

# Skybus Vs Metro: Mumbai Deserves The Best

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The city of Mumbai is almost synonymous with its train network, the backbone of its bustling public life. Mumbai's suburban trains are said to be the most efficient railway systems in the world. Its eminence & growing dependency has belittled the high price of human lives, the city is paying. In 2002, the Mumbai suburban railway system claimed 3773 lives, injuring 3,297 from the total 7070 accident cases. This means a death every 2.5 hours due to a railway accident in Mumbai, which is probably the highest in the world! Mumbai's bombarding train-passenger traffic of 6 million people is evidently being reflected in jammed foot-over-bridges on railway platforms and in railway rakes with people stuffed like cattle (by forced choice), challenging the walled limits. The commuting culture has deteriorated to such an extent that even a routine inter-city travel can prove to be a near life threatening, if not, fatalistic experience. It is quite nerve wrecking to dodge way or get stranded in traffic jams on Mumbai roads, which has the highest density of vehicles per km at 696, while that of Delhi is 137.

It is high time the city develops alternate modes of transportation to end its frantic dependency on the suburban railway system and limit any kind of force, whether natural or man-made, to easily victimize it. Rail and road accidents are only expected to increase unless the passenger & traffic load is curtailed, diverted or divided on an **urgent priority basis**. Maharashtra State Government in its recent pomp inauguration of Mumbai Metro for Versova-Andheri-Ghatkopar route, allegedly choose to snub superior advantages of alternative technology - Skybus, which could have brought a quick breather to the city. Seven years or even more is a long agonising wait, to get a Metro running in this city.

Sitting in a bogie and whiz passing the city, looking down on mere mortals stuck in traffic jams and hundreds pouring out of crowded locals as one glides through ... is not a scenario or a fantasy of one's imagination or an inspiration from a futuristic novel. Skybus is a "first-of its kind in the world" (even Shanghai doesn't have it), path-suspended (running below the tracks & 10 meters from ground), air-conditioned, mass & rapid railway transport system. The Skybus presents a perfect solution for escalating traffic woes in this most populous and space-crunched metropolis of India - Mumbai, where sq. ft. and headcount are antagonistic elements in its planning. If considered earnestly, indigenous Skybus can be a reality in the immediate future.

The state government's much-hyped Metro rail is being glamorised as having the desired & superior technology, needed to counter Mumbai's despairing traffic. But not many know, that the Metro, in technology terms, is same as Mumbai's very own local train, embellished with A/C coaches, swanky hi-tech platforms with escalators and modern communication systems, running in a tunnel or over a bridge - all of which adds to being extremely resource intensive & most of the times, a recurring loss maker. A news magazine recently reported that out of 135 Metro corporations in the world, only 4 are making operational profits. These include Singapore, Taiwan, Hong Kong & Delhi. Delhi Metro Rail Corporation (DMRC) too, is said to fall in the trap of loss-making corporations with **losses amounting to 76.33 crore annually**, as reported by a leading daily. Even with such widely accepted figures, it is outlandishly stupid by the government to brag about feasibility of the Metro, which exists as a huge drain on the exchequer, topped with external loans or government subsidies, with long period of financial returns (if any).

It is well documented that Metro has outlived its financial viability, forcing government to offer 20% of project cost as gap funding or viability-gap-funding (VGF) to lure the private operators undertake the project through BOOT (Built, Own, Operate & Transfer) strategy. For instance, Anil Dhirubhai Ambani Group has demanded Rs 650 crore (about 26.7% & higher than recommended 20%) of the project cost as VGF from the Maharashtra government for Mumbai Metro project. One may wonder why a private operator like ADAG have plunged into a less lucrative deal if Metro was to be financially unviable, as reports reveal. Well, it is neither corporate philanthropy nor building brand equity. Its motives are purely & ruthlessly business profit making. Since the company would operate the services before handing-over to the government, it would recover the costs by charging more from the commuters. Train travelers in Mumbai are all-out waiting to expend more for a comfortable air-conditioned travel. So it is like a perfect win-win for everyone with no room for any controversies. The question here is whether such a rosy scenario would be justified in the long term financial & environment health of the city & its citizens. Long-term viability of a project like Metro inflicts not only financial but also social and environment implications, all of which are essential pre-requisites for increasing popular phenomenon of 'sustainable urban development'. Not only the private contractors or the government but also the people most of who live in meager means and are highly dependent on public transportation, at least in this city, should benefit from a modern rapid transport system. The state government, already burdened with a 1,00,000 crore debt, is ploughing in public money for Metro and the public too is lured into its hype, knowing little that it will have to shell out much more once the project is operational. The mindset conforming that public utilities especially infrastructure projects can give minimal or no returns, needs to change.

Skybus offers a profitable proposition to the operator and cheapest travel to the commuters. Skybus model starts giving a return of 24% on equity from fare box collections within the first year of operation. For the commuter it only adds up to Rs 0.50 per km, drastically less than what has been fixed by the Metro at Rs. 6 for a 3 km route. It is a sorry state of affairs, when such layman's logic, cannot be comprehended by our supposedly responsible, intelligent and accountable people holding offices in state and apex infrastructure agency like Mumbai Metropolitan Regional Development Authority (MMRDA). Skybus involves **"no" financial commitment** through viability gap funding (VGF) on the part of the government; on the contrary, it attracts foreign direct investments (FDI). Government of Andhra Pradesh is in advanced stage of talks with Ministry of Urban Development & Konkan Railway Corporation Ltd for pursuing Skybus project for its capital city Hyderabad. A Malaysian business consortium is investing Rs. 20,000 crore in the project without a penny of investment by the State. The state government, in keeping with its legacy of aggressive reforms, has proven that clamour about its mass applicability & safety, although crucial factors, are always workable and can never become impediments, if committed political will exist to promote tested innovations like Skybus for mass benefit. Hyderabad has already snatched titles from Bangalore and Mumbai to be the most wired & cleanest city of India. Now, it may soon position to become the first city in the world to have a Skybus technology for public transportation. If Hyderabad had all the reasons to commission Skybus, Mumbai had even more desperate ones to do so but its political leadership found enough pretexts to reject it.

The claims of a technology like Skybus is coming from no amateurishly, new-aged prodigal source but from reputed, government-owned Konkan Railways Corporation Ltd. (KRCL) backed by engineer-scientist B. Rajaram, former MD, KRCL & alumnus of IIT Kharagpur who has spent 15 years in developing and commercialising Skybus technology. His anti-collision device is also a patented technology, vested with KRCL and is being progressively used for safety in modern railways. It is heartening to know that all the royalties, which the Skybus patent will earn through Rajaram's Atri Knowledge Embedded Infrastructure Lab. (P) Ltd., estimated by Pricewaterhouse Coopers at Rs

20,000 to 30,000 crore over 10 years with NPV of over Rs 8000 crore have already been written-off to the Government of India through Konkan Railways. Yet, the government seems captivated to the call of its key advisor, Mr. E. Sreedharan, the christened hero of the Delhi Metro project. Ironically, he had also headed Maharashtra Government's Panel, constituted to assess Skybus.

One must question why the government appointed such a heavily biased panel whose recommendations were well predicted? This was the second effort by the government to wear robes of a participative decision maker, the first one being the Indiresen committee, which too was supposedly constituted on the behest of Mr. Sreedharan. Prof. Indiresen, Former Director IIT Madras, who had headed the technical committee, considered Skybus technology in the development stage and not a finished technology for mass use. His report thus had killed its revolutionary potential for instant applicability. However, the report positively concluded that - "If very strict standards that some want to apply in this case (Skybus) had been applied in the case of Stephenson's Rocket Engine, the world would never have seen railways at all. We cannot live on borrowed technology (Metro) forever, and should learn to develop our own inventions, and for that reason, learn to place confidence in Indian technology." Committee's report reflects that although Skybus technology has impressed its members to pass all their stringent criteria, but it could not give a categorical 'yes' and stand up against the force backed by Metro. Based on such insider comments in the Indiresen committee report, the Ministry of Urban Development permitted the Andhra Pradesh government to go ahead with its Hyderabad Skybus Metro.

Policy makers can't get over the basics in the Metro-Skybus debate to look into some exclusive add-on features which only Skybus systems offers. Skybus creates bonus urban spaces at the rate of 9000 sq. ft per km of route through its Sky-tops that can be exploited commercially. Skybus modifications termed as 'Skycons' can carry container-loads & cargos from the heart of the busy ports or even directly from ships thus drastically reducing truck & trailer traffic on the roads. Skybus can be employed in city-keeping functions like garbage disposal and is even emergency-disaster enabled. The city of Delhi opted for Metro, because it didn't have any mass rapid transport systems in the first place, and heavy Metro installations suited its less-constrained, ample-land topography. There is no denying that the capital city underwent a transformation in the way it moves, but ditto doesn't apply to Mumbai as these cities inherently differ quite starkly. Mumbai has in-place a sturdy mass transport in its suburban railway system, ferrying millions of passengers every day. What Mumbai needs is a supplementary transportation system with similar capacity, catering to east-west connectivity & untouched routes like Lokhandwala, Versova, Marol, Bandra-Kurla Complex, Mumbai University and Powai. The Skybus would thus augment existing capacity, lower dependency on suburban railway and provide future allowances through easy scalability. It is significant to add here that Delhi had no choice when Delhi Metro was being contemplated; Mumbai fortunately has one, if it realises.

The proposed Metro route, initially from Versova to Ghatkopar is amongst the most choked one, characterized by intense traffic, narrow roads and dense population. There is barely any space in Mumbai to accommodate Metro with its monstrous structures in the middle of lean roads, requiring substantial demolitions & evacuations? Skybus can be built like a grid network on existing roadways and flyways, offering point-to-point connectivity, requiring **no land acquisitions** and can be made operational in interior of suburbs, within a span of **two years**. Skybus works on the principle of smaller units carrying smaller loads but at a high frequency, easily accessible from roads, just like a bus stop, since its stations are mere 40 meter long with no crossings and signals. Skybus thus, matches the passenger carrying capacity of 20,000 to 80,000 with that of a heavy Metro system.

Even if the opposition to Skybus over its comparatively lower passenger capacity than Metro, is to go by, it is still an all-round justifiable option for Mumbai owing to its record cost. Skybus in Mumbai would cost Rs. 60 crore per km, less than one-third the cost estimated for elevated Metro (@ Rs. 215 crore per km) and about one-sixth the cost for an underground Metro estimated at Rs. 400 crore per km. Some transport experts are even speculating on the total project costs of the Metro presently estimated at Rs. 19,525 crore, to be gravely under-projected while it may actually be three times higher by the end of its completion period, considering Mumbai's ground realities. In view of this estimate, for the same route length of 146 km in Mumbai, **Skybus can be achieved in about Rs. 6,000 crore, almost 1/12<sup>th</sup> the cost incurred for Metro. This is an alarming difference by any standard to re-consider the case of Metro for the city.**

The first & the foremost reason for rejecting the Skybus is that it is a technology in the mere developmental stage and hence it cannot be equated with more established technologies like Metro, is in itself, a malicious assumption. Skybus is not a scratch-to-finish technology but a simple modification of existing technologies & hence an 'innovation', not a true invention. The term used to ascertain the Skybus technology is - pre-certified (using same components as used in railways) and therefore it should not be dismissed on technological grounds. The pre-certified components in an integrated assembly of the Skybus system has already been granted world-wide patents & approved as 'technology mature & safe' for mass implementation by German Tuv Rheinland, internationally renowned for technical-viability testing for aviation and transportation projects like magnetic monorails. Also, Skybus is designated under the Tramway Act instead of Indian Railway Act, since it moves along the existing roads. Once Skybus comes under the preview of the Railway Act, it would receive RDSO (Research Design Standards Organisation) & Commission of Railway Safety certification of the Ministry of Railways since it uses all pre-certified components used in railways. Eminent scientists like Dr. Anil Kakodkar, Dr. P Ramarao and none other than President A.P.J Abdul Kalam, together with Commissioner of Railway Safety have endorsed Skybus to be superior & safe than conventional railway, ready for mass use.

Secondly, the Government of Maharashtra's assessment that the Skybus is untested for safety and preference for the Metro as a time-tested technology also needs a little more introspection. History is witness to numerous rail accidents taking death tolls and injuries since its existence. In 2005 alone, there occurred 30 train accidents worldwide, mainly collision and derauling, taking a death toll of more than 1,105 people and injuring another 471. In India, there have been as many as 17 major train accidents in the last 10 years in which over 1,300 people have died, mostly involving collision. Metro Railway too has been accident-prone when 11 accidents were reported, injuring about 207 people and killing one in 2005. Owing to the design features, Skybus is arguably much safer than railways since it can 'never' derail or capsize to fall on ground, because of a secured connection between tracks and coaches, a feature 'not guaranteed' in railways. An accident claiming one life, during the test run of Skybus in 2004, has been used as a chief ploy to promote Metro. Aren't trials meant for experimenting and factor all such contingencies? Skybus was initially was designed to be computerised and unmanned but post-trial it was improved to have a manual operator to control speeds. The accident also proved that even under high speeds, which caused a technician hanging at the door-less bogie to slam a pillar, the Skybus did not destabilise. Since the first trial of Skybus, 70 km trial runs have already been accomplished successfully. Very recently, the Konkan Railways have bagged the approval from Ministry of Urban Development to re-start the trial runs of Skybus, which was more or less grounded after the incident.

Mysteriously, the ‘R’ factor is seemingly conspiring against the aspirations of this great metropolis. Whether it is the (r)ain or the (r)iot or the recent te(rr)or attacks, these wheeling servers are brought to a halt. Met(r)o, with the ‘r’ factor, is nothing less than a financial bomb. Ironically, it is being marketed to be awaited – only to be detonated, drowning the state with more debts. ‘No government funding’ for Skybus while massive capital flows from official treasury makes for a political-convincing thumbs-up for commissioning Metro! Poor civic awareness and weak accountability systems are attributes well played by the ruling whip. It is therefore, quite unlikely that politicians and bureaucrats will face public wrath when soon other cities and even countries would embrace Skybus technology, rejecting the very pretexts, which were given for dismissing Skybus. Skybus is a potential world-class public transport system, an offering from India, becoming the object of interest & enquiries by many developed and developing countries.

Mumbai had the wits and the mettle to embrace Skybus technology, be crowned and make the world hymn its first glory. Ironically the city, complacently stepped aside as a flaccid witness while taking pride in bowing down to foreign Metro, progressively being promoted as a lone-saver-solution to urban traffic problems. Skybus is only kept at bay by prominent lobbyist & ‘procurers’ of Metro - a transnational, too strong and influential force to be resisted by governments who are in the rut of ‘foreign made is heaven made’, while harbouring skeptical intentions for better indigenous technologies. A promising, futuristic technology like Skybus seems unstoppable. It would soon be a paradigm for public transportation, to instrument change in perceptions & mindsets on the way people, commodities and services can be ‘moved’ in midst of urban chaos. Mumbai was blessed with a choice, which it failed to capitalise, at least at the ripest of time.

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