

JPODS FACT SHEET

10x

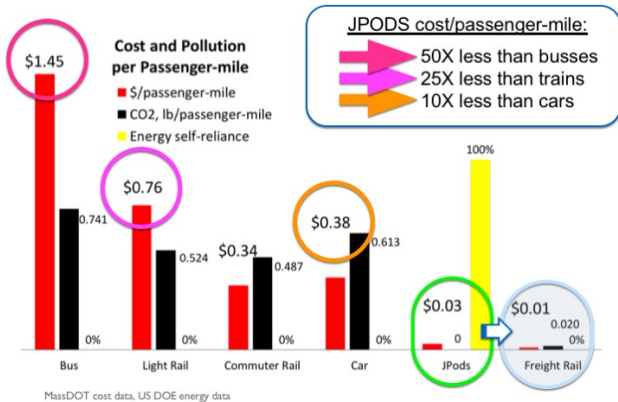
Driving a paradigm shift requires a ten times benefit (10x). JPods networks of self-driving cars on grade-separated guideways move people and cargo with [multiple 10X benefits](#) over of cars, passenger trains and buses. Solar collectors over the guideways gather 40,000 vehicle-miles of power/mile/day. Physical Internet® is our registered trademark for this digitizing of mobility.

PROBLEMS SOLVED

- **10X Energy Security:** Eliminates risks of oil wars and oil supply chain disruptions.
- **10X less Congestion:** Grade separates to preempt traffic defects.
- **10X less Pollution:** Eliminates CO2 production.
- **10X greater Safety:** Decreases injuries from 11,200 per million on roads to .9 per million on guideways.
- **10X less real estate:** JPods guideways add a new dimesion to urban lan.
- **10X less capital costs:** Construction costs average \$10 million per mile versus \$100 million per mile for light rail (10x).
- **10X cost savings:** Cuts costs per passenger-mile to \$0.03 versus cars at \$0.38 (10x), trains at \$0.76 (25x), and buses at \$1.45 (50x).

Profit by cutting costs per passenger-mile by 10x

JPODS



MARKET SIZE

- Transportation is the economy's circulatory system.
- Railroads will be the logistical arteries for freight as oil prices rise. The 140,000 miles of freight rail in the US average 476 ton-miles/gallon, 100X roads.
- Traffic costs Americans about \$1.7 trillion/year on 2 million lane-miles of urban roads. JPods networks about 4 times the freight rail miles or 1/4th road miles can convert into value about \$1 trillion/year of the \$1.7 trillion/year traffic costs Americans. The world market is about 4-7 times larger than the US market.
- Life requires energy. JPods solar collection creates a new market 6X better in Net Energy than oil.

BARRIER – LACK OF REGULATORY FRAMEWORK

- There is no technical barrier. The Personal Rapid Transit (PRT or podcar) network in Morgantown, WV opened the first example of self-driving cars on Oct 24, 1972. Tesla has 1.88 billion self-driving car miles.
- Congressaional study PB-244854, "Automated Guideway Transit", 1974, identified PRT as the solution to the 1973 Oil Embargo and urban traffic congestion. It also notes, page 41, the barrier to such innovations for "four to six decades" is Federal regulations.
- JPods created the Solar Mobility Act replace a century of Federal barriers with the widely used ASTM F24 standards. Tesla delivered it 3 billion auto-pilot mile by violating exising regulations.
- JPods' contract in Shaxian contract uses the ASTM F24 standards.

COMPANY DETAILS

- Bill James launched JPods in 1998.
- Patent #6,810,817, 2002, is for the use of distributed computer networks to move physical packets, the Physical Internet®.
- Company founders are mostly West Point graduates working to end America's foreign oil dependence.
- JPods has an A-level management team.
- Ownership: private.
- Self funded by the officers.
- Debts: Zero external debt.

VALUE PROPOSITION TO CUSTOMERS

- Cleaner: Zero emissions.
- Faster: Mobility of a chauffeured car without traffic.
- Safer: 10,000 times safer than roads.
- More Affordable: At least 10x less costly than all transport modes except walking and biking.

BUSINESS MODEL

- JPods modernizes PRT into the urban component of the Physical-Internet®. Hyperloop, self-driving cars, etc... fill other niches. Hyperloop publicity has greatly aided market awareness.
- JPods combine the efficiency of freight railroads with the on-demand service of the Internet.
- JPods' niche is highly repetitive urban transport of people and cargo in payloads less than 1,200 pounds.
- Early deployments focus on niches where there are a large number of shuttle vans. An example is networking airport terminals, hotels, parking, and car rentals into an economic community.
- JPods builds, then sells networks to Local Mobility Companies (LMC's) to own and operate. This model repeats the success in building the Transcontinental Railroads. **Nothing Like It in the World.**

JPODS FACT SHEET

EXECUTION

- Start small, iterate relentlessly.
- Delight customers, the fare box payers. Our customer are people, not governments.
- Use known cost of regulations ASTM F24 (Disney).
- Focus on niche solutions. Do not solve the world's problem, solve someone's problem. Build dense networks in niches with paybacks of 1-5 years.
- Start each network with a Kitty Hawk Network, ~200-meter commercial grade network.
- Strive for at least a 31% network density (the density of NYC subways). This density saves families a car payment per month.
- Provide a superior technology platform.
- Enlist strong local partners and alliances. Use ex-military networks. Leverage open source practices.
- Build with readily available components to minimize strategic supplier risks.
- Operate Local Mobility Companies (LMCs) with local ownership that focuses on local needs.
- Coordinate capital for LMCs to buy operational networks.

SALES

- Contract signed January 17, 2018 to build a network in Shaxian, China. Pending US manufacturing base.

PRODUCT DEVELOPMENT MILESTONES

- 1999 Established baseline technology – completed in 1999 and patent issued in 2004.
- 2006, completed 20 foot "garage quality" demo. Thousands of people have ridden in these demos.
- 2009 Developed a legal framework for deploying networks. Law in Secaucus, NJ in 2014. Pending as Massachusetts Senate Bill S.1993.
- 2014 completed 100 meters of "laboratory quality" demo.
- 2015 completed [Route-Time™](#) software that models networks and estimates travel times.
- 2015 completed JPods3D that provides 3D modeling into GoogleEarth.
- 2017 completed robotics for SkyRide.
- 2018 signed contract to build network in Shaxian, China. This institutionalized the regulatory framework and opens the market.
- 2019 Letter of Interest from Goldman Sachs
- Prepared many example networks:
www.GeorgiaMobilityCompany.com,
www.MassachusettsMobilityCompany.com
[and others.](#)

COMPETITIVE ADVANTAGES

- **Management Track Record:** Member have proven competences leading military operations,

manufacturing, logistics, process controls, power generation and high-tech companies.

- **Product Design:** Vehicles hanging from overhead rails (as opposed to riding on tracks) employs superior physics, solves congestion issues in cities, reduces energy consumption, and increases ride stability and safety.
- **Patents:** Patent #6,810,817, 2002:
 - **Networks of self-driving cars:** "A method of controlling a transportation System for moving people, freight, and any combination whereof using a distributed network of intelligent devices without requiring the aid of a human driver"
 - **Solar-powered mobility networks:** "The method... providing... Solar and wind power generators integrated into the physical Structure of Said transportation System...."
- **Scalability:** JPods demos have been set up and taken down hundreds of times with thousands of passengers. JPods networks are scaleable from desktop models students can build, to SkyRide, to airport networks, to entire cities. Systems are simple, polished, and sources of variation driven out by robotics and grade-separation.
- **Market Readiness:** With publicity from Hyperloop, markets have suddenly become aware there are alternative networks.
- **Hedgehog Concept** (Book *Good to Great*): **Passion** is for on-demand mobility as the physical manifestation of liberty; **Best in the World** at on-demand urban transport of payloads less than 1,200 pounds; **Metric** is profits per passenger/freight mile.
- **Paradigm Shift:** Gladwell's book, *Outliers* documents that it takes 10,000 hours, 10 years of preparation, to drive a paradigm shift. JPods' team has 20,000 hours of deep introspection into this paradigm shift exemplified by our creating a regulatory framework that has been adopted/pending in the US and China.

COMPETITION

- **ULtraPRT** (UK) Heathrow network opened in 2010 and has delivered 500,000 injury-free trips.
- **VectusPRT** (Sweden) is building in Korea.
- **SkyTran** (US) regularly generates some publicity.
- **Other small competitors**
- **Large company** competition from Amazon, Siemens, GE, Waymo, Tesla, etc. should be expected because of the large margins, scale of the opportunity, and government interface.
- **Self-driving cars** will have an impact. There will be niches where they will both augment and compete with JPods. JPods use less energy and self-driving cars can use existing roads.
- **ET3** and **Hyperloop** fits in a different niche and is an ally in opening the market.