

**GAUGING FUTURE PROSPECTS FOR A NEIGHBORHOOD VEHICLE:
WHERE DEMOGRAPHIC ANALYSIS FITS IN¹**

by

Peter A. Morrison
The RAND Corporation
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ABSTRACT

This case study examines the future market for a newly-conceived low-speed electric “neighborhood vehicle” (NV) suited to transportation needs within U.S. retirement communities and other settings sheltered from conventional automobile traffic. Although targeted initially to residents of gated communities, the NV has a potentially wider, far-reaching market when viewed in demographic perspective. This paper identifies the salient demographic influences that will shape this market within the U.S., then advances a general strategic vision of the future NV market based on: (1) the distinctive types of communities evolving in American society, (2) the growing orientation toward leisure and retirement lifestyles as consumers reach the “empty-nest” stage in life, and (3) forthcoming consumer population trends buttressing those lifestyles. It then considers how these insights could inform business decisions about the NV more generally. The paper=s case-study format introduces the reader to the business context and decision that originally motivated the analysis, illustrates how issues for analysis were defined and addressed empirically, and interprets the decision that eventuated.

¹ Paper presented at the Australian Population Association’s 11th Biennial Conference, Sydney, October 2-4, 2002. Author contact: Peter A. Morrison, 863 Radcliffe Ave., Pacific Palisades, CA 90272 USA. Voice: (310) 454-0142; Fax: (310) 459-4871; e-mail: morrison@rand.org

I. INTRODUCTION

This case study recounts an effort to foresee the future market for a newly-conceived neighborhood vehicle (NV). The NV is a hybrid between a car and golf cart. Essentially a low-speed electric vehicle suited to transportation needs within U.S. retirement communities and other settings sheltered from conventional automobile traffic. Although targeted initially to residents of gated communities, the NV has a potentially wider, far-reaching market. This paper highlights long-range demographic influences likely to broaden that market and considers how such insights can inform business decisions about the NV.

Three ongoing developments will enhance consumer interest in the NV: (1) the distinctive types of communities evolving in American society, (2) the growing orientation toward leisure and retirement lifestyles as consumers reach the empty-nest stage in life, and (3) forthcoming consumer population trends buttressing those lifestyles. The paper's case-study format introduces the reader to the business context and decision that originally motivated the analysis, illustrates how issues for analysis were defined and addressed empirically, and interprets the decision that eventuated.

BUSINESS CONTEXT

Neighborhood vehicles encompass a wide range of lightweight contraptions for transporting people within settings separated from conventional automobile traffic. Figure 1 shows one version of such a vehicle. Unlike golf carts commonly used in retirement communities, the NV travels faster and affords passenger-cargo configurations adapted to the varied needs of smaller households at different stages in the life cycle. For example, the same NV platform might suit the needs of four passengers (e.g., grandparents with visiting children or grandchildren) or two passengers (e.g., an older couple and six bags of groceries). NVs carry sticker prices ranging from about \$6,000-\$13,000 (compared with the \$3,500 cost of a typical golf cart).

The potential market for NVs is largely uncharted, but the varied uses of such vehicles imply a market composed of multiple distinct niches. An obvious niche would be empty-nest

families in gated retirement communities, where the NV could serve as the second of two household vehicles (displacing golf carts in such settings). Other potential niches, though, are less apparent or undiscovered—for example, self-contained island communities, sprawling health or industrial park campuses, and controlled-access national parks. Each is a setting where routine, internally-oriented personal transportation needs arise—needs now met by the ubiquitous golf cart.



Fig. 1 Bombardier's Neighborhood Vehicle

Demographers are good at highlighting long-range shifts and offering a useful frame of reference for comprehending them. Characterizing market evolution with reference to cohort change—e.g., in household makeup or comparative health and vigor in old age—introduces fresh new perspectives which can reveal hidden opportunities. With regard to the NV, a demographic

perspective can nurture a strategic business vision, sparking new ideas and insights into potential niche markets.

CLIENT ORIENTATION

The client here (who must remain anonymous) had a near-term business orientation which fostered an overly narrow perspective on the NV's future prospects. The immediate concern was: Can we anticipate sufficient initial sales among gated community residents to justify the expense of entering the NV market? Framing the question this way inevitably narrowed the focus to ascertaining how many people now live in gated communities, their economic circumstances, and how deeply this market would need to be penetrated to cover initial start-up expenses for vehicle design and production. In short, what the client sought was an overall number (the household population of gated communities) as the basis for estimating likely potential sales just to that one segment of the market over an initial one- or two-year period. Little weight was given to other potential niche markets or entirely new ones the NVs might cultivate (as golf carts have done in non-golf settings).

Fortunately, those with whom I worked also regarded this perspective (mandated from a higher management level) as myopic. Indeed, they hoped to enlighten management by broadening the business case for the NV, addressing the immediate issues of market feasibility but also charting long-run prospects for the NV. Toward that end, I assembled a demographic case for the NV, drawing on data and projections I could quickly locate. That case, as we will see, rests on:

1. The proliferation of compact communities, both residential and commercial, within which new types of personal transportation needs arise. Such communities have a common denominator: A need to shuttle around conveniently in settings that are internally oriented.
2. The lifestyles and health limitations inducing older Americans to affiliate with such communities, either full-time or periodically. Lifestyles include retirement and leisure pursuits; the quest for prestige, privacy, or security; and the necessity to adapt to limitations of health and mobility imposed by old age.
3. Ongoing demographic and economic transformations in consumer populations which reinforce the above developments: the growing number of mature consumers and small (one- and two-person) households; and the concentration of income and wealth among

upscale consumers. Such transformations will enhance the prospects for a neighborhood vehicle, both as an augmentation to a family fleet (e.g., a viable alternative to a second car) and as a discretionary indulgence (analogous to a snowmobile or power boat).

The following section addresses the immediate question about gated communities within the context of master-planned communities generally. Thereafter, I consider the salient demographic influences likely to shape the NV market and advance a general strategic vision of the future market. The final section recounts how these demographic insights played out in the business context and interprets the decision that eventuated.

II. DEFINING THE MASTER-PLANNED RESIDENTIAL COMMUNITY MARKET

LOCATING RELEVANT DATA

The NV fills certain transportation needs which arise within compact local settings. The most clearly defined such settings in the U.S. are master-planned residential communities (MPRCs), either gated or otherwise sheltered from automotive traffic. Drawing on a national database of MPRC projects under development by the Urban Land Institute, it was possible to identify 704 such projects in the U.S. and Canada. These are not necessarily all or even most of the entire universe of MPRCs, and the information on many projects was still incomplete. Despite these limitations, the data proved sufficient to characterize the MPRC market statistically in terms of approximate scale, concentration, and potential for expansion. Among numerous variables available were three important ones:

1. The number of residential units already built, useful for gauging the existing market structure in terms of potential customers clustered in communities of various sizes.
2. The eventual number of residential units projected at build out, useful for gauging the future market structure implied by the collective future expectations of developers.
3. The implied growth in number of residential units, derived from the above. That is, a project's number of units at build out (say, 10,000) minus the number already built (say, 4,000) defines the anticipated number to be added (6,000) over the future build-out period (say, 10 years). An implied annual growth rate (uncompounded) can be calculated here as $(6000/10)/4000$, or 15%. That is, next year's growth increment adds 15% to this year's market (under one set of assumptions).

Since the MPRC database at the time of use was a work in progress, information on many projects was incomplete. Accordingly, attention was confined to various subsets of all 704 projects.

Table 1. Distribution of MPRCs by Units Already Built
(data available on 214 of 704 projects)

No. of units already built	No. of MPRCs	% of units built	Cum. % of units built
10,000 - 24,800	15	45.0%	45.0%
4,000 - 9,999	10	17.5%	62.5%
2,000 - 3,999	33	18.1%	80.6%
500 - 1,999	67	15.8%	96.4%
Under 500	89	3.6%	100.0%
Units built, all levels	214	454,480	454,480
SOURCE: Tabulated from Urban Land Institute database on master-planned residential communities.			

Table 1 shows the distribution of MPRCs by number of units currently completed (among those 214 of all 704 MPRCs for which this variable exists). The distribution spans a broad range, from projects with only a few hundred units to those with several tens of thousands. From the cumulative relative distribution, it is apparent that existing units are highly concentrated in relatively few large MPRCs. For example, a mere 25 MPRCs accounts for over three-fifths of all units identified. If the full universe of 704 MPRCs is roughly this concentrated, the very large MPRCs could be especially attractive markets for the NV. For one thing, they would offer distinctive scale economies for local advertising and distribution. MPRCs with 10-20 thousand residents could be targeted as distinct sales and service territories, each with their own staff.²

² The leading states with existing MPRCs are California (90,000 units), Texas (85,000 units), Florida (70,000 units), Arizona (35,000 units), Virginia (34,000 units), and Maryland (30,000 units). A handful of other states, along with Ontario and Quebec, account for most of the remainder.

Table 2. Distribution of MPRCs by No. of Units at Eventual Build out
(data available on 303 of 704 projects)

No. of units at eventual build out	No. of MPRCs	% of units built	Cum. % of units built
20,000 - 106,000	15	33.7%	33.7%
15,000 - 19,999	10	10.9%	44.6%
7,000 - 14,999	35	21.2%	65.8%
3,000 - 6,999	72	20.0%	85.8%
1,500 - 2,999	61	8.4%	94.2%
Under 1,500	110	5.8%	100.0%
Units built, all levels	303	1,530,100	1,530,100
SOURCE: Tabulated from Urban Land Institute database on master-planned residential communities.			

Gated communities in particular may have a built-in potential distribution channel for the NV. A potentially important feature of the gated community is its underlying governance system: the self-governing homeowners= association (HOA). The HOA is a private entity that can make its own rules--including restrictions on motor vehicles or rules governing internal transportation modes. Each property owner shares legal ownership of streets, sidewalks, and other common facilities with fellow homeowners.

Table 2 shows the distribution of MPRCs by intended future size (number of units at build

out) for 303 of all 704 MPRCs for which this variable exists. Again, the distribution indicates noteworthy concentration in relatively few large MPRCs. For example, the 60 eventually largest MPRCs would account for nearly two-thirds of all units at build out.

Relating each MPRC's forthcoming build out to its present size yields an implied growth increment. Aggregating those increments over all MPRC projects for which data are available provides a rough estimate of the pace of future expansion as the build out pipeline materializes. Based on complete data for 188 projects, the build out pipeline implies a growth increment 1.75 times as large as the stock of units already built. That is, developers in aggregate foresee an additional 175 units at build out for every hundred units that now exist.

In most instances, build out time horizons are less than 20 years, which implies continuing growth in excess of 3% annually. The arguable assumption, of course, is whether projects in aggregate will advance steadily toward (or indeed eventually attain) build out as planned. Nevertheless, the build out pipeline (reflecting long-range expectations of project developers) implies a continuing expansion of residential units and, by extension, an expansion of internal transportation needs within MPRCs well into the next century.

GATED-COMMUNITY MARKETS

Gated communities are, for the most part, a subset of MPRCs. (Not all gated communities, however, are master planned.) A recent national study of gated communities offers additional detail on such communities and their broadening evolution.³ Briefly, gated communities began to appear in the late 1960s and 1970s as master-planned retirement developments (e.g., Leisure World). Thereafter, gates spread to resorts and country club developments and then to middle-class suburban subdivisions. The 1980s saw a proliferation of gated communities around golf courses (designed for exclusivity, prestige, leisure) and the emergence of gated communities responding to crime fears. During the 1990s, the trend toward gating expanded rapidly. Gates become ubiquitous in many areas, with entire incorporated cities now featuring guarded entrances. Industry sources claim that four of every five new urban projects are gated and 54% of Southern

³ Edward J. Blakely and Mary Gail Snyder, Fortress America: Gated Communities in the United States (Washington: Brookings Institution Press, 1997).

California home shoppers surveyed in 1990 want a home in a gated, walled development.

According to the latest statistics, approximately 1,900 gated communities exist nationwide in 1997, divided about equally among luxury, retirement-oriented, and middle/working-class types. Collectively, gated communities are populated by 3.1 million households and 8.4 million people. The median gated community had 166 housing units and was most commonly located in southeastern and southwestern Sunbelt states, particularly California and Florida.

Gated communities serve distinct markets and, by implication, would form distinctive niche markets for a NV. Catering to the Alifestyle market \cong are three distinct types of communities: the retirement community (e.g., Sun City or Leisure World), aimed at middle- and upper-middle-class retirees who want structure, recreation, and a built-in social life in their early retirement years; the golf and leisure community (e.g., Hilton Head), having golf courses and tennis facilities as their central features; and the suburban new town (e.g., Reston, VA, Columbia, MD, or Celebration FL), which typically are large communities incorporating both residential and commercial/retail activities. What is termed the Aprestige market \cong caters to those seeking distinction, image, and privacy. Among the fastest-growing forms of gated community, they include small compounds of privacy for celebrities and enclaves of the very affluent (which are now being mimicked by middle-class Awanna be \cong prestige executive home developments). Lastly is the Asecurity zone market \cong which caters to those seeking defensive fortification.

Within each market (and even type of community), distinctive transportation needs can be foreseen:

- ∃ For residents of the retirement and the golf and leisure communities, daily activities center internally on golf course and club house; a wide range of other recreational amenities; and structured programs of social activity. Here the NV might serve as the sole or primary vehicle in a family fleet for retirees or for working-age adults while they are in residence at what may be their second home.
- ∃ For residents of master-planned suburban new towns, daily transportation needs cover the entire spectrum but many of the destinations would be within shared local public space that is privatized and controlled (school, shopping center, commercial offices). Here the NV might serve as part of a two- or three-vehicle family fleet.

- ∃ For the prestige market, the NV might have appeal as an optional addition to a family fleet (analogous to snowmobile, jet-ski, and other expensive toys).
- ∃ The security zone market implies a need for community patrol services and internal security escort services for residents and visitors.

III. ENVISIONING THE POTENTIAL FUTURE MARKET

Over the long term, the implied growth of the gated and MPRC markets eclipses the immediate prospects in just the initial years. A focus on the near term is myopic, since most large MPRCs are not yet fully built-out to their intended future size. Several further considerations involve the long-term demographic and economic trends pertaining to the potential consumer base and its purchasing power. Among those trends are:

- ∃ Robust future growth of mature consumer units, exemplified by the projected 2.2%-annual increase nationally in households headed by persons age 55 and older (twice the rate for all households) over the next decade. Such growth will enlarge the lifestyle market (and communities catering to it) and reinforce demand for continuing care of elderly persons.
- ∃ Growth in small (two- and one-person) household configurations. AEmpty-nest≡ families are projected to increase sharply as the oversize baby boom cohorts mature into their 50s and 60s: from 37.5 million in 1998 to 44.2 million by 2008 (an 18% increase in 10 years). Increasing numbers of one-person households will be maintained by older adults (mostly women). Above age 55, these lone-individual households will increase from 12.8 million in 1998 to 15.4 million by 2008 (a 20% increase). Such growth aligns well with the capacity limits of the NV.
- ∃ Increased concentration of income among affluent households, tracked in annual CPS data. The share of aggregate income going to households ranked in the top quintile by income, for example, has risen from 46.5% (1991) to 49.2% (1998). Among those ranked in the top 5%, the corresponding share has risen from 18.1% to 21.4%. Concentration of wealth is even more extreme. These Ahave-more≡ consumers compose a market with expanding purchasing power, able to indulge discretionary tastes for convenience and luxury Atoys≡ which enhance life at later ages.

Beyond these considerations of scale, impending growth, and prosperity, however, are further strategic insights which extend wholly beyond the near term. The varied uses to which golf carts are now put suggest a more extensive potential market beyond gated communities and even

MPRCs. Recall that the underlying common denominator identified earlier is a need to shuttle around conveniently within internally-oriented settings which are (or could be) sheltered from automotive traffic. For example:

- ∃ Sprawling health, science, and industrial campuses, where the NV could offer internal self-shuttle (e.g., by permitted staff granted card-key access to a campuswide NV fleet); assisted mobility for patients being transported among buildings; internal service and delivery of mail, packages, food/light catering; and campus patrol service.
- ∃ Large resorts, using the NV for visitors= reception, baggage delivery, and other internal delivery service needs (e.g., room service).
- ∃ National parks with sheltered driving zones where the NV could be used for internal self-shuttle by card-keyed visitors.
- ∃ Island communities which limit automobile traffic and designate sheltered driving zones for a mix of NV and bicycle traffic on secondary roads.

IV. HOW THE DECISION WAS REACHED

Insights from data, along with a disciplined effort to envision the NV=s varied possible uses, painted a bright future over the long run. The outlook was for an expanding population base for whom the NV was well suited, both personally as buyers and indirectly as users. The market itself might be composed of distinct niches which could be targeted with different variants of a vehicle built on a common platform. These long-term prospects, however, competed with the client=s near-term orientation, which dictated that the numbers add up to a profitable venture within the first few years. Would enough sales materialize to cover the costs of entering this new, as-yet-uncharted market? As events transpired, the decision was driven by an unforeseen external development.

As the business case was being finalized, the client=s own intelligence discovered that two other national competitors had already progressed beyond the Athinking≅ stage and were poised to enter the market with NVs of their own. The client reasoned that dividing the pie three ways (and being the late-starter) would doom the effort to break even in the near term. They decided against entering the marketBan inevitable choice, perhaps, given the narrowly-conceived business decision they had posed.

Ironically, subsequent developments affirm the demographic rationale for the NV. Roughly a year later, the news media featured Bombardier=s recently unveiled Neighborhood Vehicle, Aa low-speed electric car developed for retirement communities, [which] hopes to meet the market of aging boomers head-on....introduced with the intention of luring the aging consumer by creating stylish products that quicken the pulse while cossetting the creep of infirmity.≅ [New York Times, June 27, 1999]. A June, 1999 Wall Street Journal article (headlined APromise of >Neighborhood Electric Vehicles= is Alluring≅) described the different strategies competitors were following to exploit various niches within the market.

What are the lessons here for applied demographers? First, a demographic perspective, buttressed by data and interpretation, can help elevate business thinking to a more strategic level. Second, large ideas will not necessarily register with small minds ill-equipped to look beyond near-term profit calculations.