SMART
Sustainable Mobility & Accessibility
Research and Transformation
UNIVERSITY OF MICHIGAN

CONNECTING (AND TRANSFORMING) THE FUTURE OF TRANSPORTATION:

A Brief and Practical PRIMER for Implementing Sustainable Door-to-Door Transportation Systems in Communities and Regions.

THIS IS A DISCUSSION DOCUMENT:
Please send comments and suggestions to:
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FIA Foundation for the Automobile and Society
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ABOUT SMART

SMART undertakes research, demonstration projects, education, and global learning exchange on a range of issues related to the future of transportation in city regions around the world.

Action for sustainable transportation is especially important now, as accelerating urbanization, population growth, globalization, and demographic shifts reinforce transportation and development patterns that threaten climate, environment, biodiversity, energy security, social equity, productivity, urban economies, and the quality of our lives. Recognizing the complexity of the challenge and the sophistication of the innovation required, SMART takes a systems approach to urban mobility and accessibility. We work with local and international partners from diverse sectors and disciplines to understand and develop new theoretical perspectives, and to generate practical, innovative solutions that tell a holistic and hopeful story for the future of city regions and the people in them.
SMART, Sustainable Mobility & Accessibility Research & Transformation, is a project of UMTRI, the University of Michigan Transportation Research Institute, and TCAUP, the Taubman College of Architecture and Urban Planning, in Ann Arbor.

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INTRODUCTION

Recognizing that no single solution will save the day for transportation in this rapidly urbanizing and increasingly complex world, a groundswell of transportation innovation is arising worldwide. However these innovations are too rarely linked and optimized in a way that can provide a convenient, practical, affordable and sustainable door-to-door trip for the user. The next generation of urban transportation is about connecting transportation modes, services, and technologies, bringing diverse innovations together in ways that favour accessibility (meeting needs) over mobility (moving for the sake of moving), and that work significantly better for people, economies, and the planet.

This brief white paper has been written in response to demand for a "New Mobility Primer" by project partners of the SMART initiative at the University of Michigan. Developed with the benefit of knowledge, experience, and new discoveries gained from these groundbreaking projects in cities around the world, it is a discussion document leading to a more comprehensive primer slated for completion and distribution in the autumn of 2010.

The purpose of both the white paper and the subsequent primer is to describe and document new integrative approaches, guiding principles, and current cases that will serve SMART partner communities. It is also meant to serve businesses, community leaders, transportation practitioners and policymakers who are interested in improving and transforming their transportation systems (and related economies) as whole systems. While there is a growing number of excellent publications and web-based resources listing and describing specific innovations, fewer resources describe how to bring these innovations together optimally for both the user and the community. This white paper aims to contribute to a growing literature of integrative and practical approaches to implementing multi-modal, "next generation" transportation. More broadly it aims to contribute to advancing livability, sustainability, and economic vitality in city regions of the world through systems-based transportation.

To provide an ongoing space for global learning exchange on this topic, the more comprehensive primer will link to a web-based resource that is being developed in parallel. In the meantime, any feedback on this white paper that might serve to improve the subsequent primer and related web-based resources is embraced and appreciated. Please contact Susan Zielinski (susanz@umich.edu) with comments and questions.

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CONTEXT: NEW REALITIES

Unprecedented Urbanization

The world is urbanizing. Currently half the world lives in cities, and soon that proportion will rise to two thirds. So we can no longer think of experiencing or implementing transportation the way we used to. It is becoming more universally clear that the most commonly pursued solutions don't fully address urban transportation's increasingly complex human, physical, and political context. For example, alternative fuels alone, while focused on environmental concerns, do not address issues of land use, health, infrastructure supply, or safety implications associated with personal vehicles. Further, applying pricing mechanisms alone as a deterrent to car use without providing affordable and practical options only adds to the economic burdens of the working poor and elderly on fixed incomes.

Other Driving Forces

In addition to urbanization the challenges of globalization, a rapidly increasing aging population, congestion and sprawl, climate change, global economic hardship, and increasing social disparity, all affect and are affected by transportation in a fundamental, ground-shifting way.

CONTEXT: EMERGING INNOVATIONS AND OPPORTUNITIES

In response to these complex and multi-faceted trends, there is no shortage of transportation innovation. In fact there is a groundswell of new modes, services, technologies, and designs being developed and applied worldwide.

Modes:

New advances are being made on a diverse range of transport modes including bus rapid transit, high speed and mag-lev rail, non-motorized modes for moving people and goods (bicycle and pedestrian innovations), innovative freight vehicles, marine travel, automobile based transportation, and more.

Services:

The last decade has seen a significant increase in service orientation to transportation including fixed route and on-demand shuttles, as well as "fractional use" options like car sharing and shared bike programs. There has also been a recent increase in the use of social networking tools to support shared car use through programs like GoLoco and "slugging"

Technologies:

While fuel and vehicle related improvements have been the predominant technological focus of transportation innovation, a more recent and perhaps more significant shift is telecommunications technology. "Intelligent Transportation Systems" form the basis of a comprehensive transportation-related infrastructure that includes:

- journey planning and way-finding
- fare collection
- road pricing and congestion pricing
- traffic management that makes use of "mesh networking" or "the cloud" to facilitate both real time information gathering for the operator and real time information dissemination for the user
- telecommuting and other telecommunications options to reduce or replace trips altogether
- transportation- related decision making.

Designs:

New approaches to product design as well as urban and community design are improving transportation efficiency, reducing trips by bringing key elements of life closer together, improving safety, and building a foundation for multi-modal transportation. Transit Oriented Development and traffic calming are some of the more common urban design applications to transportation.

Moving Goods as Well as People

It is often overlooked that transportation is about moving goods as well as moving people. With urbanization and globalization and increasing telecommunications traffic, goods movement, like people movement, is made more abundant and more complex. And similar to people movement, goods movement innovations abound, ranging from vehicle design and fuel technologies, to intermodal freight movement, to local production and distribution, to innovative supply chain management. In some ways goods movement offers lessons to people movement because to a certain extent it achieves multi-modal, door –to-door, IT-supported transportation. We may be farther ahead if we had "just in time" people movement akin to "just in time" goods movement.

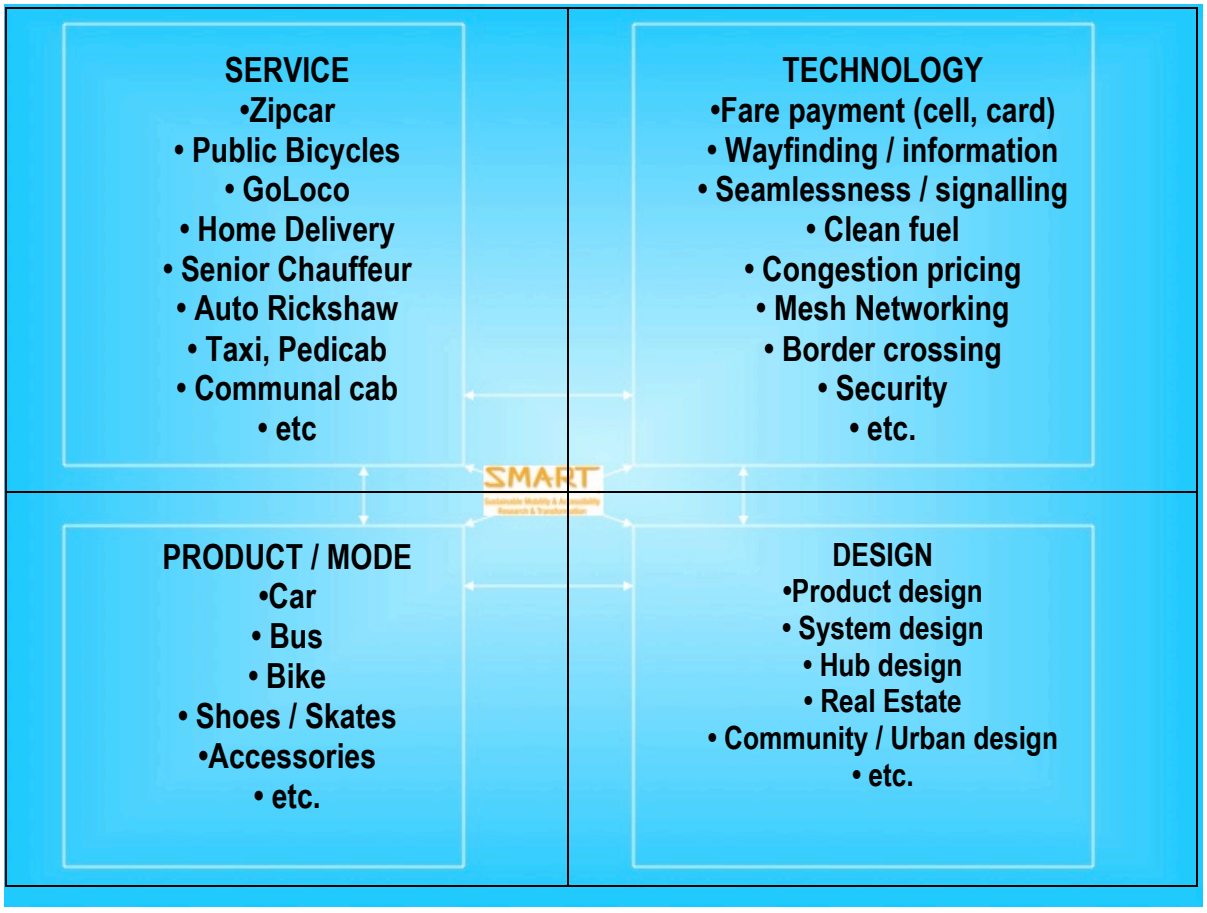
CHALLENGE:

THERE IS NO SINGLE SOLUTION…

As new challenges or new paradigms emerge, the innovations developed to address them tend to bundle naturally, but in isolation from each other. For example, an engineer may envision solutions that involve infrastructure or fuels and may focus less on urban design and policy. An innovative urban planner, on the other hand, may develop a groundbreaking approach to land use and urban design, but may not think too much about new services like car sharing and free bikes and shuttles and on-demand taxis that form a missing link in a door-to-door trip. An IT developer may come up with unique approach to fare payment, journey planning, or traffic management, but may not spend much time thinking about the kinds of land use policies that are beneficial to sustainable transportation.

AND THE DOTS ARE NOT CONNECTING

So despite the proliferation of innovation across all quadrants in this picture, holistic solutions are just not coming together in a way that works for the user door –to-door. A community may have a state of the art rapid transit system, but if it leaves riders off in the middle of the night with no way of continuing the "last mile" or more home to their door, it becomes less practical for the user. Another community may have every transportation mode and service one can think of, but if those modes and services are not physically connected, and if people don't know about them, and if they're not scheduled properly to support and complement each other door-to-door, users will be unable to cobble together a trip that combines them efficiently. Another community may have a most robust urban design and transit system, but may not be making full use of telecommunications technologies that could support awareness of the options, integrated way-finding and fare payment, seamless traffic management, and telecommuting to reduce or replace trips altogether.



CONNECTIVITY IS KEY

Transportation is not simply one mode that moves a person or a good from a to b. It is much more interesting and useful than that. It is a system, or rather a "system of systems" connecting modes, services, technologies and designs according to the best option for the purpose. In this manner transportation systems interact much like our now ubiquitous and customized portfolios of "plug and play" telecommunications technologies that connect desk top with lap top with printer with camera with Google and more.

Back in the 50's the developer and programmer of huge mainframe computers that took up entire rooms might never have imagined that his I-pod nano would one day connect with the internet or that he would one day remotely program his DVD player to record a football game, or that these many technologies would aggregate into one of the world's largest and most powerful infrastructures (and therefore markets) in the world.

This kind of sophistication takes some time to evolve. The migration from typewriter or lightbulb to advanced and customized telecommunications portfolio, or from personal auto predominance (and aspiration) to more sophisticated multi-modal systems and infrastructures can be compared to the evolution of natural systems. Australian transportation thought leader Peter Newman explains:

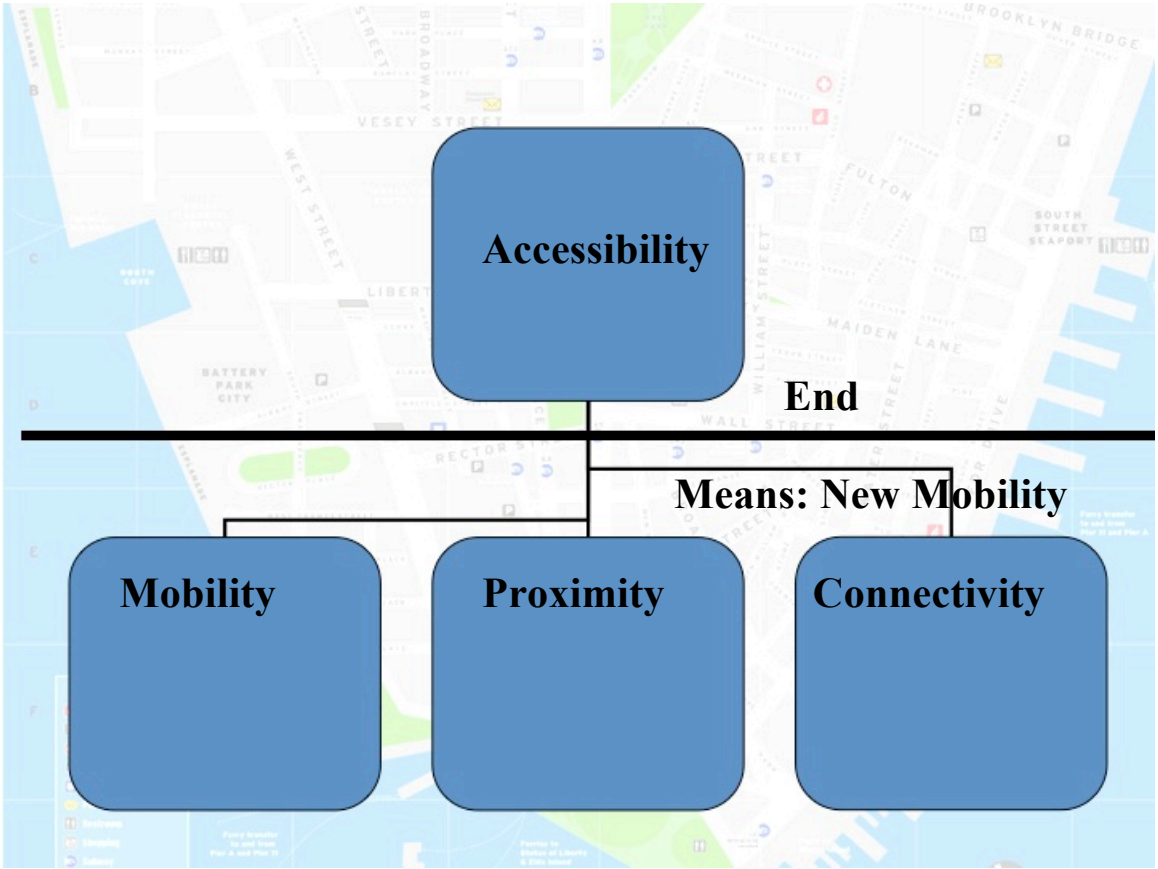
> "In ecological terms, it should come as no revelation that as cities grow and become more complex and diverse, they begin to create more efficiencies. Ecosystems grow from simple systems with a few pioneering species to more mature ecosystems with diversity and interconnection. Thus, after a fire or flood, or some other disturbance, a cleared piece of land will begin developing the structure of its ecosystem with an emphasis on rapid simple growth. After a period it becomes more diverse and more efficient as it establishes a more complex network of interactions".

So while it is tempting -- especially when confronted by such increasing and accelerating complexity -- to seek simple or singular solutions, these approaches don't generally play out well. One could imagine in the process of the creation of the human body saying "it's all too complex – you have a choice – it's going to be a heart or lungs - what's it going to be?". Obviously the human body needs a heart AND lungs AND a pituitary gland, and a few other things, and it needs them all to work together seamlessly. The same is true with transportation.

ACCESSIBILITY IS THE GOAL

Mobility is a Means Not An End

When we envision our future transportation systems it is important to ask for what purpose we're optimizing and dot-connecting. We often forget that transportation is not an end in itself, rather it is a means to an end: meeting our needs. Our aim with transportation is not to move for the sake of moving, it is to help us live our lives and carry out our business – to live, love, work, and play. Thinking of it this way opens up new options. For example if we wanted to improve mobility, we may think solely of vehicles and infrastructure to support those vehicles. But if we wanted to improve ACCESSIBILITY, or having access to our needs, we could also do this with proximity, bringing things closer together and organizing them more efficiently to reduce the length of trips and the time they take. Or we may eliminate the trip altogether using tele-work, tele-commerce, tele-medicine, or tele-education. A three year study led by Jonathan Levine at the University of Michigan has developed a comparative index for measuring accessibility in cities as a way to inform policy and motivate action towards more accessibility-oriented approaches. For more information, see http://terpconnect.umd.edu/~cliu8/



WHAT DOES THE FUTURE LOOK LIKE?

In Some Places it's Almost Here.

Imagine a day, when steps from your door, or even from inside your home or office, you could enter a vital network or grid of New Mobility Hubs, places that connect a whole range of transport amenities including buses, trains, streetcars, clean fuel taxis, auto rickshaws and car share or bike share vehicles, and in some cases, day care, satellite offices, cafes, shops and entertainment.

At its most basic level, a New Mobility hub network is simply a grid of places in a community where transportation modes and services physically connect. In more technologically advanced communities this is all brought together by a telecommunications framework that offers real-time information on arrival and departure times and availability (either through kiosks at hubs or through mobile phones or pda's), as well as access to other information. The telecommunications framework also allows you to quickly and easily pay for these affordable modes and services with a single click or a wave past the reader through a mobile phone or a card or a kiosk. This way you can transfer seamlessly from one mode of transportation to the other, informed of schedules and options as you go, using the best mode for the purpose, gaining access to car share at one hub, and dropping it off at another to pick up a waiting bus or train. It's easy, convenient, affordable accessible, and very 21st century.

For the user, hub networks connect an integrated set of services, products, and technologies door-to-door, addressing the "last mile" challenge and the connectivity gap throughout the trip. For the developer and operator, hub networks are scalable, starting by first linking what exists and then adding and enhancing as budget and political will materializes. Since the key is connecting rather than competing interests, the process and the product includes rich and poor, a range of backgrounds and needs, and urban and suburban dwellers.

For government leaders, this begins to address social, environmental, and economic goals, fostering livability, social equity, green industry and green jobs. For businesses in the emerging New Mobility Industry, this offers an opportunity to generate a new "open source" transportation infrastructure, spur "Public-Private Innovation", and supply the emerging and rapidly growing market for sustainable urban transportation globally.

SMART projects are indebted to and build on integrative work done by many, in particular Michael Glotz-Richter in Bremen Germany. This work has established a foundation for developing connective, sustainable and accessible approaches to transportation that can be adapted to a variety of contexts from small communities to megacities and regions.

OPTIMIZING REALITY: Many Ways to Connect the Dots

New Mobility applies at least five kinds of optimization, or "dot connecting":

Spatial:
Physically linking the full range of transportation modes, services, and design elements to support door-to-door seamlessness through a grid of connected hubs or "switch points"

Component:
Enhancing or optimizing each component of the system, for example enhancing the buses in the system with clean fuels, "low floor" adaptations, and other accessibility capabilities, or with electronic ticketing options; or enhancing the non-motorized component of the system with improved infrastructure such as bike parking and advanced lane design.

Technological:
Applying a full range of telecommunications technologies to support multi-modal seamlessness, system-wide transport information gathering, management and way-finding, multi-service fare collection and payment, trip replacement, security, enforcement, and more.

Institutional:
Connecting urban planners, engineers and city leaders, with business leaders and innovators, entrepreneurs, community leaders, and researchers, to map and transform the infrastructure based on local and regional needs and strengths, and global market opportunities. This can be referred to as Public-Private Innovation.

Economic:
New Mobility brings together a range of economic benefits, including creating jobs, saving money, boosting business, revitalizing local economies and spurring urban competitiveness. It does this by:

- expanding the range of transport-related industries and enterprises to include IT, real estate, tourism, logistics, retail, new services, energy & utilities, entrepreneurial ventures and more (New Mobility industry cluster)
- innovating for local application (and urban competitiveness) as well as for global export; and
- developing new business models that address and capture the growing urban transportation market and employment base.



THE MANY BENEFITS

Though the original intent of New Mobility hub networks was to support convenient and sustainable door-to-door transportation, many "co-benefits" have since been observed and enjoyed:

* They **connect** mode, service, product, technology, and design, seamlessly, with a **focus on the user**, and the user's various and complex needs over the course of the day

* They are designed to support **door-to-door**, sustainable, safe, equitable, affordable, and customized **travel for ALL users,** including those who are of low income, are aging, or disabled. At the same time the system is convenient and appealing to those who do have the resources for other options.

* For the developer or operator of the system, they are **scalable and often immediately implementable.** Sometimes it is even simply a matter of making users aware of connections that are already there, or simply putting signs up or distributing maps showing where connections already exist.

* They are **cost effective** – because they optimize rather than duplicate benefits of the existing system and they more directly identify gaps that need to be filled. They also call for solutions that are generally less intensive in terms of physical infrastructure (and capital budget).

* They are **appealing, hip, and "next generation**" providing more seamlessly connected options, more appealing physical spaces, and more opportunity for connectivity through social networking and telecommunications-based platforms particularly appealing to the younger generation.

* They are **resilient and robust, contributing to both personal safety and national security**. More options, and more connected options mean that there is greater backup in the case of an emergency such as a climate change or terrorist event, supporting both personal safety and system resilience or redundancy. This is much like the energy or IT grid providing resilient and redundant backup systems. Based on sustainable transportation and ideally powered by green energy sources, they can also contribute to prevention or mitigation of such events.

* They **generate business, innovation & employment opportunities** providing:

- entrepreneurial spaces for mobile applications, IT innovations, shuttle and last mile services, new products, and venture opportunities For example: Bill Ford recently launched an LLC to support "transformative" transportation innovations.
- new market opportunities for major companies For example: Cisco Systems' Connected Urban Development, IBM's SMART Cities and Ford Motor Company's megacity mobility
- job access and job creation related to integrated mobility systems
- cost savings both for individuals and for city regions by optimizing the system

SEAMLESS DOOR-TO-DOOR MOBILITY, STEP BY STEP

SMART city projects have generally begun by bringing together a small number of committed leaders representing all sectors from a particular region. Their purpose together is:

- to identify practical, feasible, integrated transportation goals for the future as well as the challenges that need to be overcome to accomplish those goals
- to map the existing system (overlaying modes, services, infrastructure, amenities)
- to identify and implement a pilot integrated network
- to progressively involve others (including citizens) in the roll-out of a full system over time.

Though this simple methodology is still relatively new, it has had surprising results in terms of catalyzing collaborative innovation, creating wider multi-sector networks, evolving cost-effective public and non-profit solutions, and generating new business, regional competiveness, and employment opportunities.

If you are interested in setting New Mobility in motion in your community, here are **four simple* steps**:

1. **Convening – The Crucial and Often Under-Rated First Step**
2. **Mapping - An Engaging and Tangible Catalyst for Action**
3. **Piloting and Roll-Out– Creating a Hologram for Wider Spread Roll-Out**
4. **Moving Minds**

* Though the steps are simple, they are not guaranteed to be easy, however they are likely to be rewarding, at times fun, and unquestionably helpful in some way for your community depending on what you are working with in the first place and the extent to which you engage in the process.

STEP ONE: CONVENING

The Crucial and Often Under-Rated First Step

The first step in this journey is essential because it ensures the presence of the right people and sectors needed and it sets the stage for the magic of collaborative and integrative action. All too often the groundbreaking work that is being done on sustainable transportation happens in isolation, focusing on one particular mode, technology, service, sector, or policy partly because the innovators and operators just don't connect with each other.

As a result, in the absence of a "link tank" to bring the innovations (and especially the innovators and leaders) together, implementation of these innovations is fragmented, costly, at times duplicative, and altogether less practical for the end user. No one individual or institution or innovator is at fault for this, it is just that there is often no responsibility identified to do the pivotal work of connecting the dots.

Who should be the convenor(s)?

Who should initiate the "Link Tank"? In SMART's experience to date this role does not require technical transportation knowledge per se. It has more to do with the desire and need to take a systems approach to transportation solutions, combined with the capacity and skills for bringing diverse interests and skills together and developing partnerships that will work to identify and meet common goals. Leaders of SMART partner city "link tanks" represent wide-ranging backgrounds. For example the kinds of people who have taken on this role to date include a physicist and entrepreneur in Chennai, a regional director of planning in Washington DC, a Mayor in Corvallis, a project director at a major academic institution in Atlanta, two leaders of a non-government organization in Seattle, an advertising executive and film-maker in Los Angeles, a transportation policy institute director in Cochin (India), and a group of entrepreneurs in Cape Town South Africa.

Who should be at the table for the first meeting?

The very first meeting generally works best when it involves a small group of key people representative of a range of roles and sectors who are keen to make something happen, and who have a predisposition to "thinking in systems". From the beginning it is very important to include but also to go beyond the "usual suspects" (city planners and transportation planners) and to involve innovators, entrepreneurs, big business, NGO's and researchers (See page 17 for a listing of suggested sectors to involve). Until now "urban" transportation, in particular transit, has been regarded predominantly as a public sector concern. As a result, the substantial responsibility falls on urban and transportation planners to frame the challenges, identify the solutions, and assign or contract the implementation of those solutions. In this context there is very little space for the kinds of innovation and best practices that the private sector, NGO's, and researchers can bring to the table.


STEP ONE: CONVENING (Continued)

The Crucial and Often Under-Rated First Step

Some Helpful Hints:

Make Space for Public-Private Innovation.

SMART has created the term "public private innovation" to describe the approach of involving a range of different sectors in collaborative solution-building from the outset. The process involves collaboratively describing and defining the needs, goals, visions, and challenges, and then setting a framework to develop the solutions. This is distinct from but complementary to the more formalized and generally later stage "public private partnerships" which entrench specific partnerships to develop components of the overall system.

Start the conversation with the Vision, the Hope, and the Solutions -- Not the Problem.

Because transportation is so complex and multi-faceted, meetings related to it can quickly begin to focus on the problem and stay focused there for most of the meeting or even most of many meetings, sometimes years! This leaves very little time and energy for solution development.

The SMART approach has generally involved starting out with some simple goals that involve working together on connectivity, accessibility, livability, and economic opportunities. Both the framework and the goals need to be customized to the community and its context. The main "rules of the game" are to focus on connecting the dots. From there, the work can begin to improve, enhance, innovate, and build on what is already there, to fill needed gaps, and to generate exciting innovations that emerge by looking at the "whole picture" together.

Initial meetings (usually a few hours or a day long) will often begin with a check-in where each member will say who they are, and what they are PROUD OF or HOPEFUL ABOUT related to transportation in their community or region This is starting with a tone of vision and hope. It should be emphasized that this approach is not an expression of denial or avoidance of the many deep and complex problems of transportation, but rather it places the emphasis immediately on solution building and action, recognizing the importance of each representative around the table in contributing to the development and implementation of those solutions. Building on existing strengths and hopeful signs, discussion begins by linking the positive aspects based on what is already there, making the whole better than the sum of the parts. THEN the challenges and gaps can be more positively addressed.

Initial meetings also usually involve a presentation of the basic context and opportunity of connected urban transportation (usually drawing on principles and images from this white paper), so that all are on a similar page when they come to the active solution development part of the meeting or the process.

STEP ONE: CONVENING (Continued)

The Crucial and Often Under-Rated First Step

Invitation List.

The following list suggests categories of participants who are important to include in both the first and second meeting. In addition, there will often be very special people who may not fit in any of these categories but who should be included because of their systems approach, their influence on or contribution to the context, their special skills and connections, or all of the above. It's very important to start with the mix first rather than starting with the traditional government leads and then adding others later. It can also be helpful at least to start with participants who are positive and committed to the process. Critics are very very important but they can come later after the creative process has been nurtured.

BUSINESS

- entrepreneurs (especially related to IT, new services, new modes or products) (NOTE: the entrepreneurs usually bring a special positive and motivating action-focused attitude to the table and to the timeline which is what makes it important to have them there from the beginning)
- big business – IT, telematics, manufacturing, energy, utilities, real estate, planning & architecture, tourism, logistics and whatever might be relevant in your context
- venture capitalists or other financiers (often though financiers are invited to later meetings)

GOVERNMENT

- representing areas including but also beyond the "usual suspects" (planning and infrastructure) including: telecommunications, innovation, economic development and employment, finance, environment and energy, tourism, housing, social services, agriculture, and whatever might be relevant in your specific context

NGO's AND CIVIL SOCIETY

- representing sustainability, accessibility, transportation, environment, energy, social services, human rights, specific populations, and whatever might be relevant in your specific context.

ACADEME

- research leads and students interested in systems, applied research, new technologies, new social development patterns, transportation, land use, new business models, values and culture, social equity and sustainability, global trends and demographics, emerging markets, economic conversion, labour and employment, innovation, and whatever else is relevant to your particular context. The key is that the research and student involvement focuses on developing and applying the solution rather than stopping at analysis of the problems and the contexts.

CITIZENS

- depending on the particular context, selected citizen involvement can vastly enrich the development of hub networks by bringing the localized needs and the experience-based innovation that often comes from people who know their own community deeply.

STEP TWO: MAPPING

An Engaging and Tangible Catalyst for Action

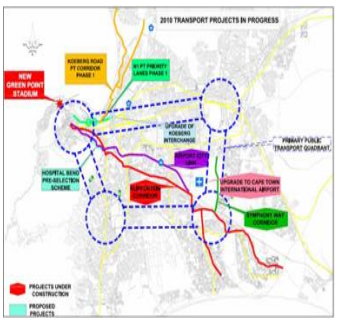
Step two often exponentially advances the cross-sector connectivity dialogue that began in step one. SMART has found there is nothing quite like the birdseye view that a large, table-sized, partially "pre-loaded" map of the community or region can provide, and the engaged interaction that brightly coloured magic markers, tracing paper, and post-it notes can enable.

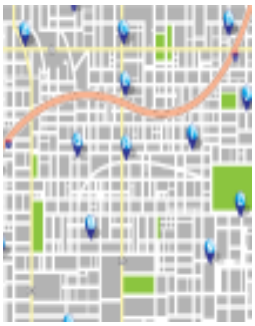
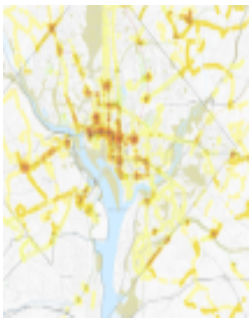
Here's how it works:

As many existing transportation systems , services, corridors, amenities and densities as possible are pre-mapped and overlayed on a large table-sized map to identify already existing points of intersection, or hubs, that, taken together, make up the existing regional New Mobility grid. What often emerges from this pre-mapping is an actual multi-mode, multi-service grid that even the transportation professionals and operators didn't know existed. This is the grid that provides the basis for seamless, door-to-door mobility and accessibility for the user region-wide.

The scope and scale of the mapping can be customized according to scope and scale. Sometimes it makes sense to start region wide to get a big picture and then later focus in on specific pilot areas. Other times it makes sense to start with a specific area so as not to be overwhelmed, and then move out to the regional scale to identify the connections of the pilot area to the function of the entire region.

The mapping process has on occasion had a transformative affect, first (and very importantly) by bringing a diverse group of mappers to the table – city leaders, businesses, politicians, entrepreneurs, developers, transportation practitioners, NGO's and academics. In SMART's experience the participants suggested on the invitation list have very often not even met each other, let alone mapped together, even though they may have many common goals. This usually relates back to the busy pace of life keeping people in their own silos, combined with the absence of the "link tank" role in most cities to fill a mandate that no one department, company, or organization has.




STEP TWO: MAPPING (Continued)

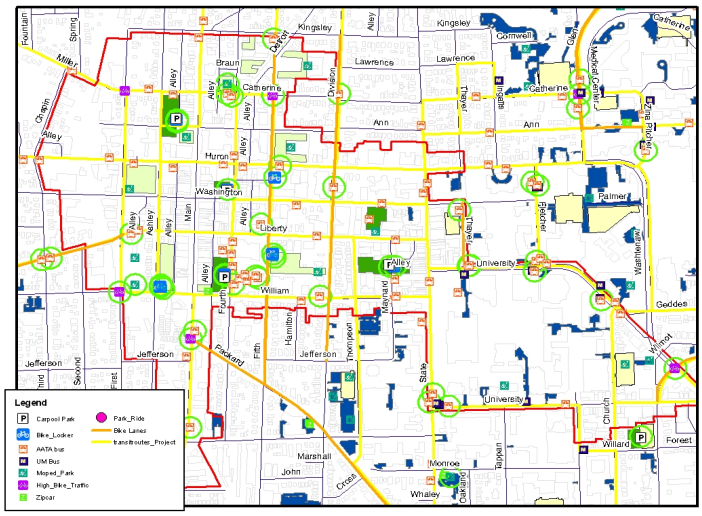
An Engaging and Tangible Catalyst for Action

With the help of brightly coloured markers and postitnotes on a big collaborative canvas, the process offers a big picture regional view as well as local level zoned-in views of transportation and land use connectivity. In this way it quite quickly identifies the system that is already there (even if no one, not even transportation professionals knew about it). It also fairly quickly highlights gaps in services, amenities, locations, and populations served.

Occasionally the process shifts paradigms altogether, bringing people from a single mode to a multi-mode, multi-service, accessibility-focused reality. Other times it sparks new ideas for businesses and innovations that can serve the needs of connectivity. In our experience so far, this is a hands-on catalyst or accelerator, not only for discussion, but to concretely engender new partnerships, pilots, and solution-focused research.

The process can take 3 hours or a whole day. The more time you can devote to it the better, and the more "pre-loading" preparation you can do, the better. This pre-loading process usually needs to start well before the first meeting (sometimes weeks) because contacting data sources and merging them when they are often based on varying software can be more time consuming than anticipated. On the other hand, try not to obsess about creating a perfect map for the first meeting never delay the mapping process in order to get the perfect map. Whatever is missing can be drawn at the meeting with markers by people who know particular areas or functions well. People like to have things to add, and perfection makes the gods angry. This collaborative process to fill in the map reinforces the benefits of many brains and knowledge bases around the table.

The main thing overall is to start small, bring positive, innovative, diverse systems thinkers and influencers to the table, and then following the meeting, keep the cadence of meetings and communication going with meeting notes, materials, and web supports. The nature of a link tank is that it needs to stay linked. Though this seems obvious it is sometimes forgotten.



STEP THREE: PILOT AND ROLL-OUT

The pilot phase can take many forms. Usually it involves identifying the pilot focus and the geographical area or corridor that will most likely show success quickly, and provide a hologram framework for the rest of the community or region. The factors involved in deciding on what and where to pilot can include:

- existing conditions (i.e an already established foundation of modes, services, and amenities to connect)
- the existence of champions (political and operational) for a particular area or community
- particular need in an area or community (though need is sadly not always the factor that most determines immediacy of implementation)
- profile and cue-giving potential of a particular community.

STEP FOUR: MOVING MINDS: Telling the New Story

Speak a new language so that the world will be a new world - Rumi

New Mobility can substantially support and shape urban revitalization and significantly improve quality of life and environment in cities around the world. At the same time, it can open up a wealth of business and employment opportunities—locally and globally. But this evolution is not without obstacles. Increased motorization and the high social status it represents in developing countries, along with seemingly unstoppable urban sprawl in the West, are challenges that need to be tackled on psychological and cultural as well as infrastructural and economic levels.

Progress toward a positive, integrated, and sustainable future for urban transportation will require more than moving people and goods. It will also involve the complex task of moving hearts and minds.

At the same, there are new societal trends that support the new approach, including

- social networking
- a greater service orientation leading to increased "fractional use" such as, car sharing and bike sharing
- a"plug and play" portfolio approach to day to day technologies

All of these trends bode well for the psychological success of integrated multi-modal IT enhanced transportation portfolios. In fact recent studies show interest in early car ownership dropping in some areas because it interferes with texting!

STEP FOUR: MOVING MINDS: Telling the New Story (Continued)

Hub network development provides a unique opportunity to learn about the cultural, psychological, and aspirational underpinnings of our relationships to our transportation choices. It also reveals ways to respond with innovative approaches, marketing, policies, and business models that recognizes and address these dimensions more sustainability, equitably, and compellingly. Both the development and implementation of New Mobility hub networks (integrated infrastructure in general) offer opportunities to move the minds and behaviour of both decision makers and transportation users, in a number of ways:

Through the concept itself:

A grid of many connected choices and a sophisticated multi-faceted personal portfolio is a paradigm-shifting way of looking at transportation choices for both decision makers and end users

Through the process of mapping:

By bringing decision makers and innovators together across disciplines and sectors, the mapping process starts right from the beginning to tell a new story based on the inclusion of a full range of options and priorities

Through research:

Each component mode has psychological and value associations that can be examined and included in the development of solutions that will as a whole meet new needs in a more sustainable way. Academic research and corporate focus group work can support this understanding

Through language:

Our language reflects clearly how we see transportation – words like “alternative” transportation paint a future picture in which sustainable transportation will always be secondary to mainstream. Planning words like “captive” and “transportation disadvantaged” communicate a certain negativity associated with non-private car based transportation. Even terms like “transportation demand management” communicate a message of constraint related to the future of transportation. If we are to move minds we will need to move our language and our stories to reflect the very exciting, and hip compelling future that is in store with the emergence of more transportation options, and more customized, IT enhanced portfolios that allow us to use the best mode for the purpose seamlessly. And, most of all,, that confer “next generation” status and freedom. It is even more effective if public figures and celebrities speak this language and walk this talk.

Through marketing:

As a new integrated infrastructure evolves and as increased understanding of psychological and cultural underpinnings emerges, more targeted, customized, and effective story telling and marketing can be developed through a range of media beyond traditional advertising, including social networking, new media, special events, and user group-focused communications.

NEW KINDS OF LEADERSHIP

Ushering in the next generation of transportation infrastructure (sophisticated, sustainable, integrated multi-faceted systems with accessibility as the goal) will require new kinds of leadership in the private sector, the public sector, academe, and civil society.

Traditionally governance (and therefore innovation) of urban transportation has fallen predominantly to the public sector, in particular planners and infrastructure engineers. But as the world urbanizes, as economic, environmental, and space constraints render current approaches less tenable, and as new and innovative technologies and services emerge, livability, economic competitiveness, and even survival depend more on how resilient a system is. A resilient system combines strength, safety, and reliability with nimbleness, dynamism, and flexibility. As such the most effective transportation leaders are both demonstrating and demanding resilience and dynamism in planning and practice.

Business.

While innovators and entrepreneurs have been breaking ground in the New Mobility space for well over a decade now, only recently have major multinational corporations begun to conceive of convincing business models related to the now rapidly growing urban transportation / New Mobility market. Ford Motor Company's commitment to the Megacity Mobility initiative, Cisco Systems' Connected Urban Development program, IBM's SMART cities initiative, Ashok Leyland's work on IT-enhanced mobility products are just a few indicators of the significant global market that is presenting itself. They are also indicators of the urgent need to solve serious and growing transportation challenges if businesses and regions are to remain productive. In an urbanizing world.

As such within the urban sphere, business leaders are moving beyond responding to RFP's issued by city leaders, and into the public-private innovation realm. There they can be involved early on in the process, collaborating not only in developing the solutions but in describing the challenge. In this context they can transform products, services, technologies and markets into solutions that will supply the emerging New Mobility market and meet human and societal goals at the same time.

In partnership, business can innovate and commercialize new and more sustainable ways to move people, move goods, and move less. Based on their long standing market research expertise, they can develop solutions that meet psychological and cultural as well as practical needs related to transportation, and they can craft new stories and apply new approaches to marketing New Mobility culture, shaping both demand and policy. Finally they can work together across diverse industry sectors to grow a multi-sectoral New Mobility industry that meets both social and business goals locally and globally.

NEW KINDS OF LEADERSHIP (Continued)

Government

Though emerging urban and transportation trends pose increasingly complex challenges, they also shape new and interesting roles for federal, state, and local government. Moving past legislation and policy making, progressive city leaders and government agencies have begun to expand their scope beyond transportation, land use and infrastructure to include a wider range of public sector players not traditionally linked with transportation. These players represent housing, environment, telecommunications, innovation, economic development and employment, social services, energy, tourism, agriculture, finance, and more. Meanwhile new policies and funding initiatives are beginning to demand integrated approaches and optimization of resources and systems that transcend silos. Many government representatives have also expanded their roles to that of convenor or "link tank" across sectors to ensure that a full range of key players is involved, and that plans and budgets are optimized, inclusive, and cost-effective. They are also working with all sectors to find ways to provide incentives and remove barriers to New Mobility innovation. Finally, some are working to support and facilitate relevant research, data sharing, promotion, and training to accelerate implementation of integrated sustainable transportation.

Academe / Research

New Mobility research – both academic and corporate -- is moving increasingly in the direction of direct "living laboratory" work with transportation leaders and practitioners, where real challenges and opportunities in specific city regions can inform the kind of knowledge and conceptual frameworks developed, and can support both specific local solutions and more general principles common to more than one region. Listening to local experience and undertaking solution-focused, user focused, integrative research requires asking new questions and finding new kinds of data and approaches and languages related to urban transportation. It also involves work with a range of disciplines and sectors and academic institutions – all the disciplines and sectors and institutions related to the increasingly complex field of transportation. And finally this involves developing new opportunities for the next generation of transportation thought leaders through systems-focused education and capacity building. For more information on future research directions related to New Mobility, see SMART' s Future Research Directions report: http://www.um-smart.org/project_research/research.php)-

NGO's / Civil Society

A considerably more collaborative, positive set of relationships and working partnerships across all sectors, including business, has evolved amongst NGO's and civil society agencies focused on transportation related issues. In many cases NGO's are leading the charge in providing the link tanks needed to tackle this complex challenge.

LIVING LESSONS, SHINING EXAMPLES

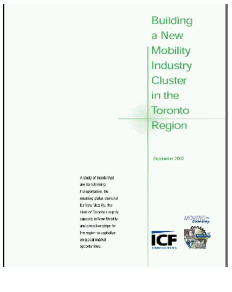
A Brief History

The idea of New Mobility Hub Networks began with Michael Glotz-Richter in Bremen, Germany in the mid 1990's. Across the city of Bremen, "Mobil Puncts" were established, where transit, taxi services, and bicycle amenities were connected with the new car share service network they had been developing (Cambio). They then linked this all together with a multi-modal fare card and called it the "Egg Laying Wool Milk Sow" which signifies something that brings together many unlike elements in a positive way. Finally they established multi-modal way-finding through electronic kiosks.

Around that time in the mid 90's, the City of Toronto Moving the Economy (MTE) initiative was seeking examples of cities that had successfully integrated transportation modes and services and technologies door-to-door with the user in mind. Eric Britton of EcoPlan in Paris led them to Michael Glotz Richter. Inspired and impressed, Moving the Economy began to identify opportunities to adapt and pilot "mobil puncts", which got translated into "New Mobility Hub Networks" for application in Toronto.

The Hub Network approach has since become a well resourced priority of the first official strategy of Toronto's new Regional Transportation Authority. Another Moving the Economy innovation established as a priority within Toronto's new regional plan is Sustainable Transportation (or New Mobility) industry cluster development. This regional government support for New Mobility business development, innovation, economic development, and related job creation built on MTE's early work in this area summarized in the 2002 MTE / ICF report "Building a New Mobility Industry Cluster in the Toronto Region". This was the first report to look at the emerging New Mobility industry cluster and related innovation and job opportunities as a whole.

Meanwhile, as the 21st century dawned, the early seeds of SMART were being sewn at the University of Michigan when leaders from a number of different departments and institutes, as well as Ford Motor Company, saw the need to understand and address transportation from a complex systems perspective. After two successful conferences on the topic of transportation, accessibility, and complex systems, founding SMART leaders contacted Sue Zielinski, co-founder and Director of Toronto's Moving the Economy initiative, and invited her to Michigan to further develop and propel SMART.



LIVING LESSONS

New Mobility Hub Networks Go Global

SMART's first order of business on Sue's arrival in 2006 was focused strategic planning – establishing the priority to advance sustainable transportation solutions for global urban regions in response to growing challenges in an urbanizing world. It was decided that SMART would take a systems approach to both analysis and solution building, and would have accessibility, not simply mobility as the overarching goal. David Berdish of Ford Motor Company, a member and sponsor of SMART, was also interested in understanding the new opportunities, markets, and business models for supplying integrated, sustainable, equitable transportation in this new context. And finally there was interest in understanding the social and psychological underpinnings of our relationship to our transportation choices, and how we can develop and market new innovations and approaches that address them more sustainably.

Research Based on Living Examples

As soon as SMART declared its priorities, the invitations to visit (and help) challenged regions began to flow in. This was the origin of another rather unique and unanticipated approach to SMART's work. Academic institutions generally start with research, then involve students, and THEN test the research on the ground. SMART has taken quite the opposite approach, starting by learning from and collaborating with local city leaders, transportation professionals, and businesses. SMART and partners then work together to establish frameworks (both practical and conceptual) that will accelerate customized and more general solution building and implementation.

Starting with an initial invitation to Bangalore, India, SMART has not looked back, learning deeply from partners and innovators in all corners of the world through "living laboratories", collaboratively developing and adapting conceptual frameworks to meet local needs in an integrated way, and establishing pilots and research to advance implementation city project leaders and practitioners to accelerate shared learning across all the projects. The following pages profile selected experiences from these diverse and rich collaborations in an abridged format. Note that both the full primer (to be released autumn 2010) and the related web tools will provide much greater detail on these cases than what was possible in within this white paper.

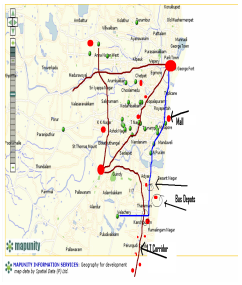
LIVING LESSONS, SHINING EXAMPLES: INDIA

SMART's first collaborative exploration of New Mobility hub networks was in Bangalore, India, in response to urban based challenges of both rapid economic growth and increasing social disparity. This work was led by City Connect, a partnership of the Confederation of Indian Industry and Janaagraha (a very effective India-wide NGO). Since identifying New Mobility hub networks as a useful approach in January 2007, a great deal has moved and new cities continue to sign on. What started in Bangalore has been taken up in Chennai, then Cochin, and now Mumbai. Exploration is also beginning to happen in Delhi. Each city has a different focus – Bangalore is linking a range of options to its new Metro system and the airport, Cochin is launching a major multi-modal mega-hub (including boats and auto-rickshaws) that will eventually connect to a comprehensive grid, and Mumbai has a special emphasis on pedestrianization to address issues of access and equity. The following case highlights the experience of Chennai.

New Mobility Leadership in Chennai

This is one of the first New Mobility Hub Networks of its kind in India and has generated a great deal of excitement among the public and officials. In an area of 1 KM radius the idea was to design mobility hubs so that pedestrians have to walk only 300 meters to access one or more modes of transportation. This will reduce the hardship on pedestrians, especially in a tropical country like India, while ensuring that both private and public modes of travel are integrated into the plan. Some of the components of the plan are park and ride facilities, shuttle and feeder systems, train, bus and private vehicle. Later we applied this template to analyze an area-wide redevelopment project with pedestrianisation at its core.The city's capability to provide good transportation infrastructure, private and public, is a challenge. As Indian society grows more prosperous the number of private vehicles has increased. Since the quality of service of public transportation is poor, more and more people switch to private modes. This has caused congestion and related problems all across the city. Whatsmore all direct and indirect transportation related agencies and departments work in silos. So the ability to make grand, comprehensive city-wide plans and to co-ordinate and deliver world class systems is weak. We cannot wait for decades to build the capacity of the system and then deliver quality transportation, so for this and various other reasons, we find the New Mobility Hub Network approach appealing. It helps us focus on parts of the system, analyze it, create quick designs and work towards implementation. Also each such piece adds to the whole without jeopardizing it.

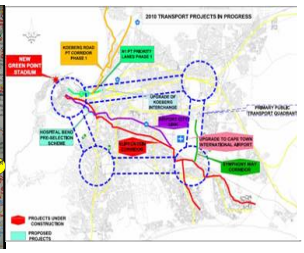
Initially this was just an interesting concept… But one of the main discoveries we've made is that using the New Mobility Hub Network vocabulary in discussion on transportation helps change the framework of the discussion. This helps move the discussion away from mega citywide projects that don't go anywhere to projects that are easy to imagine, communicate and move forward. If I were to offer advice to other cities embarking on this work, I would say start piloting and create some visible changes to inspire the city to do more. Taking up too big projects would frustrate the same way as traditional projects do. **Author: Raj Cherubal**

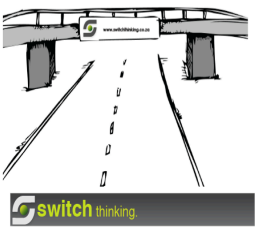



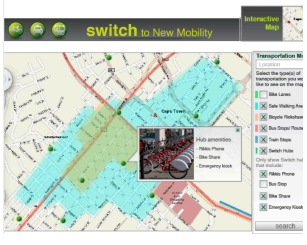
LIVING LESSONS, SHINING EXAMPLES: CAPE TOWN SOUTH AFRICA

Transport planning and practice in South Africa has done little to enable people to become full citizens of our country, and access the economic and social opportunities available to us since 1994. Poor households spend between 20 and 30% of their household incomes on trying to get from A to B. Mobility is central to our human rights, as well as access to economic opportunities, health care and education, friends and family, goods and services. Our mobility is still impaired by spatial segregation, under-investment in infrastructure and public transport, and the assumption that we are all current or future car-drivers. Many resources are inaccessible to the people who need them most. Our public transport remains either non-existent; or dangerous, inaccessible, unaffordable, unpleasant, slow and unreliable, expensive, over-crowded and generally poor quality. In addition, rapid urbanization and growth in the size of the middle-class has seen more private cars on the roads, with associated declining air quality and increased congestion. Surprisingly for a country with so many people without private cars, our pedestrian infrastructure is appalling, with pedestrians making up more than 40% of deaths on our roads.New Mobility Hub Networks represent one of the few examples of a systems approach to transport solutions. It is an innovative response to the challenges we face and plays the important role of integrating various systems – physically and electronically – to connect the dots - an important role not often carried out by anyone as it is not usually the responsibility of any particular organization. For the person who can afford to use a car – it is sexier and cool, and thus doesn't seem like a step down from the status of a car.

The New Mobility Alliance for Cape Town was launched in early 2007 by the Cambridge Programme for Sustainability Leadership (CPSL) in partnership with UMICH/SMART. The main motivation behind launching the initiative in Cape Town was related to major investment in public transport in South Africa in preparation for the FIFA World Cup in 2010. Since its inception we have held a number of NMA meetings, including workshops to map hub networks and develop projects. The New Mobility Alliance includes over 250 members – a mixture of individuals and organizations from relevant businesses, NGOs, and government departments, as well as a number of entrepreneurs and advisors. Recent economic constraints and some political delays have challenged the NMA though enough critical mass was generated in the first years to keep key stakeholders in regular dialogue. This has allowed for the continued honing of our operational models. We are focusing on financing working capital as well as better pricing the business case (in-depth feasibility study). Meanwhile our role has become clearer, more important and in greater demand. We want to be moving people using our pilot New Mobility initiative by the beginning of 2011. This will take 6-8 months of work to get operational, with sufficient working capital. If all goes according to plan, Cape Town will be a shining example of NM for the world and particularly the developing world.The development of the Switch website, involving students from a local advertising school, students from UMich, Sue Zielinski and local project managers, was a great initiative. We aim for it to be up and running in the near future: http://www.isr.umich.edu/smart/nma/. **Authors Claire Janisch, Gail Jennings, Andrew Russell**







LIVING LESSONS, SHINING EXAMPLES: BRAZIL

One of the main barriers of transportation and accessibility in an urbanizing world is that in many countries institutions are incapable of treating the problems as a set because of a systematic separation of bureaucratic realms; this is also the case of Brazil. Solutions have been proposed, but focus on traditional scientific and engineering tool boxes have prevented this questioning from being effectively addressed. For example, alternative fuels alone, while focused on environmental concerns, do so in the narrow sense of fuel-based transportation. They do not address land-use and sprawl, health, infrastructure supply, or safety implications. The key questions that motivate our work on sustainable, integrated transportation are:

- How can transport policies encourage spatial and social integration in cities?
- What are the geographical and cultural problems to be met by transport models?
- Have urban planners and government simplified the idea of transport thus creating general options for differentiated realities?
- How can the complex community's problem-solving abilities to be honed-in into public policies to generate innovative and collective responses to transportation problems?

Our interest in New Mobility relates to the fact that the Brazilian model for transport networks needs to be based more on the implementation of local models for mobility, considering the needs of the populations the planners are planning for. Local solutions and its creativity and innovation need a proper discussion forum to be heard and analyzed for a proper understanding of the space, the accessibility and the social integration. We can see that immobility is the natural outcome of localities which have built transport systems without planning, or which have planned focused on individual and motorized transportation, or which have to obey main national policies without resonating with peculiar situations.

To take just one illustrative example (there are many), there are few alternatives and mobility structures which consider the reality of the Amazon region. The biome, culture, history and economic reality are not effectively considered by national policy makers. For example, in Manaquiri, there is a lack of ground-based transportation, so water, or "liquid streets" is the most viable and predominant transportation infrastructure. While this works well in the rainy season, low water in the dry season can prevent travel or can strand and damage boats, preventing access to school, work, and other basic needs. And because the nationally mandated school vacation period is during the rainy season, the result is very little time in school per year. With the continental dimension of Brazil, distances and mobility are not alike in the different regions. Integration of urban and rural complexities, production flows, and every-day mobility need to be thought about in all their complexities and particularities. New Mobility offers a framework and a methodology for addressing this need by customizing and optimizing and innovating cost-effective solutions to local needs. We look forward to moving forward with this framework. **Authors: Andreza Aruska de Souza, Augusto Mathias, Sergio Sady-Musskopf. Collaborators: Faridah Matos, Mauricio Zanin**

Fonte: Secretaria Municipal de Educação

Fonte Secretaria Municipal de Educação

www.brasilocal/amazonas/manaus/manaquiri.html

Fonte: Arquivos da Secretária Municipal de Educação

LIVING LESSONS, SHINING EXAMPLES: U.S. & CENTRAL AMERICA

Hub Network interest in the US has picked up significantly of late, in part inspired by similar work elsewhere and in part propelled by new dialogue and policy on sustainable transportation in the US. Interestingly some US cities that have very well established and diverse transportation systems (e.g. DC, Portland, Seattle) are interested because despite the many high quality options that are available in their cities, they are still not connected seamlessly door-to-door. The same is true of Mexico City where interest has also recently sparked. All the recent activity in the US and Central America cannot be detailed within this short discussion document. Though more will appear on SMART's website over time. Meanwhile, here is a quick but not exhaustive summary:

Atlanta and Washington DC: Georgia Tech launched the first US based New Mobility hub network project. They have been working on a pilot that serves the university, and some cutting edge way-finding and traffic management technology. Washington DC was also an early adopter with meetings and mapping, and is currently implementing physical and IT pilots as well as some focused research.

Detroit. Region. Though one of the most spread out and highly fragmented regions in the US, progress has been made in Southeast Michigan of late since the approval of the M-1 rail project, the establishment of a Regional Transportation Authority for 3 counties, and the development of the Connect and Prosper initiative which provides a forum for collaborative New Mobility implementation. Ann Arbor, which already has an extensive mix of sustainable transportation options, has made also made some very good integration progress.

Los Angeles region: A rich variety of New Mobility work is happening across the Los Angeles region including and linking the development of LA County working groups, the City of LA integrated mobility pilot, the Community Colleges job access project, Santa Monica's and Padadena's TDM, all working with a range of focused initiatives and associations, NGO's and entrepreneurs. The City of Pasadena is working on a new comprehensive framework that integrates mobility, information, and economic growth and by connecting these three ideas, and hopes to be a key mover towards a new era of sustainability, mobility, information, and economic growth in the LA region..

Seattle. One of the first in the United States, Seattle's New Mobility Hub network uses clean energy electric vehicle-to-grid technology Washington State will extend this scalable New Mobility network throughout its urban areas. NewMobility Hubs will help meet national greenhouse gas reduction goals, create green jobs, and advance energy independence. The network offers greener commute options and expands the use of electric vehicles in the Puget Sound region.

Portland, Honolulu, and Mexco City: Portland and Honolulu have just begun exploring New Mobility hub network options, Portland with the goal of improving seamlessness of its already top notch system, and Honolulu in response to increased tourism congestion and environmental concerns. Mexico City has already developed extensive "mega-hubs" but is looking to develop a more extensive grid to support and enhance them.

Caption

Caption

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The following people generously contributed to this white paper, by leading the challenging and inspiring projects on which it is based, or by being involved in the writing and production, or both.

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NOTE: This list is not exhaustive. Apologies for ommissions.

WITH SINCERE THANKS

Since 2005, Ford Motor Company has been a profoundly committed partner and sponsor in developing and advancing the SMART New Mobility city projects, and SMART's directions generally. More recently, the FIA Foundation has come forward to support the development of a Primer that will accelerate implementation of existing and new city projects. Both this white paper and the primer are made possible by the generous support of the FIA Foundation and Ford Motor Company and for this SMART expresses deep thanks. Even more recently, the Confederation of Municipalities of Brazil (CNM International) has joined the effort by translating it into Portugese.

The FIA Foundation is an independent UK-based Charity which specializes in issues around safe and sustainable mobility. We are engaged on a wide range of issues from the promotion of greater fuel economy in cars, to the development of safer and more sustainable roads, amongst much more – please visit our website www.fiafoundation.org for more information. We are really excited to be engaged in the important work which SMART is undertaking across the globe, and in particular to be supporting the exchange of good practice across the SMART network and beyond through the development of an interactive SMART primer. This project, by providing a tool to implement integrated, multi-modal, sustainable mobility and accessibility (New Mobility) in cities, specifically meets the FIA Foundation's goals of disseminating the results of research and providing information in a matter of public interest, in particular protection and preservation of public health, transportation and public mobility, and the protection of the environment. **Sheila Watson, The FIA Foundation**

Ford Motor Company. Our world is changing. Population growth, urbanization, congestion, increased energy use and socioeconomic disparity are influencing behaviors and regulations like anti-congestion policies, increased use of public transportation, and strategies to reduce VMT. But we welcome the change. And through our ongoing collaboration with University of Michigan Sustainable Mobility and Accessibility Research Transformation we have been able to integrate mobility solutions necessary to address these signals. Because of Sue Zielinski and her team, Ford is leading—not following. The team at SMART and the wonderful community of mobility thought leaders can help determine the rules and dynamics of a new and growing market segment and innovate to address global problems. SMART provides thoughtful approaches to help understand environmental impact, ways to lower green house gas emissions, reduce vehicle miles traveled, and make a positive impact on the social side of sustainability. The ideas generated by the SMART community will improve safety and quality of life throughout world; increase credibility, knowledge, and perspective; influence policy that will shape future mobility and close the "mobility divide." Please join me and other passionate people in collaborating with SMART. When you work with Sue, SMART and the rest of our community, you will be amazed by the opportunities for proactive engagement and partnership with a wide range of influential and innovative stakeholders and entrepreneurs. **David Berdish, Ford Motor Company**

The National Confederation of Municipalities of Brazil (CNM) is responsible for promoting Brazilian municipalities internationally. Launched in November 2006, it is a representation that is gaining ground through CNM's role to mobilize delegations of mayors and municipal specialists to participate in congresses and international missions at which Brazilian models will be presented and lessons will be learnt with visions from throughout the world. Municipalities and municipal associations can therefore count on support from CNM in priority areas in sending their projects for analysis. For affiliated municipalities, CNM also offers technical advice in obtaining international resources, in addition to the logistic support needed. The opposite is also occurring so as to identify projects and international cooperation programs.

THIS IS A DISCUSSION DOCUMENT:

Please send comments and suggestions to:
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