

**UNANSWERED QUESTIONS:
DEVELOPING A NATIONAL TRANSPORTATION STRATEGY**

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INTRODUCTION

Here are some questions that we need to think about as we confront the task of overhauling America's surface transportation system.

- *What should the transportation system look like in the future?*
- *What options do we have for transforming the system to match this vision?*
- *What resources are available to carry out these options?*

In the largest sense, these are **Strategic** questions because they necessarily drive the tactical programs that we develop to transform the nation's transportation system into what it should be. But for the most part, these critical Strategic questions still remain unanswered, mainly because we have yet to ask them in a properly serious way.

Strategy is a thousand dollar word with multiple meanings that can lead to all kinds of confusion. So let's be clear and stipulate right off the bat that having a Strategy means knowing **what** we're trying to accomplish, **how** we can accomplish it, and **what resources** we need to accomplish it.

Right now, we probably have the surface transportation network that we deserve - especially in view of our decades-long inability to maintain it adequately and invest in it properly. But there is a nagging sense that we don't have the transportation network the nation really needs in order to support a decent level of economic growth. This means that the tactical programs we may

have (either in practice or on shelves full of elaborate studies) lack essential soundness.

Therefore, whatever funding gaps we think exist for carrying out these tactical programs are speculative at best. How can they be otherwise when we have not yet developed a sound Strategy for turning the transportation system into what the nation needs? So we have to stop trying to put the cart before the horse.

In other words, we should stop concentrating on **Form** and start focusing more on **Content**.

Form is concerned with how we do things. It concerns such questions as:

- ***Should we lease existing state-owned toll highways to the private sector and use the upfront cash we receive to fund construction of road and rail projects that have been sitting on the shelf due to lack of funds?***
- ***Should we implement roadway pricing on key links of state-owned highway systems in order to make them self-supporting enterprises and thereby assure adequate funds for their on-going maintenance, capital reconstruction, and expansion?***
- ***Should we enter into partnerships with private firms to build and operate new road and rail projects on a self-supporting basis?***

- *Should we try to leverage future federal grants by converting them into an income stream to pay debt service on municipal bonds that we issue today in order to fund capital construction on new road and rail projects?*
- *Should we use federal grant funds to capitalize state Infrastructure Banks that make revolving loans to transportation projects?*
- *Should we establish objective, enforceable performance standards against which transportation providers can be held accountable – just as EPA has done for air quality?*

These are all reasonable questions. But they are meaningless until we know **what** we're trying to accomplish with transportation. This is the **Content** issue, and we must deal with it before we can address the issue of **Form**.

So we should begin by answering four strategic questions:

- *What is the main purpose of surface transportation systems?*
- *What resources are available to make these systems better?*
- *How can we best use these resources?*
- *How do we measure our success in making transportation systems better?*

These strategic questions have remained unanswered far too long – mainly because those of us in the transportation community rarely ask them in thoughtful ways. And it is time that we started doing so.

My name may not be Elijah, but I would like to outline some of the thinking that may help us frame these questions in ways that can generate meaningful answers.

WHAT IS THE PURPOSE OF TRANSPORTATION?

The answer to this question should be obvious enough once we cut through the tangled underbrush of wooly-headed ideas that pass for Received Wisdom in many discussions of transportation. Stripped to its essentials:

The basic purpose of a transportation system is to support the nation's economy.

It is an unavoidable fact of life that economic activity generates demand for moving people and goods. The more economic activity we have, the greater is this demand. Therefore, the capacity of our roadway, freight rail, and public transit systems must be sufficient to accommodate this demand. Otherwise the level of economic activity in our society is inevitably going to be less than it could be, and we will be poorer as a result.

After all, a growing economy is what keeps America strong and prosperous. And effective transportation is one of the most important underpinnings for a growing economy.

This means that transportation is a **Derived Demand** rather than a **Direct Demand**. It is a natural consequence of our Direct Demand for higher incomes and greater economic security. That's why we don't find many Americans sitting around the kitchen table or in corporate board rooms discussing transportation as such. Or is it listed it as a major national issue in public opinion polls. Even though effective transportation is a silent prerequisite for achieving many of the goals that they do discuss, it lacks inherent sex appeal and is therefore easy to ignore. Just as AIDS was before celebrity tennis star Arthur Ashe publicly announced that he had contracted it from a blood transfusion.

This may help to explain the appeal of arguments by anti-transportation types who oppose as "self-defeating" many new transportation projects (especially roads) to address capacity shortfalls. At the core of their arguments is a concept that they like to call **Induced Demand**. This means that a new road or other transportation facility will simply encourage more people to make more trips until eventually its new capacity is saturated, leaving us right back where we started. Admittedly, we have seen this happen often enough in the real world so that the factual basis of Induced Demand is scarcely a matter of debate.

However the anti-transportation types seem to assume that the new trips generated by Induced Demand have no economic significance. They are simply idle joy riding, in other words. So these trips are nothing that we couldn't do without.

But the fact is that the overwhelming proportions of these new Induced Demand trips have considerable economic significance. People making these trips are doing so to buy or sell goods and services. To produce or consume in ways that were not previously possible.

In other words, these trips generate new economic activity that could not otherwise take place. Therefore the Induced Demand potential of building new capacity for moving people by road and rail means that such projects don't merely fill a passive role of accommodating existing economic activity. They can play an active role in stimulating new economic activity. As such, they become important tools for growing the economy.

Of course, not everyone regards economic growth as a good thing. Those who subscribe to a *Marie Antoinette* vision of society may find it inconveniently disruptive. Especially if it provides opportunities for the "Wrong Kind of People" to rise in the world, to realize their full human potential through hard work, to enjoy decent living standards, and to share in the economic and social benefits that were formerly monopolized by those who were born into the "Right Families".

The numbers of anti-transportation types may not be great in percentage terms. But their influence can be enormous. The lawyers among them have become experts at entangling new transportation projects in dense thickets of litigation that can drag on for years, until they have watered down the meaning of such projects into an exceedingly thin gruel. This is all part of their insistence on freezing in time an antiquated social status quo against the liberating power of anything that smacks of economic growth.

We can't blame all our transportation woes on these anti-transportation types. Especially when we've done so much to help them by failing to come up with sensible programs for assuring the kind of mobility that our nation requires.

At least part of the problem may be that we have yet to develop a coherent strategic vision of what an effective system for moving people and goods by road and rail should look like. And not just for today but for half a century hence.

Developing such a vision requires that we look forward into the future to identify the kind of services that transportation systems must provide. Then we can work backwards to flesh out the details of the specific needs that transportation must satisfy.

This involves two kinds of strategic-oriented activities.

- ***First: we must understand the EXTERNAL ENVIRONMENT within which transportation systems function, both now and in the future.*** The External Environment is what determines the demands that will be placed on transportation systems. Evolutionary changes in this environment will affect future transportation demands. So we must position ourselves ahead of the curve in order to understand how these demands may evolve. This means that our analysis of the External Environment should be an on-going function.
- ***Second: we must know the details of the needs that transportation customers are willing to pay good money to have satisfied.*** We do this by conducting the right kind of sophisticated

Market Research. Inevitably, customer perceptions of their needs change over time as they respond to changes in the External Environment. So Market Research must also be an on-going function.

ANALIZING THE EXTERNAL ENVIRONMENT

Back in 1956, Elia Kazan celebrated the tradition-bound world of intercontinental goods movement in his Oscar-winning film ***On The Waterfront***. But who could have imagined that this world was on the verge of becoming as obsolete as the Marlon Brando character's boxing career?

Yet 1956 was the year that an entrepreneurial trucking magnate named Malcom McLean first arranged to pack many individual crates of goods into large steel boxes that could quickly and efficiently be transferred by mechanical cranes between ocean-going ships and land-based trailer trucks. Quite a change from the age-old tradition of having large crews of dockworkers slowly move by hand individual crates from ships to trucks and vice versa.

This marked the birth of a goods movement technology that we now know as ***Containerization***. By slashing the costs of moving goods from one part of the world to another, it made possible the huge growth in trans-global trade around the world. So a person in Kansas City can now buy consumer goods mass-produced in China for a fraction of the price that his grandparents would have had to pay. And in the process, Containerization totally transformed the infrastructure and operations of the ocean shipping and port industries.

We should keep in mind that Containerization wasn't the brainchild of either the ocean shipping or the port industries. It was initially conceived and developed by a visionary **Outsider** who imposed it on these reluctant industries, who would have much preferred to keep on doing the same old things in the same old ways. In other words, it became part of the **External Environment** within which ocean shipping and port operations must function. So these classic industries had to learn how to understand its implications for their businesses. We must do the same thing when it comes to the External Environment within which surface transportation must function.

The key variables of the External Environment for surface transportation conveniently group themselves into four broad categories. These categories are **Economic Variables, Demographic Variables, Technological Variables,** and **Socio-Political Variables.**

Economic Variables

The most important of these variables are those involving trends in the growth of **Gross Domestic Product** (GDP) at the national level as well as at the state and local levels, and also within different industries. GDP is how we measure the level of economic activity, which is what creates the demand for moving people and goods.

Other Economic Variables include:

- **Inflation** (which, among other things, determines the level of Interest Rates and therefore the Cost of Capital).

- **Employment Levels** (in gross terms and as percentages of the total labor force).
- **Capital Formation** (by both the private and public sectors).
- The **Government Fiscal Picture** (federal, state, and local).

Demographic Variables

These variables concern People. Ultimately, it is People who produce GDP, who demand transportation of various kinds and in various quantities for various travel purposes, and who generate the financial resources to fund transportation systems. So we need to know:

- How many People will live in the United States at various points in the future?
- Where they are likely to live (by state, by local region within each state, and by multi-state regions like the East and West coasts).
- How many will live in single-person and multi-person households (with and without children).
- How old they will be (it's no secret that the rising proportion of Senior Citizens will impose new mobility needs that we never had to confront in the past).
- How large their incomes will be (which helps to define how much they can pay for transportation).
- How much education they will have (higher levels of education tend to make people more demanding and choosy about what they will pay for, and more willing to make use of new technologies).

In the arena of the Social Sciences, Demographics is capable of providing projections that tend to be closer to the Physical Sciences in terms of their precision and accuracy. So their projections are especially helpful in determining the shape of the future.

Technological Variables

Interestingly, the field of surface transportation is on the verge of becoming awash with new technology that may be just as transforming as Containerization was for ocean shipping and port operations.

We already have new technologies for collecting roadway tolls without slowing the speeds of motorists, for measuring the average speeds and densities of traffic flows on roadway lanes at any given moment, and for pinpointing the location of buses and other public transportation vehicles on their routes.

But just over the horizon are technologies that have the potential for making transportation much safer and more efficient by:

- Providing instant communications between roadway operators and motor vehicles concerning bottlenecks up ahead and alternate routes.
- Preventing traffic accidents from happening.
- Minimizing deaths, injuries, and collateral damage in accidents that can't be avoided.
- Monitoring the contents of goods movement containers moving by road, rail, and air without disrupting traffic flows.

But these new technologies can be as much curses as blessings unless we learn how to properly manage their transfers from the laboratory to the marketplace. So we need as much information as possible about what they are, how they work, what they can do, and the problems they pose. Also, let's not forget that the design and use of these technological innovations must be customer-driven rather than provider-driven.

Socio-Political Variables

Identifying and evaluating these variables may often seem like exercises in pure *Futurism*. But this doesn't mean that they should be regarded as idle speculations. Even when the results of their evaluations may seem to lack the scientific precision of Demographics, information about the forms and contents of these variables can be very important in helping us determine the future shape of the External Environment.

Special emphasis should be given to the potential impact of the following socio-political issues:

- Continued increases in global trade (which stimulates further competition among nations and requires that we regard American transportation systems as links in worldwide travel chains rather than as stand-alone entities circumscribed by national borders).
- Returning to the progressive tax policies of the high-growth Eisenhower era in the 1950s (where the proportion of a person's

income paid in taxes increased as the size of his income increased) vs. continuing the current trends towards a flat tax policy (which generally has the opposite effect).

- More open policies regarding Immigration (leading to a larger proportion of the American resident population being born abroad) vs. tighter policies (leading to a larger proportion of the resident population being native born).
- Increased concentration of the American population on the East and West coasts, accompanied by pervasive depopulation in many areas between these coasts.
- Growing political clout among increasingly numerous Senior Citizens who will insist that American society provide them with comfortable retirements, special treatment of their particular needs, and meaningful protections of their purchasing power after their working days are over.
- Continued decline in the willingness and ability of Corporate America to provide its current and retired employees with the kind of social welfare services traditionally provided by government in Europe and elsewhere.
- Further replacement of traditional mass markets for goods and services by niche markets as consumer demand becomes more sophisticated and industry responds by “customizing” its production methods.

- People being willing to “cram more living into each day” by making use of timesaving technologies like cell phones and the Internet.
- Increasing ethnic, income, and educational diversity in workplaces and markets.
- Single person and no-children households becoming the dominant household types.
- Rising concern for environmental issues and conservation of natural resources.

There is a vast amount of information already available about these four categories of variables. They take the form of books, articles, and special studies. Our task is to turn this information into cogent scenarios detailing the likely patterns that define the future shape of the External Environment for transportation.

But simply describing these scenarios is not enough. We also need to assign meaningful probabilities to the likely occurrence of each scenario. In the case of scenarios for future GDP growth, for example, we want to be able to tell the public (not to mention each other) that:

“There are nine chances out of ten that national GDP growth during the next ten years will average at least X percent; three chances out of four that it will average at least Y percent (larger than X); and one chance out of two that it will average at least Z percent (larger than Y).”

Once we understand the External Environment for surface transportation, we can move on to the task of developing a serious strategic vision of what an effective transportation system should look like.

HOW TO DEVELOP TRANSPORTATION STRATEGY

Needless to say, each of us in the transportation community probably has his own ideas of what such a strategic vision should be. But our ideas aren't what matter. Rather, it's the ideas of our customers. And this is where things become really interesting.

More than a generation ago, management guru Peter Drucker stated that:

“The primary goal of every enterprise should be to Create Customers.”

To make sure that there was no confusion about this, Drucker went on to tell us in no uncertain terms that the traditional focus on ***Generating Profits*** is not a proper goal for an enterprise that wants to be successful. An adequate level of profits is simply one of the costs that the enterprise has to cover with its revenues – just like salaries and wages, payments to suppliers, and capital investments in new plant and equipment. Creating Customers is the only goal that matters if an enterprise is to justify its existence in a modern capitalist society.

Drucker's revolutionary insights about the importance of Creating Customers became the driving force behind the management discipline that we now call ***Marketing***.

Unfortunately, this choice of terminology is a poor one and has led to much confusion down through the years because an entirely different area of activity has a prior claim to the name.

Remember when we were kids and heard our mothers talk about “doing the marketing”? This meant going to the supermarket to buy the weekly supplies of family groceries. In other words, it had nothing whatever to do with the task of Creating Customers for goods and services. This may account for the confusion over what the management discipline called Marketing is really all about among those of us whose educational backgrounds are in Engineering, Public Administration, or Law.

But despite its ill-chosen name, the intelligent application of Marketing as a management discipline has been the hallmark of every successful American enterprise during the last generation. And we must make it a cornerstone of our efforts to plan, build, and manage the kind of surface transportation system that can properly support future economic growth. In short, responding to customer needs should be the primary driver for the efficient allocation of transportation capacity.

The four most important components of Marketing are:

- ***Defining who our customers really are.***
- ***Identifying important needs that these customers will pay good money to have satisfied.***
- ***Developing solutions that satisfy those needs.***

- ***Aligning the entire enterprise around Creating Value for Customers.***

These are the most important tools for Creating Customers. And they are just as relevant for developing effective roadway, freight rail, and public transit systems as they are for developing effective computer applications software or automobiles or toothpaste.

So we should begin by ***Identifying Important Customer Needs*** in the arena of transportation. We may think that they already know what these needs are. But our ideas are really just guesses because we have depressingly little factual information about what transportation customers themselves see their needs to be. And we can't expect to develop a truly effective transportation system by relying on mere guesswork.

We will also learn about how our customers categorize themselves. For example:

- ***Male automobile commuters may fall into a different category than female auto commuters for a wide range of needs.***
- ***Both categories of auto commuters are likely to perceive transportation needs quite differently from the managers of business firms concerned with moving the goods they produce from factory to marketplace and the supplies they need from distributors to their factories.***

- ***Managers of goods movement firms in trucking may have views of what an ideal transportation system should be like that are radically different from the managers of freight railroads. Not to mention being different from the views of those who manage multi-modal logistics firms like UPS and FedEx.***

In other words, we are likely to discover that there are far more categories of transportation customers than we ever imagined. Each category has its own distinct perception of needs that are worth paying an ideal transportation system to satisfy. This can be the case even in such presumably common areas as safety and security.

But just as with analyzing the External Environment for transportation, this kind of Market Research can't be thought of as a one-shot effort. Instead, it must be on-going. For two important reasons:

The first reason is that the views of our customers are the only meaningful way we have to ***measure our success*** in developing the kind of transportation system that the nation needs. We have to let our customers tell us whether we are doing the right kind of job, and this means listening to what they have to say at frequent intervals.

The second reason why Market Research must be an on-going function is that ***customer needs are likely to evolve over time***. Given the long lead time needed to plan and build transportation facilities, we must try to get ahead of the curve in anticipating how customer needs are evolving. Simply playing catch-up ball is one of the reasons why so many of our major metropolitan regions are

crippled by traffic congestion. On-going Market Research is the only way we can anticipate Tomorrow's transportation needs soon enough to meet them in a timely fashion.

Planning and managing the on-going functions of analyzing the External Environment and conducting effective Market Research are major undertakings. But they must be done before we can develop a meaningful strategic vision of what transportation in America should look like. So we have to make some decisions about where the responsibility for carrying out these undertakings should lie.

THE RESPONSIBILITY ISSUE

In an ideal world, it might seem logical to assign this responsibility to the federal Department of Transportation. After all, we are talking about issues of national significance that the federal government should presumably handle.

But today's federal government is a far cry from the federal government that we had during the 1930s and 40s. This was the government that led us bleeding and moaning out of the Great Depression. That turned us into an overpowering Arsenal of Democracy to defeat the Forces of Darkness in Germany and Japan during World War Two. That propelled us after the War into the greatest era of economic prosperity and world leadership our nation has ever known – which provided the national momentum that led to the Interstate Highway System, the Space Program, and ultimate victory in the Cold War.

The federal government of the 1930s and 40s seemed to epitomize the can-do spirit of American know-how like no other government in our history. And

we could generally trust it to do things right. But today's federal government is a pale and wimpy shadow by comparison. And we have little confidence that it can do anything right.

Fortunately, there are encouraging signs that state governments are willing to step into the vacuum left by a federal government that has lost too much credibility. Almost out of desperation, forward-thinking state transportation departments are already seeking out new ways to implement badly needed transportation improvements that don't rely on Washington. Even to the extent of forming partnerships with the private sector to tap its management expertise, marketing savvy, and capital sources.

This suggests that state transportation departments should assume responsibility for analyzing transportation's External Environment and conducting Market Research among its customers.

CONCLUSIONS

State DOTs must arm themselves with detailed information about the External Environment for transportation, solid Market Research into the needs of transportation customers, and improved management capabilities. Only then can they proceed to develop meaningful strategic visions for what our transportation systems should look like. At which point, discussions of funding gaps and other issues concerning the tactical **hows** of translating these visions into reality begin to make sense.

Admittedly, these tactical how's concern the issues that we feel most comfortable discussing because they are closest to the experience of

transportation professionals. And they seem most relevant to the pressures we are under to improve transportation. So we are naturally anxious to find out:

- ***What should we start doing?***
- ***What should we stop doing?***
- ***What should we keep on doing?***

But the fastest way to come up with meaningful answers to these tactical questions is to frame them in the context of a true strategic vision for the future shape of transportation in America. I have attempted to show some of the lines of thinking that we should pursue in order to develop such a vision.

In this paper, I've made liberal use of the term "WE". But it's important to define this term properly.

In the narrowest sense, WE refer to those who plan, design, finance, build, and operate transportation facilities and services. In other words, those people on the front lines.

But transportation stakeholders also include elected officials, managers, and technical professionals in Washington, state capitols, and local governments whose responsibilities involve transportation to one degree or another.

In the private sector, important stakeholders include the many firms whose primary businesses involve selling goods and services to transportation providers. Not to mention those firms that provide various kinds of services to move people and goods.

Finally, perhaps the most important stakeholders of all: transportation customers. Whose concerns are too often overlooked?

Isn't it strange, for example that the American Automobile Association seems to have no place at the transportation policy table? Triple A has more than 49 million members who constitute the largest organized group of roadway users in the nation. They have an obvious stake in expanding roadway lane capacity, and in not over-burdening the roadways they depend on with goods movement trips that could be better handled by rail. So where is Triple A in the ranks of transportation policy-makers?

In short, the collective WE in transportation turns out to be more encompassing than many of us may have imagined. And it is vital that all these voices be heard in order to develop a meaningful strategic vision of what American transportation systems should look like in the future.