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Let's do More with Less!

What Lies Ahead For The Domestic Transportation Industry

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Let's do More with Less!



Four questions come to mind?

- 1. Will we need anyone other than a few PhD's in Mechanical Engineering or Operations Research (design, manufacture, install, and maintain) to manage individual automated links in our transportation network 10-20-30 years from now?**
- 2. What will we do with the displaced workers?**
- 3. How much more efficiently will we utilize our existing infrastructure, as a result of the application of Hi- and Low-tech productivity enhancers?**
- 4. Which governmental entity will take the lead in quarterbacking this comprehensive effort?**

Hi- and Lo-Tech Productivity Enhancers (1 of 2)

Automated freight storage, order picking, and loading/unloading of trailers/containers/igloos?

- Facilitates 24/7/365 operations – reduces dead time and resulting inefficiencies
- Payback easier to justify with lower cost automation and higher hourly wages

LCV's/Higher GVW trucks? – are they finally coming?

- Marshalling yards an issue
- Overcoming opposition from rails, labor, and highway safety lobbyists will be difficult
- Safety is enhanced – less mobility – fewer vehicles
- Career path for best drivers

Autonomous trucks? When can we expect them?

- A few technological challenges to be ironed out to ensure fail safe operations
- Same opposition as LCV's
- Platooning to come first
- Controlled environments and rural grade separated highways to come next
- Combine B and C?

Hi- and Lo-Tech Productivity Enhancers (2 of 2)

Intelligent highways and optimized transportation networks are helping/can help too.

- Peak hour tolls/off hour incentives
- Ramp metering
- IOT alternate routing
- Reversible lanes
- Dedicated bus lanes
- HOV lanes
- Automated tolling
- Transit

Full range of last mile delivery options --- less dependent on one man/one automobile to/from brick and mortar store model

- Airborne warehouses
- Drones
- Parachutes
- Ground robots
- Pick-up points/lockers/automobile trunks
- Crowd sourcing alternatives
- Etc.

Out of the box thinking

- Airships
- Hyperloop
- Inland waterway system
- Alternative to double-stack for shorter/lower density intermodal routes

Benefits of Doing more with Less

- **Reduced environmental footprint**
- **Higher rates of return on reduced levels of public investment**
- **Lower cost of congestion**
- **Enhanced safety**
- **Economic development accelerates/increased tax revenue**

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