candidates for Xcar.
- Most, but not all, of the people who join an Xcar club are car owners.
- One common pattern is that they will in a first instance substitute the Xcar for their “nth” car, meaning the second or third or whatever depending on the person or family. Another is that they will hang on to their own car until such time that they become fully confident that the local Xcar provider can satisfy their requirements.
- Almost all Xcar users – but again not all – are also frequent users of other, non-car means of getting around, whether conventional public transport or walking, cycling, whatever. (And in fact, if there is not at least a certain minimum of amenity in these respects, it is far less likely that someone will convert or come into Xcar.
- There is some legitimate concern that suggests that the availability of Xcars may work against sustainability to the extent that it offers relatively low cost auto transport to people who might otherwise not be able to afford their own car. The suspicion lingers that Xcar might operate as a “learner system”, which develops the car habit in particular in younger people who, as soon as they possibly can will ‘upgrade’ and buy their own car. There can be no doubt that if this were a major trend then once again we should have an example of something that is advanced as an “environmental improvement” that only serves in the longer run to entice even larger numbers of people out there making choices and acting in ways that yet further degrade the environment, etc.
- Is this a legitimate fear? I for one have no ready answer to that. What I suspect however, based on my extensive direct contacts with people who are directly involved, is that while this does no doubt happen, it is

far less important than the development of a non-own-car life style, and with it the awareness of the fact that a switch over to owning your own car can be a real economic albatross around your neck. (But that of course is no substitute for looking into this important concern in a structured way in the future.)

- If you look at the Xcar process, a couple of things immediately strike the eye. The first is something that is perhaps closer to a “switch” than a process per se – and that is the combination of circumstances and lucidity on the part of the person shifting over to Xcar that somehow come together on the given morning when she says, “hey let’s give this a try”. (But then too, if she is going to get to that point there also has to be a process which crates the preconditions for this to happen.⁷)
- The second salient point that stands out if the whole business of process as it runs through the entire multi-year development cycle is how people, institutions, businesses, communities, and even places undergo a process of perhaps gradual but steady transformation. Thus the attitude of a person or family who have been Xcaring for some time is usually quite different from people who are into it for a year or two. An identifiable change in attitudes and in life style takes place. Ask for example a confirmed Xcar practitioner whether or not she might be interested in buying a good new car if she could get a good deal on it. What response will you get? She will laugh at you. That’s a change.
- Also over time, it appears from the fragmentary evidence that is thus far available, that Xcar practitioners are not only frequent users of other, non-car means of getting around, but also that they gradually shift to using more of them as time goes on. Thus in the early years, the new user will, still a victim of the old habits, call on the Xcar more often. But over time, this need seems to lessen.
- Another trend which seems likely but which to the best of my knowledge is as yet undocumented, is that one addition step in this process of learning and adaptation, might well be when the Xcarer eventually decides to move or change place of work (or other activities for that matter). Thus, we might well anticipate that there will be a gradually tightening of the physical movement locus, as people learn to live (and love) a lower displacement life style.
- One of the concomitants of success in offering real alternatives to an own-car life style is that it makes many more people aware of the fact that our non-car transportation system has in most places and until very recently evolved as a very poor cousin of the dominant car system. In a very large number of places this has crated situation in which if you so not have access to a car – or are not able to drive one – you are literally excluded from society. Many US and other US-

⁷ Which process, by the way, can be abundantly shaped by public policy in many ways. Which of course is what the ASSIT project is all about ain the first place.

style cities show this in an extreme form, which of course adds a significant social vector to these considerations well as the resource and environmental concerns which normally dominate in these matters.

- Is this important? Well, if everyone in our societies were young, reasonably wealthy, psychologically balanced, graced by excellent reflexes, well trained for the responsibilities of the road, and the list goes on... then this would I guess not be a huge problem. But the truth is that the substantial majority of people are not capable for one reason or another to own and drive their own car.
- The fact that our societies are aging and that each year there are more people out there who should not be on the road in this way, makes it a matter of increased topicality and importance.
- In addition, it needs to be stressed that by shifting away from a car-dominated life style and giving more time, thought and resources to creating a legitimate alternative mobility system, we will be able to give greater attention to the special interest of those who today suffer from mobility handicaps and are poorly served by today's reduced range of alternative services. One fo the hallmarks of the New Mobility, in addition to the greatly reduced role of the car, is the emergence of a much boarder range of new mobility services which offer first class access to all our citizens. That would be a pleasant change.

Switches: Immaterialising and Other

The “Immaterialisation Switch” is the moment when a material intensive component of a “satisfier package” (a package of products and services satisfying a human need) is replaced by an IST intensive one. Once the Immaterialisation Switch has taken place the new IST intensive product or service has a dematerialisation trend just like the material intensive one.⁸

I have a few problems with this definition, but if at the heart we are talking about, let’s call them perhaps in more ordinary language, “decisive moments” in which “something goes click” (as in a switch?), then in our Xcar example we can spot a certain number of them. Furthermore, when you think about it they also happen to provide some useful clues as to what might be done on the policy end to influence or highlight such moments and the decisions taken (in the hope that they are indeed in the right direction). With this in mind let me see if I can scan for a few in the Xcar process based on actual experience:

One such “moment” crops up early in the process when Citizen X becomes fully aware of the total cost, including inconvenience, worry, health, etc., of her previously unquestioned “own-car” choices. This is quite a choice and the tobacco analogy is one that immediately comes to mind. What it suggests – and one can certainly see a certain number of interest groups that may find this quite repulsive – is a public information program à la tobacco. Hmm.

Another is the click that goes on in the mind of the mayor or city council when they carry out a parallel “total cost check” of the result of their community’s being tied in to what is basically a ‘car only’ transportation system. The leading edge of the transportation thinking has all the tools that are available to make these calculations quite readily in any given place, and moreover these literally beg to be put into do-it-yourself kit for form local administration and decision. Another golden opportunity for public policy?

Note, in neither of these cases need there be any effort to propagandise either against cars or for something else (and certainly not Xcar if one is wise). These are pure public information programs, that provide tools to citizens and local government along with some smiling encouragement to give them a try. That’s all.

A third click that we can spot is what happens when that own car is not always sitting there at the end of your driveway. The owner driver is an impulse traveller on most occasions. But the Xcarer, by nature of the new relationship with the beast of transport, has to think about it first. That may not seem like an awful lot, but in daily life it is (a) quite a strong change and (b) one with signification implications for both personal choices and public impact. This moment of thought, even in the very best imaginable IST mediated schemes, inevitably leads to such handy things as more trip chaining, grouping of tasks (and people in the car), and the like. Big difference!

⁸ As per a message to the group of David Leever on Thu Jul 19, 2001 .

A fourth and closely related click occurs when it is actually time to travel. The Xcarer is a true multi-modal person, and thus will seek the most appropriate travel mode for that trip. This means – based on the evidence – considerably more use of public transport, walking, cycling and the like.

This list could go on since there are plenty of such turning points, each of which potentially rich in policy considerations. But for now perhaps we can leave it with two observations:

- The first is that the clicks, or switches, are deeply embedded in the broader transformation process (did someone say substitution?). Which suggests to me that if you don't understand the process, you will never be able to spot the switches.
- The second is that, in this particular process anyway, there are no deus ex machina moments when IST steps up and says "now you have a choice". IST in all its many forms is, as we have seen a vital concomitant of Xcar in the future, but it is not, in the words of that good book by Tracey Kidder, "The Soul of the Machine".

What I take this to mean is that life is complicated and that if it is our objective to help the Commission do a better job in managing and shaping public policy in these matters, then there is every reason for us in the ASSIST program to dig in, find some good examples of this immaterialisation process in real world situations, and to scan them for these moments of truth and the policy opportunities that may go with them. And since we have limited time and resources, there is every reason for us to chose only a small number of such examples and to handle them in easily understandable ways that are presented in such a way that they can be cross-checked for accuracy and completeness.

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Conclusions

1. Xcar is, at the end of the day, all about an alternative life style.
2. To the extent that it happens, it is driven by individuals who make decisions that influence themselves and their families in a first instance — but which also, as it happens, can have positive impacts (or, perhaps better to say, reduced negative impacts) on resources, the environment and the community.
3. As our little conceptual arithmetic drill suggests, it would seem that there is a possibility that rather considerable quantities of resources and effluents (and people) might be involved and possibly kept out of the production/consumption stream — and that this might therefore be an excellent reason to have a closer look.
4. On balance we see this as a process of transformation — “substitution” may be a better word here — that offers a good real world example of how immaterialisation (decreases in materials flows through society as a result of decisions taken on the consumer side) and dematerialization (the adjustments of industry that lead to decreased material inputs through unit or dollar of output) interloop and interact with each other.
5. The role of IST is critical if Xcar is to take off as a major new pattern of daily life in the years directly ahead.
6. There are also significant business and employment potentials in this area, including but by no means limited to IST..
7. For various reasons Europe is especially well positioned to take the lead in this area.
8. There is no doubt that informed public policy could play a critical role in making this happen earlier and better — but that the base for these good decisions is yet to be developed. (On the other hand, if you have a close look at the ample materials available under WorldCarshare.com you will see that there is already some good advance work that can be used and built on to make this happen.)
9. I hereby nominate Xcar as a prime candidate for the ASSIST program final presentation and recommendations — unless of course that you can show us a set of better examples which we can bring far enough along this cycle by 1 February 2002 in order to be credible and useful to the Commission.
10. If the Xcar example can be demonstrated in a convincing way in the few months ahead, it may be useful to consider at a later stage a more general approach, looking at the impact of IST on short distance transport more broadly. In the meantime, Xcar has the benefit of targeting a more limited area, happens to be quite well defined in terms of available sources, and hence well adapted to this first study.

ASSIST

Xcar: More thinking for the willing