The Demand Responsive Transit Exchange

Overview and Description

The Mission

- We want nothing more than to reform the way all vehicle travel is planned and executed in every city in the world. The total market opportunity here is of the order of trillions of EUR per annum. Transport and Logistics are amongst the largest markets on the planet. We can extend those markets by applying capital market innovations to the transport space in a comprehensive and integrated manner.

- Freight Derivatives makes a way into this somewhat, but not in a sense that it integrates the hospitality industries with logistics and transport.

- We also seek to combine thought and planning in the Hospitality, Logistics and Transportation (HLT) industries as we see these three industries as being inextricably linked such that they would be more correctly considered as one industry - HLT.

The Mission

– Travel to a city increases because of the amenities and ease of travel within a city and the great hospitality industry within the city.

– People travel to see a city because there are easy and well priced transport links to that city. People then want lodging when they get to that city and will stay longer or return because of the quality of the lodging / entertainment. People need to get about within a city once they are there. The city then has increased trade and needs more deliveries of food and goods.

– It is clear that all three functions are symbiotically linked. A Demand Responsive Transit Exchange will link all functions seamlessly - leading to increased (and more importantly long term sustainable) commerce for the city / region.

What is a DRT Exchange?

- A Demand Responsive Transit Exchange (DRTE) will allow people to effectively access transportation resources in a municipality more readily than currently occurs. It is based on the idea of a stock exchange where an intermediary (the exchange) allows buyers and sellers to trade with one another in a transparent market.

What is a DRT Exchange?

- Imagine if you could, by using SMS, obtain point to point transport (shared or individual) for a fixed*, predictable cost. This is the core concept behind Texxi (www.texxi.com).

- Such a scheme will also be a de-facto carbon exchange.

*fixed meaning transparent – the price will change according to demand and road conditions

The DRT Exchange

- The key concept behind the whole DRTE model is one of broking – find users who need a product/service and put them in touch with suppliers who supply that product/service. The exchange makes its money by subscriptions from the suppliers and by taking a small slice of every transaction carried out on the part of the user.

- The implementation of such a Texxi Cloud in an urban environment calls for a radical and necessary overhaul of taxi laws*. Why are there actually taxi companies, bus companies or airport transfer companies? Why not simply "Transit Companies" which can run any type of vehicle as long as the relevant licenses are in place.

*   *actually, rather it calls for a simplification and deregulation of the taxi laws in a municipality / state*

The DRT Exchange

- What a DRTE exchange will create is a mechanism for any and all transit companies to compete fairly in a transparent and open way, much in the same way as a stock exchange works. The immediate benefits to this are a reduction of the lack of service exhibited in too many cities by sated monopolistic providers.

- Chief Executives of cities need to face up to the reality that by far the single biggest obstacle to city growth and harmony are taxi monopolies*. Once the provision of taxi services is handled in a way which doesn't differentiate between taxis, buses, carpools or later, even rail service providers a city will be freed from movement constraints.

  *non-Nash taxi oligopolies or duopolies

The Role of the DRT Broker

- Once an exchange exists in a city, there will be the ability for anyone to apply for a Broker License – much in the same way as a real-estate broker is regulated. Brokers will exist to prevent monopolies forming which would limit the choice consumers have when it comes to choosing a transit provider. Brokers would be required to maintain detailed records of whatever trips they have packaged for users and transit companies.

- The success of a broker will thus lie in his/her ability to find the best priced trips available from the myriad transit providers. More importantly, there will be a significant economic incentive for brokers to identify the most efficient ways to move the most people in the most comfortable manner so as to ensure future repeat business.

- From the fees brokers and transit providers pay to the exchange, a fund for insuring the transit operators can be funded. This will be a "taxi drivers benevolent fund" which will allow drivers with provable illnesses to be compensated while they are off the road, provided they have paid their insurance premium

Paratransit

- Texxi systems will provide a viable alternative to the private car.
- Most people in most large dense cities only have a private car because they cannot get to the places they want to cheaply without one.
- Public transport by itself will not suffice.
- We should not limit people to using just public transport
- A Paratransit system is something that falls between the private car and the public bus

Hospitality, Logistics and Transportation (HLT) Cloud

- If a city's main actors responsible for increasing external actor spend (tourists, visitors) within the system (the city boundaries) collaborated efficiently, how would they do it?

- The answer: There would be a scheme to which all the hotels and business in the leisure districts would contribute in order to whisk travellers from the seaports, airports and railway stations to the spend points as quickly as possible. This happens in Prague, Czech Republic already. A fleet of VW Transporters takes any and all tourists to anywhere they want to go in the City Centre for a fixed low flat fare.

Hospitality, Logistics and Transportation (HLT) Cloud

- We know where users (potential users) are. We can predict with algorithms and models where users will be and based on rolling data gathered, we can even place those vehicles "magically" ahead of demand, once detailed and dense "Demand Maps" evolve. There is therefore no need to have buses driving around mostly empty when no-one is using them. The year after all is 2006 not 1806.

- An **HLT Cloud** is a concept which emulates that of National Postal Services or the Internet. The HLT Cloud will allow a user to summon a vehicle by using a device (a mobile phone / touchscreen plinth) to allow for real-time transit fulfilment. In effect the user can "address" and "send" himself/herself just like he/she may send a letter or email.

- In the National Postal mode, users put a letter into a post-box after having addressed it and paid the postage. With the internet, email documents are addressed and sent via the worldwide web cloud. With Texxi, users address their destination and then get picked up by the nearest available vehicle.

What problems this solves

- Reduction in air, noise and visual pollution from the road system and its vehicles
- Lowered carbon emissions and lower aggregate fuel use per 1000 people moved
- Reduction in overbuilding of roads and preservation of greenspace around a city
- Gridlock and extreme traffic congestion
- A means to finance road maintenance without raising new taxes
- A means to tackle Social Exclusion
- It will combat poor legacy infrastructure design, town planning and poor implementation of a transport system.

What problems this solves

- Any business can now be sited almost anywhere in a city. Each business does not now need to invest in buying a new vehicle to move its goods.

- This is effectively E-Commerce Enabled Demand Responsive Urban Logistics. It allows businesses which do not need large shop frontage to still be profitable even though their business operations may be sited some miles away. It will reduce clutter on the high street.

Evolution of the fulfillment of search

- The integration between the boundaries of online search and travel will become increasingly blurred to the point where the two activities are seamless.

- If one considers that the intentions of a large number of people start with an online search (including mobile online search) then there are two fulfillment paths to consider
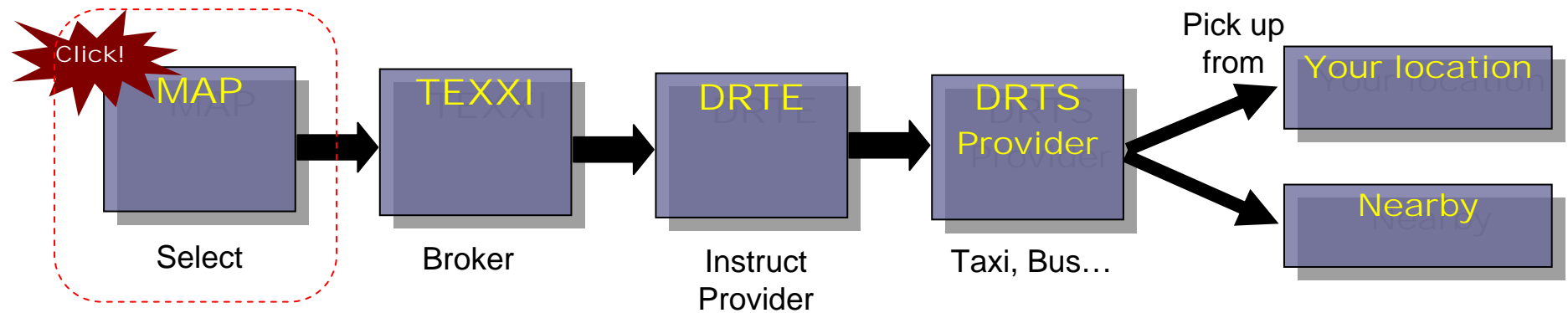
Fulfilment Path 1

- In the first case, the intention is fulfilled by moving an item TO the person who executed the demand. This is handled extremely well by the logistics business space. There is room for evolution, but generally it is a problem with excellent solutions. When the item required is digital in nature, this is taken care even more effectively by the network / bandwidth provisioning companies (Digital Logistics).

Fulfilment Path 2

- Secondly, an intention is fulfilled by moving the person TO the intended place. This is handled neither particularly well nor seamlessly.

- Assume I am a tourist looking for an attraction to visit in a foreign city. Normally I would use a (space-domain) map, figure out where the attraction was located, then figure out how to get there and how much the trip would cost. I would then go to find the transport and try to coincide my itinerary with a timetable.

- Now with an evolved Texxi model, I would use my mobile communications device with either a time-location-domain map of attractions OR a cost-location-domain map of attractions (these are maps which show loci depending on how long it takes get there or how much it costs to get there; the actual distance is normally a secondary consideration, it is just that this normally has some reasonable relationship to the time it takes to get there).
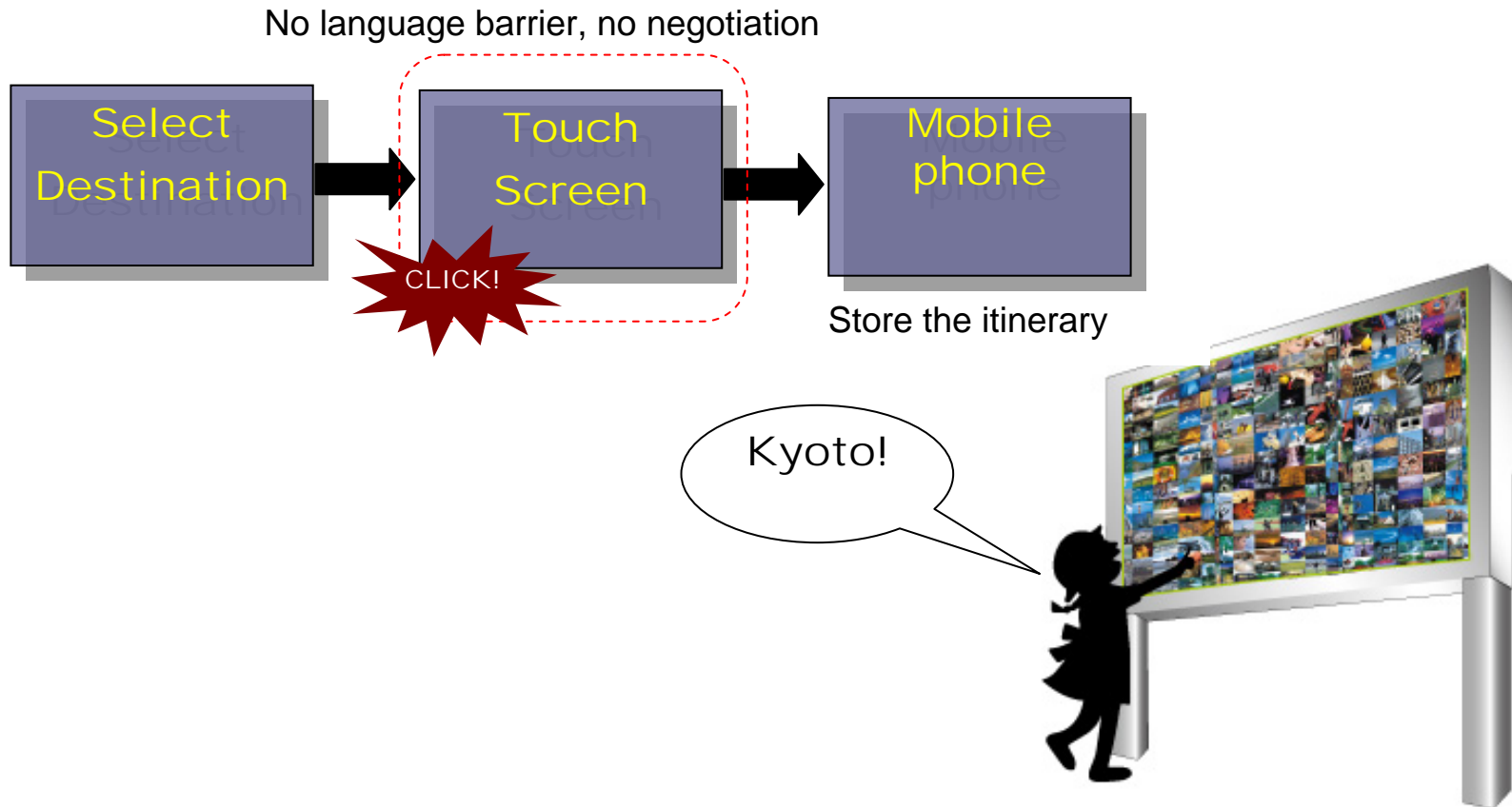
Fulfillment of Transport Requests

Click!

MAP	→	TEXXI	→	DRTE	→	DRTS Provider

Select

Broker

Instruct Provider

Taxi, Bus…

Pick up from

Your location

Nearby

- This group is further filtered by behavior/reputation parameters – so I don't get put in transport with football hooligans.

Example TouchScreen Application

- Enable intuitive, barrier free real-time transit fulfillment.

No language barrier, no negotiation

Select Destination → **Touch Screen** → **Mobile phone**

CLICK!

Store the itinerary

Kyoto!

Capital Market Innovations

Once we have maps of demand and supply on an exchange, we can bring to bear all of the innovation so beloved of the financial markets.

Losses from "no shows" will be a thing of the past, since the contracts (confirmed SMS booking messages) will allow drivers to be paid whether the passenger turns up or not.

Capital Market Innovations

- A city can hedge against energy price moves with a DRT Exchange (which is both a Demand Map in the temporal Domain as well as a Demand Map in the spatial Domain).
- A city can fund road and infrastructure improvements related to the transport system via the DRT Exchange.
- Citizens can lock in their transport costs for up to a year in advance and if need be can use swap contracts as and when their situation changes (illness, new job etc).
- Tourists will not be able to be overcharged when visiting a city - this will lead to further tourist revenues.
- Hospitality Industry TV screens can act as interfaces into the TexxiLand© platform.
- Telecom Companies can make revenue through the DRT applications running on their networks (TexxiLand© will be an open platform).
- Vehicle operators can rectify (smooth out) their cashflows with such an innovation.
- The finance industry can now make use of a whole new type of financial instrument - DRT Options, DRT Futures, DRT Forwards, DRT Bonds , DRT Swaps and other DRT Derivatives.

Capital Market Innovations

- Transit Bonds
- Transit Futures and Forwards
- Yield Curves
- Trip Default Swaps
- Transit Swaps
- Trip Call Options
- Credit Ratings (customer supplied ratings on a driver's behaviour)

Mapped Concepts

Concept Space			
Capital Markets	**Transit Exchange**	**Low Cost Airline**	**Hotel Industry**
Pooling together of loans, mortgages, credit card debt	Pooling together auto-loans of drivers backed by cash flows on the exchange.	??	??
CDO (CBO / CLO / CMO / CDS)	Collaterised Transit Obligations (CTOs)	??	??
Futures Contract	Cashflow settled fares which can be used to help you manage your cashflow - by paying in installements	Korean Airlines allows installment pays	Prepay and credit terms in advance
Forward Contratcs	Super Advanced Booking for ultra-low fares	Super Advanced Booking for ultra-low fares	??
Call Options	Option to travel at a reduced price in the future	Loyalty Schemes	Loyalty Schemes
Reserve Price	Dynamic Auctions	Travel Auction Sites	Travel Auction Sites
Market Maker	Texxi itself as the City Market Maker	The myriad airlines themselves	The myriad hotels themselves
Credit Default Swap	Trip Default Swap	??	??
Commodities Exchange	Transit Exchange	Travel supersite	Travel supersite
Default Contagion	Trip Clustering and Packaging		
Mitigation of Risk by pooling a few loans together to guarantee cashflows to a lender	3 Drivers for every 2 trips to allow for breakdowns	N/A	N/A
Broker	DRT Broker	Travel Agent / Booking agent	Travel Agent / Booking agent
Liquidity	Exchange supplied liquidity ("Stuff Ups") - used to pay the driver if there is not enough demand	The myriad airlines themselves	The myriad hotels themselves
Firesale Discounts	Last minute fares		
Yields	Dividends	Yilelds	Yields
The market for a particular security	HLT Cloud	Code Sharing for pushing over execss demand to a code share partner	Partner hotels to deal with overspill - private agreements - no formalised mechanism we are aware of