

EXPLORING ALTERNATIVE CONCEPTS FOR A FILIPINO CAR

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FOREWORD

I am not an automotive engineer. I do not belong to the automotive industry, not a mover and shaker – just an aficionado. I just found a reason to build my car because the service vehicle that I was provided in 1994—a *Fiat Uno*—had no more spare parts, since Francisco Motors terminated its contract with ItalCar in 1996. In the process of maintaining that car, I was introduced to the native genius of Filipino mechanics and auto tradesmen. The competence of these workers was on the practical, not on the theoretical side. They learned their trades through apprenticeship – greasy, grimy, hands-on experience. The older workers never had a Technical Education and Skills Development Authority (TESDA) or a vocational school to train and certify them, but they were good. These are Filipinos who simply have a natural passion for making things work and making things run.

One has probably noticed that Filipinos who had experienced deprivation during the Japanese occupation (and I saw this in my own parents) never discarded anything that broke down. These had to be stored somewhere because “*Pwede pa ‘yan!*” (“That will still do!”). It can still be

repaired! It can have a second life! Take note that the experience of deprivation and poverty is the strongest motivation for recycling – a very important concept, even today.

WHAT ABOUT “A FILIPINO CAR”?

Now, what about a “Filipino Car?” Let us start with “*Filipino*” and then “*car*.” The endless debate on *what is Filipino* has been raging very noticeably in the profession in which I was trained, namely, architecture. In that field of practice, the great mystery is that there are actually more opinions about what is Filipino architecture than there are architects.

Only one senior colleague and friend, Bobby Mañosa, seems to have made headway among design-build practitioners in pushing and developing the *bahay kubo* as being the fundamentally Filipino architectural icon. But making headway does not necessarily mean being accepted. He has stood his ground and made a niche for himself in the field of design and indigenous construction materials, but is sadly viewed with cynicism by others who have their own pet ideas, interests, and criticisms. Mostly criticisms.

Much to his credit, due mainly to his durable convictions and tenacity in research and development (R&D), I think Mañosa has made his mark.¹ Whether it will endure beyond the lifespan of his projects remains to be seen.

THE MISSING LINK TO HOPE

How did I make the leap from architectural design to automotive? The answer is simple. A car is just a *house with wheels*. Even a lawyer can say that. Also, my car was born of necessity, as my service vehicle was deprived of replacement parts since 1996. I am not assigned to a parish that can bankroll a vehicle, so I had to find more creative solutions. For the six or seven years that mechanics were maintaining my poor Fiat Uno, the constant refrain was: “*Sir, mahahanapan natin ng paraan.*” (“Sir, we can still find a way.”). They were telling me: “*Sir, may pag-asa pa ‘yan!*” (“Sir, there is still hope to have that fixed!”).

In my out-of-town sorties, I saw how the various trades were basically complete even in provincial motor shops, particularly in the dwindling *jeepney* fabrication small and medium enterprises (SMEs). There were engine mechanics, chassis welders, tinsmiths, auto-electricians, “specialists” in wheels, brakes, etc. There is no shortage of tradesmen. The glaring missing link in our native automotive industry is *creative and functional design*. There lies an empty niche, I thought.

A TALE OF TWO ICONS

Let us first take a look at two reputedly Filipino icons, one architectural, the other automotive. The architectural icon is the

bahay kubo (although as I said, many would dispute that), and the automotive icon is the passenger *jeepney*. Although the *bahay kubo* may have preceded the *jeepney* by centuries, my opinion is that the *jeepney* has come to be more Filipino in the field of automotive than the *bahay kubo* has in the field of architecture. But tracing the history of these two gives us good reason to lament.

The *bahay kubo*, in fact, has not truly served the majority of Filipinos. Not many architects have picked it up as a symbol or as a paradigm for design. In the decades after World War II, it was quickly overrun by the *barong-barong*, because of the invasion of western building concepts and the rapid rural-to-urban migration aided and abetted by mass media [e.g., *OK lang tumira dito: “along da riles” na nga, “along da airport” pa!* (It is ok to live here: it is not only along the railroad tracks, it is also along the airport!)] and some US-schooled academics.

The *bahay kubo* really has no place in the urban area unless it undergoes a process of research and is developed into urban architecture. It is interesting to observe how the majority of Metro Manilans seem to be living out a rural culture within a supposedly urban setting. The fact is that they have not really been urbanized. And if the *bahay kubo* is not urbanized, it becomes a *barong-barong*.

The story of the *jeepney* is one of stunted evolution, again for want of R&D. From the Detroit and New York celebrity it once was in the 1960s, it has come to be an outdated disgrace – by the mere passage of time. Since its inception in 1953, little significant design work has been put into it. No comparable R&D and

very little *science* was added to the original thinking that was done by Clodualdo Delfin, Leonardo Sarao and Anastacio Francisco by their successors.² That is why the jeepney seems to be fading from the scene.³

The erstwhile “King of the Road,” has also lately fallen into disrepute as a traffic menace and a source of air and noise pollution. It belongs to the essence of the jeepney to be loud and noisy, just as engine roar is characteristic of American hot rods and Harleys. The rumble has to be felt in the chest, if not in the ears. Pollution is not deliberate, but one wonders if smoke-belching might not be part of the show (like the smoke trail left by jet aircraft), considering that some models sport two tailpipes on opposite sides of the rear. In most cases it is simply because their diesel engines are not properly calibrated and maintained due to economic constraints.

To make matters worse, public utility jeepney (PUJ) drivers deliberately and habitually misbehave in the middle of the streets so as to irritate car-owners. They are making a statement which road rage prevents many motorists from grasping: “Even if I am poor, I am King of the Road!” (Notice how tricycles are also now emulating the loudness and the road greed of big-brother jeepney?).

The Jeepney and its European Cousin

Not many people are aware that our jeepney has a European cousin. Both share the same pedigree, having been born from the war surplus reconnaissance vehicle called the “government-P Willys” or “GPW” – affectionately called “Jeep” by US troops in World War II. Willys-

Overland and later Ford Motor Corporation bagged the contract to mass produce the Jeep, churning out over 700,000 for the war effort, after which the US Army dumped a sizeable number of surplus GPWs in Manila (the Pacific Theater) and in London (the European theater).⁴

In the Philippines, we transformed the GPW into a public transport vehicle (registered as “public utility jeepney” or “PUJ”) and added our artistic flair, primarily derived from *calesa* art. It was fine while it lasted. Today even the art is fading, as seen in the growing number bare G.I. and stainless steel jeepneys. The sheet metal is left bare for economic reasons. Stainless steel was introduced in coastal towns because ordinary steel corrode faster in salty air.

The British, on the other hand, developed it into a sturdy farm vehicle, whose name is now synonymous to toughness. It is the Land Rover: the meanest four-wheel drive vehicle by the turn of the millennium. Stylewise, it was not presentable; its initial countenance was ugly: like a face with the nose punched inwards.⁵ But because it was loaded with R&D over several decades since its inception in 1947, it has evolved and even diversified into several world-class 4x4 vehicles.⁶ In this way, the Land Rover moved away early from what might be called “surplus dependency.”

Meanwhile, its Filipino cousin suffered nothing more than decoration (*palamuti*). There was no R&D. No significant new science and technology was being put into the jeepney fabrication industry, not even by way of borrowing. While other “native” vehicles have

Table 1 World War II Surplus GPW Reconnaissance Vehicle: Facts

Country	Great Britain	Philippines
Inventor	Maurice Wilks	Clodualdo Delfin
Vehicle type	Farm Vehicle	Public Transport Vehicle
Common name	Land Rover	Jeepney
Leading manufacturer	Rover Co.	Sarao Motors, etc.
Evolution:		
1950s and 1960s	Land Rover	Owner and variants
1970	Range Rover	(Chariot)
1989	Discovery	(Wrangler)
1990	Defender	(Minicab)
1997	Freelander	(Joroshelly and XLT) (Legacy First)

emerged, they are not based on any significant R&D, and only follow the same surplus-dependent recycling and styling process. These are: (1) the domestic “owner type” jeep, (2) the Wrangler replica, (3) the minibus type “Chariot,” (4) the “Minicab,” (5) the *Ilonggo* “Joroshelly” and its *Kapampangan* counterpart, the “XLT,” and (6) Norkis Motors’ “Legacy First,” a mini-single cab pickup. Of these, only two can trace its style and development ancestry to the Willys. And except for Norkis, there is little apparent intent for scientific design, and fabrication is totally at the mercy of skimpy economics and deficiency of political will.

The Fall of the Jeepney: Internal and External Factors

There are intrinsic and extrinsic reasons for the decline and fall of the jeepney. Let us examine the case of Sarao Motors in Las Piñas, which closed down in the year 2000. While it never had more

than 300 employees, and it was churning out five jeepneys a day, because of 47 years of “*sipag at tiyaga*,” it was regarded as the dean of jeepney fabricators. Today, Sarao Motors is no more than a tourist spot, its shopworks minimized, only to service warranties.

When I visited Sarao in May 2003 with my drawings—hoping that they would fabricate my vehicle, the style of which I deliberately derived from the jeepney and “owner-type” jeep—I was bluntly told, “Sorry, we only do jeepneys.” I had gotten the idea of evolving the jeepney because I believed it was in doldrums. I then concluded that what killed Sarao was not just the air-conditioned Toyota FX and the anti-jeepney bias of the Land Transportation and Franchising Regulatory Board (LTFRB), but also the inordinate attachment of Sarao Motors to its own product coupled with a chronic fear of change or innovation. I said to myself, *masyadong sarado ang Sarao, kaya sila*

nagsara! (Sarao is too close-minded, that is why they had to close down!)

What can sociologists do about this, I wonder? The solutions to this attitude problem lie in applied science, but surely sociologists can pave the way to retooling the paradigms of the native (automotive) industries. In general, we need to train Filipinos to be scientific innovators. We need to upgrade the mentality of Filipinos from being consumers to being producers. There is no economic growth purely from money changing hands, and certainly not from the madcap purchasing of imported goods. A healthy balance of trade requires that we produce and sell goods. If we have no goods to sell, we will end up selling our very selves. That is precisely why we have the OFW phenomenon, the social costs of which are exorbitant and long-term.

The native Filipino auto industry is a small and medium affair. It is not a “big business.” So, it is a backyard thing, classified as a “cottage industry.” However, if any native auto firm grows “too big for comfort,” the big automakers feel compelled by the rules of competition to shoot it down.

Case No. 2: Francisco Motor Corporation (FMC) is hanging on for dear life. Anastacio Francisco was a *calesa* painter who apprenticed in Sarao’s shop, and later set up his own Jeepney assembly operation. That became Francisco Motors Corporation – certainly not a pushover. What nearly killed FMC was a Ford/Mazda maneuver. For many years until the year 2000, FMC had a contract with Mazda to assemble the B200 series pick up. But since Ford was going to launch the Ranger series in 2000, and wielded 30 percent controlling interest over

Mazda, Ford prevailed over Mazda to stop B2000 production. Mazda then breached its contract with Francisco Motors, Francisco filed suit, and the case is pending in the Supreme Court. Bleeding, Francisco had to shut down its Asian Utility Vehicle (AUV) line as well – the *Anfra*. To add cyanide to the gaping wound, the Bureau of Internal Revenue (BIR) picked on Francisco Motors, publicly listing it among exemplary alleged tax evaders like Regine Velasquez and Richard Gomez – to send signals to the general public to “pay-your-taxes-or-else.” Why single out Francisco, when there are hundreds of bigger tax evaders worth putting on the scaffold? Was it chosen by raffle, or was the BIR’s choice prompted by “big brothers” in the global auto industry?

We should also admit that corruption within *Pinoy* private business enterprises is a blameworthy internal factor for their decline. Filipino entrepreneurs sometimes take too much liberties over their businesses, thus lowering their leverage and raising their vulnerability in the face of foreign competition. Connivance of government and foreign business interests constitutes an external factor. As the native auto mechanics put it in their own slang: *Toyota ang tumodas sa Sarao at Ford-Mazda-BIR ang tumutumba sa Francisco* (Toyota killed Sarao and Ford-Mazda-BIR knocked down Francisco).

VALUES IN SCIENCE, EDUCATION, AND TECHNOLOGY

Foreigners do not relish competition – especially not from Filipinos who have been typecast for the new world order to be consumers and service persons; we are

perceived as better off being caregivers and entertainers, not producers of economic goods.

So what do we need science and higher technology for, if we are not destined to be competitive producers anyway? What do we have and where do we obtain purchasing power to buy manufactured goods (the raw materials for which come from us in the first place)? We have no capital, we are already forfeiting our sovereignty over our natural resources, and it seems the only thing left to sell is *ourselves!* Cheap labor, the Filipino. *Mabuti na lang, at least, meron pa tayong coconuts!* (Good thing, we still have coconuts!). But even then, the coconut as a product cannot be attributed to purely Filipino inventiveness because—as Fr. Lynch might have put it—while we do the planting, it is God who provides the growth (Ref. 1 Cor 3:7-9). That is why agricultural people are generally closer to God, because they are closer to nature.

Earlier, while listening to Dr. Cuyegkeng, this thought occurred to me: *Interest in science presupposes an unquenchable curiosity about nature.* But when you are overexposed to artificial environments, with hardly any natural objects surrounding you (for example, in this auditorium, the only natural things are us and a few *palmeras*) you are handicapped. When we wake up in the morning, we do not see the sun rising; what we see is a light bulb. This is the bane of urbanites. The ones who really have the raw potential for true science are those who wonder at nature and are wholesomely and intensely curious about nature. And then they get into physics, chemistry, and biology. My point is that

there is something wanting in our science education, because we are being raised in a technological environment before we can even appreciate pure science from nature itself.⁷

Does science and technology have to be antithetical to nature? That is the misconception of many. Media and the academe are rife with themes like “*Technology vs. Nature*,” and slogans like “*The greatest enemy of the environment is man.*” I insist that it does not have to be that way! That only happens when one does not first respect nature and then emulate it later. Science needs to respect nature and technology needs to emulate it, because no matter how “close” we feel to nature, without a coherent respect and emulation, we end up abusing and violating it.

Actually, there is an ethic that underlies the fabrication of the jeepney. It was born at a time of scarcity and poverty, when common sense dictated that what others have made well should not be put to waste. Junking is not ecological. Recycling is. So, perhaps without even realizing it, the inventors of the jeepney were actually implementing—though in a rudimentary way—what is now called the “ecological ethic.”

Jeepney fabrication has always been a “4R” process: *Rescue, Recycle, Rehabilitate, Resell.* This was the paradigm that led to its success, but by the 1960s when the time was ripe for two more Rs to be added, the jeepney makers defaulted. What was appropriate technology soon became obsolete. By the 1970s, the jeepney was threatened with extinction. These two missing Rs are

Research and Redesign, implying intense education in science and technology. What they were putting in was mere *Redecoration*, but you can only do so much with plastic surgery. The problem at this late hour is how to add these two essential components into the process.

WHAT IS UPBEAT ABOUT OUR “COTTAGE” AUTO INDUSTRY

We know that our native auto production cannot compete globally, but looking at the bright side, we find the following:

1. *Domestic demand.* Filipinos who are in the middle and lower-middle income brackets need affordable utility vehicles.
2. *Availability of parts.* The parts are available, thanks to the consumerist laws governing vehicle registration in industrialized nations.⁸ We also have our own Motor Vehicle Parts Manufacturers Association of the Philippines (MVPMAP), although they presently serve mainly the foreign automakers.
3. *Acceptable competence.* Trades-men are abundant. They are spread out all over the archipelago. Many have had overseas exposure and training. The average Filipino autoworker’s assets are practical wisdom, from experience, occasional competence, and ingenuity.
4. *Acceptable motivation.* There is still in the remaining backyard shops a basic urge to do what is doable, but most of all, an indomitable passion to make things run.

Having said that, let us look at what we really need to hurdle in order to get our show on the road. These are findings

from my dealings with backyard autoworkers in the nine months spent fabricating my prototype vehicle.

WHAT AILS OUR “COTTAGE” AUTO INDUSTRY?

Occupational Intimidation. Are Filipino automotive assembly SMEs so culturally and economically battered, that they do not envision themselves as living beyond survival standards? From the cases cited previously, yes. There is lack of self-confidence. Do they not dream “big time?” Some who have access to radio/TV do, but are resigned to aiming only as high as proximate doables. The acquisition of higher technologies (e.g., TIG/MIG aluminum welding) is pipe dreams for them.⁹ *Simple na lang, kuya, total naiwan na tayo ng lahat. Dito na lang ako.* (Let us keep it simple, big brother. Anyway, everyone else has left us behind. I will just remain where I am.)

Overseas Filipino Workers (OFWs) have returned from abroad with newfound skills, savings, and even equipment, only to find that the shops are closing down because jeepneys and AUVs are being elbowed out of the market. We need to raise their vision of development – what they can still become.

Lack of Trust. How do they regard the government? It appears that Filipinos regard government and elective office in the same way they regard pop idols and entertainers. The electoral exercise is viewed as no more than games and amusements. To what extent do they rely on government agencies? Only insofar as they can get the minimum needed to get their vehicles on the road. Government

is more of a hindrance than a help – a kind of necessary evil fact of life. Do they prefer to operate within an underground economy? Yes. Why? Because it is too darned complex and onerous to get bigger. *Kaya simple na lang* (That is why, let us keep it simple).

Lack of Capital and Equipment. Do they have capital? No. In the economics of the poor, a modified Darwinism prevails. They borrow from one another, then try to survive. Some opt to sell themselves (or spouse or sons and daughters) in the OFW market to raise capital. How modern is their arsenal of tools? Outdated, though still workable.¹⁰ We need to educate workers in the basics of microfinance, especially the disciplines required in entrepreneurship.

Lack of Access to Technical Information. How do they learn how to build? Mostly by apprenticeship. Some have taken vocational courses in maintenance only – not design, nor assembly since Filipinos are not supposed to do these on their own. Is their knowledge scientific? No, their knowledge is more acquired through practice than theory, and more often than not, deficient. They know the craft, but not the science behind what they do. How updated are they in the trade? Only as far as they need to repair new models. We need to assist in the delivery of up-to-date work information in ways that laborers can understand.

Lack of Supplementary Education. Is their preparation for the industry complete? No, the little knowledge that they have is even now becoming compartmentalized prematurely, in accordance with western labor paradigms of specialization. What they need is

systematic cross-training, not mere familiarity with related trades. The systematization of cross-training (e.g., small business management) can speed up the growth of the native auto industry. In order to grow, they have to learn how to grow. They have to keep asking “What next?” We need to foster a culture of continuing education among the workers.

Personal Underdevelopment Issues. Are there any personality issues affecting work attitudes? In the order of means to ends, Filipinos have come to regard work as a means to rest, not vice versa. And to rest means games and amusements. It means eating and drinking—really heavy drinking! And then there is *aliwan* (amusement). This is the formula for a no-savings economy. We need to provide the moral infrastructure for a sustainable culture of work.¹¹ Many SMEs fail because of personal issues concerning work ethics. Among native autoworkers, alcoholism ranks high.

Another subtle personal issue is Filipino tendency to sentimental attachment. We should avoid becoming overly fixated on our products, pampering them to the point of hindering further development. Incidentally, Filipino parents now tend to treat their children in the same way. Is it because there are fewer children per family to bear the brunt of more stunting affection, or less time to enjoy their offspring?

And then there is our national auto-condescension, a mark of no confidence.¹² Finally, there is a marked decline of the *bayanihan* spirit, meaning, the loss of the sense of nationhood and the common good.

MY UTILITY VEHICLE PROTOTYPE

Thanks to my initial naiveté about these industrial handicaps, I embarked on building a vehicle of my own design. Aside from needing a car, I had to prove to myself that it can be done, even in a backyard garage. The main design criteria were as follows:

1. *Smoothness* of ride – because of perennial floods and rough road conditions, big wheels and long wheelbase;
2. *Durability* of the jeepney – a 10-20 year life expectancy for economic and ecological reasons;
3. *Comfort and amenities* of a car – to be at par, at least, with prevailing auto safety and interior standards (e.g., airconditioning, coolbox, power steering, power windows and electronic locks, music, spaciousness over coziness; a lounge, a rolling office, a second home);
4. *Usefulness* of a pick-up – for occasional light to medium hauling;
5. *Ruggedness* of an off-roader – for rural as well as urban use, with 4x4 option;
6. *Availability* of parts – incorporate components replaceable/repairable anywhere in the archipelago;
7. *Flexibility* – convertible from passenger, to wagon, to pickup; and
8. *Filipino style* – an evolution of the *jeepney* style to connect emotionally with native automotive tastes.

I would call it “DPROX.”¹³ I had scoured Metro Manila, Cavite, and Laguna, for willing fabricators, but the tinsmiths (*lateros*) all turned me down.

I ended up with a motor shop in Novaliches, and it was only then that I

realized that the reason why all the previous tinsmiths declined was their inability to translate from drawings to 3D (tridimensional). They were excellent craftsmen, but they had no training in the interpretation and visualization of shop drawings! They are *direct* sculptors, not sketch artists. They had always built from what they had seen in 3D and copied directly to 3D! The solution was to build a scale model and then teach them the basics of scaled measurement. Whenever necessary, I executed full-sized drawings on a bare concrete floor!¹⁴

The fabrication team members were amiable local migrant workers who are reasonably competent and task-oriented. Married and with children, they were notably alcoholic.

SOME IMPERATIVES

Consumerist to productionist culture. There is a need to transform Filipino economic outlook from a consumerist to a productionist economy, and from an importing to an exporting economy. Sociologists, social psychologists, and political economists would do well to examine how to re-engineer culture towards these beneficial directions. Let us promote the idea that it is better to sell one's produce than to sell oneself.

Streamlined invention-to-marketing process. It is imperative that we discipline, streamline, and facilitate the R&D/Invention > Registration > Prototyping > Testing > Investment > Production > Marketing process. Hello, Department of Science and Technology (DOST) and Intellectual Property Office (IPO)? Hello, Department of Trade and Industry (DTI)? Perhaps laws should be promulgated that

would minimize footdragging, selfish interests, and graft and corruption along this process. There deeds are nothing more than economic sabotage. Together with prevention, correct incentives should be given to functionaries whenever a worthy invention reaches predetermined milestones. Let the process be free of obstructions.

To its credit, the DTI has established the “One-Town-One-Project” (OTOP) program.¹⁵ Unfortunately, the OTOP does not assist the R&D/invention, registration, prototyping, and testing segments. The other piece of good news is that last January, Papua New Guinea had actually launched its new line of “PMV”—the Filipino jeepney.¹⁶

It is important to distinguish the R&D undertaken by government, *vis-à-vis* those by private entities. On one hand, it would be unjust not to make available to the general public any and all progress attained using government resources. That is to say, it should be clear to any private entity that when it avails of government resources, it relinquishes exclusive rights to the consequent products of R&D.

On the other hand, it should be clear to government that in a private enterprise economy, its role is *facilitator* in matters that the private sector is reasonably competent to engage in. It must not, apart from few established exceptions, compete with or co-opt private enterprises. It is in more complex research and development that government can and should take a lead.

Transport Design Courses and Guilds. It is important to establish “transport design” as a degree course in universities

and “automotive assembly” as a diploma course in vocational schools all over the country.¹⁷ Transport design is the missing link in our native auto industry. This is disgraceful since Filipinos excel in fine arts on one hand and in the automotive vocational skills on the other. Such schools (or special annual courses) should bring together the science of academics and the practical wisdom of tradesmen. Needless to say, the Department of Education needs to raise the level of technical sophistication of arts and crafts subjects in elementary and secondary schools. Design guilds can then be established, so as to keep an up-to-date pool of automotive design professionals loyal to the native industry.

Confidence Building and Strategic Alliances. We should address the general demoralization of native automotive SMEs. These can be done both in a positive mode and defensive mode. One reason why Filipino SMEs are what economist Bernardo Villegas jokingly calls “*Bentots*” (i.e., retardate) is due to lack of updated education in science and technology pertinent to their respective fields. This includes basic business education. To resolve this, the following must be addressed:

- a. *Unite academics and assemblers.* Blessed be the day when the academics of the University of the Philippines, Mapua, De La Salle University, Don Bosco, FEATI (Far Eastern Air Transport Inc.) University, and the jeepney-AUV assemblers of Balancas, Bacoor, Imus, Dasmariñas, San Pablo City, Valenzuela, Talavera, Lucena, Mabolo, Davao City, among others, can reach out to each other in a fusion of theory and practice.

- b. *Push vocational training from maintenance to assembly.* Vocational schools need to go beyond giving automotive maintenance courses and venture boldly into automotive design, assembly, and production courses! So with Mapua and technical schools like Don Bosco and others. Dualtech systems, it seems, mainly serve established multinationals by way of X-deals. More courage and determination is demanded before we can cross the threshold of consumerism, into productionism.
- c. *Settle intellectual property (IP) issues.* The adoption of existing science and technology, organic design, reverse-engineering, the settling of intellectual property issues – these are all pending in the industry. Assuming there are willing native investors, where do we get the technology? We have the science, but are squeamish, nay fearful and intimidated, about technological intellectual property

infringement. When does R&D become industrial espionage or piracy? Does reinventing the wheel involve an act of piracy or infringement? Why are we intimidated just because others have done certain things ahead of us? Why can we not get ahead of them in fields where we can?

We have all heard the catch phrase “Think global, act local.” I say local action means letting Filipinos work with fellow Filipinos. If we do not “hire” one another in a fellowship of cooperation, we shall end up being hired by others in an economy of competition, where we are divided and conquered. This is how we have ended up selling our very *selves*, instead of our produce.

*Kaya pa nating hanapan ng paraan!
May pag-asa pa ‘yan!* (We can still find a way. That still has hope!)

NOTES

- 1 Visit www.manosa.com. See also “Designing Filipino: The Architecture of Francisco ‘Bobby’ Mañosa,” available at Powerbooks and National Bookstore.
- 2 Leonardo Sarao was an enterprising *cochero* (*calesa* driver) who found work in an automotive bodybuilding and repair shop. The first Sarao Motors jeepney rolled out in 1953. Anastacio Francisco was a calesa painter who was later employed by Sarao, and who struck out on his own to found Francisco Motors. The earliest passenger jeepney is said to have been conceived, built, and driven in 1945 by Clodualdo Delfino, a musician-entertainer who needed to make a living immediately after liberation.
- 3 In October 2000, when Leonardo Sarao broke the news to his staff of almost 300 that Sarao Motors—once the biggest jeepney-makers in the Philippines—was ceasing production, most broke down in tears. It was probably the hardest speech the 78-year-old Sarao has ever had to make. But he had no other viable choice as the 47-year-old transportation company had been bleeding since 1995, mainly, he says, due to changed government regulations. “Our sales of jeepney units plunged because the Land Transportation Office (LTO) cancelled the issuance of

franchises to jeepney lines, but let other public transportation vehicles such as taxicabs continue to get theirs," says the hoarse-voiced founder of Sarao Motors. (www.cargonewsasia.com/timesnet/data/ab/docs/ab2714.html).

- 4 History: The Bantam Car Company won the opening round of the contest to satisfy the US army's 1940 specification for a light four-wheel drive but Willys-Overland won the battle and, some would say, the war. To ensure supply in wartime, the Army decided on a second supplier – Ford. Between 1941 and 1945 Willys and Ford built about 700,000 jeeps. In Great Britain, after World War II, Rover desperately needed to resume car production. Steel was in short supply and exports got first preference for all raw materials. Maurice Wilks had been using ex-army Jeeps on his farm and realizing that there was no real alternative to them decided that Rover would provide one. The first prototype Land Rovers (1947) were actually built on Jeep chassis. The bodywork was made of an aluminium alloy called "Birmabright."
- 5 In the language of Filipino auto workers, the front of a vehicle is called "*ulo (ng sasakyan)*" or head (of a vehicle).
- 6 The term 4x4 means that out of the four wheels, all four can be powered by the engine, as opposed to 2x4, where only two are powered while the remaining two are idle.
- 7 I graduated from Philippine Science High School, and it was not bad there. What saddened me though was that architecture was not included among the courses we were allowed to take in College, so I had to give up a National Science Development Board (NSDB) scholarship when I shifted from electrical engineering to architecture. But it is not true that architecture is not a science just because it involves a great deal of art; it is science and humanities.
- 8 We are flooded with surplus parts because registration of vehicles in industrialized countries like Japan is restricted to no more than five years. Enterprising *Pinoys* have, since the 1980s, been cannibalizing "expired" Japanese cars for recycling in the Philippines. In the surplus car parts stores dotting the country, the vocabulary is akin to wet markets.
- 9 The motorshop owner who agreed to fabricate my vehicle used to cannibalize Japanese cars in Yokohama junkyards that looked more like parking lots. All he wanted in life was a new TIG welder. He was a good mechanic and had a workable team, but he did not know how to operate a business.
- 10 One of my objectives in building a car from scratch was to prove to myself and others that the Filipino can build a decent car in a backyard garage. If it is any consolation, Henry Ford did exactly that in a barn, even without any academic degree in engineering.
- 11 This is opposed to the Biblical model of work vis-à-vis rest. In Genesis, we gather that the use of human faculties for the care of the environment and for human sustenance is called work; and rest is for the sake of work, not vice-versa.

12 Sen. Alfredo Lim made sense when he suggested that the government sell all its luxury vehicles to raise badly needed funds. The suggestion of the former top policeman, NBI chief, and Manila mayor that government officials should consider going to work on owner-type jeeps should not be taken as a joke. A reliable owner-type jeep sells for as low as P80,000 while the sport utility vehicles (SUVs) that our government officials and their bodyguards love to use cost upwards of P2 million apiece. Lim also shot holes at the argument that officials on owner-type jeeps would be very vulnerable to assassination attempts when he said that it is much easier to jump off or return fire from a jeep than from an SUV or a car. What Lim wants to impress on government is that there is no monopoly of ideas on how the government could save money. Yes, the government needs to save and scrape the bottom of the barrel first before thinking of slapping us ordinary people and barely-struggling corporations with more taxes.

[<http://www.manilatimes.net/national/2004/sept/06/yehey/opinion/20040906opi8.html>]

13 Now a registered trademark, it is an acronym for *Disenyo Pilipino Rurban Overland Excursion Vehicle*.

14 For further information on the prototype, email: disenyo.pilipino@gmail.com.

15 In 1997, the DTI launched the DRIVE Program – Developing Rural Industries and Village Enterprises. Secretary Pardo (<http://www2.mbc.com.ph/cgi-bin/mbc/loadspeech.cgi?speechId=1&speakerId=74>) says:

“As our centerpiece pro-poor, pro-countryside pro-SME program, DRIVE is DTI’s response to the challenge of grassroots empow-erment – by providing greater opportunities for investments, business and livelihood, jobs and self-employment. This is actually a “one-barangay-one product” program which encourages companies to focus development on specific products and maximize resource utilization.

We launched the Unlad-Buhay skills-building program – actually, also under the DRIVE umbrella. Unlad encourages home-based industries like food processing, weaving, candle-making, garments, toy-making, and décor-making.

We established a Philippine Branding System for our local products to induce a marketing cycle of awareness, trial and repeat. This system will employ advanced technology to set a standard for excellence. It will help our products become more competitive in the world market.

DTI remains committed to an integrated approach to development that is focused at developing and improving industrial estates and parks and special economic zones.

Our plan is to further litter the countryside with economic zones (industrial and agro-industrial estates). We will increase their number from the present 56 to 109, or 53 more lynchpins for countryside growth.

From all these action-driven initiatives, note that government in general, and we at DTI in particular, mean business. We dare shake up the status quo, we are rating risks – treading in areas where others before did not dare to tread.”

- 16 One wonders why such a celebrated event has been shrouded in confidentiality. Some suspect it is because bilateral and multilateral X-deals have been sealed under the table. Others say making too much noise could alert the big automakers, which may want to nip such exports at the bud. See also <http://www.newsflash.org/2004/02/pe/pe002871.htm> and <http://www.postcourier.com.pg/20060202/headlines.cgi>.
- 17 Some key institutions worth checking out are: Art Center College of Design, Pasadena, CA, USA (<http://www.artcenter.edu/carclassic/about.faces>; <http://www.artcenter.edu/accd/programs/undergraduate/transportation.jsp>), Institute of Applied Arts and Design, Torino, Italia (http://www.iaad.it/eng/dipartimenti_tra.html), and Coventry School of Art and Design, UK (<http://www.corporate.coventry.ac.uk/cms/jsppolopoly.jsp?d=1921&a=12703>). In the Asia Pacific, there are Monash University (<http://www.artdes.monash.edu.au>), Tokyo Communication Arts Car Design School (<http://www.tca.ac.jp/%7ecardesign/eng>), and Hong-Ik University (<http://www.hongik.ac.kr/col4.htm#3>).