





SpaceWorks

COMMERCIAL

A Division of SpaceWorks Engineering, Inc. (SEI)

FastForward Study: High Speed Global Point-To-Point Transportation Investigative Group

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Given: Express Air Cargo Is Currently a Thriving International Market

- For example, FedEx Express (FedEx's air services) (about 20% market share)
 - \$20.7B revenue in 2007 (\$17.3B from packages, \$3.4B from freight)
 - By destination: \$7.3B international, \$13.4B domestic US
 - Average revenue per package is \$51 USD for international packages
 - About 400,000 international packages handled every day

Hypothesis: Faster service is desirable and is a future growth area

- What is the premium customers will pay or reduced delivery times?
- What is the volume of packages and freight that would select a faster option?
- Which is preferred, on-demand or schedule services?
- What are the key city pairs or aerospaceport pairs for this new service?
- What are the key enabling technologies and who will develop them?
- What are the political, safety, and environmental constraints?
- What requirements do the existing shipping companies/networks add?
- What are the issues associated with licensing and certification?

Fast Package Delivery: An Emerging Market for Suborbital Space?

Evolved Versions of Suborbital Personal Spaceflight Vehicles?



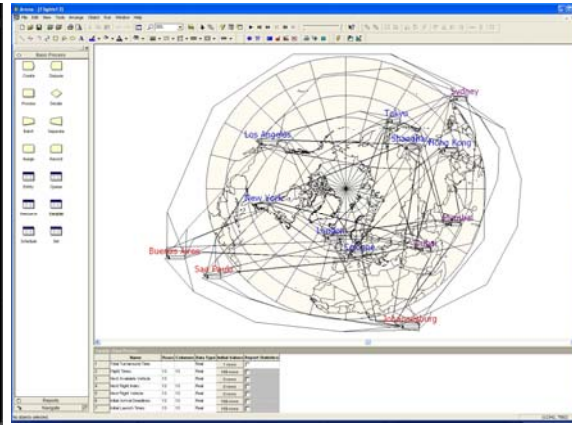
New Vehicles with Longer Range (Reusable or Expendable)?



Candidate Vehicles, Concepts and Service Providers



- A **pre-competitive** volunteer group of interested parties who maintain an active discussion of global high speed point-to-point cargo/passenger delivery markets
- **Public/Private** participation spanning entrepreneurial space, traditional primes, consultants, spaceports, and federal agencies
- Group started meeting in **October 2008**. Goal is white paper/position paper on this emerging market in 2009



FastForward Study



Spaceport
Associates



FastForward Study: Initial Participants

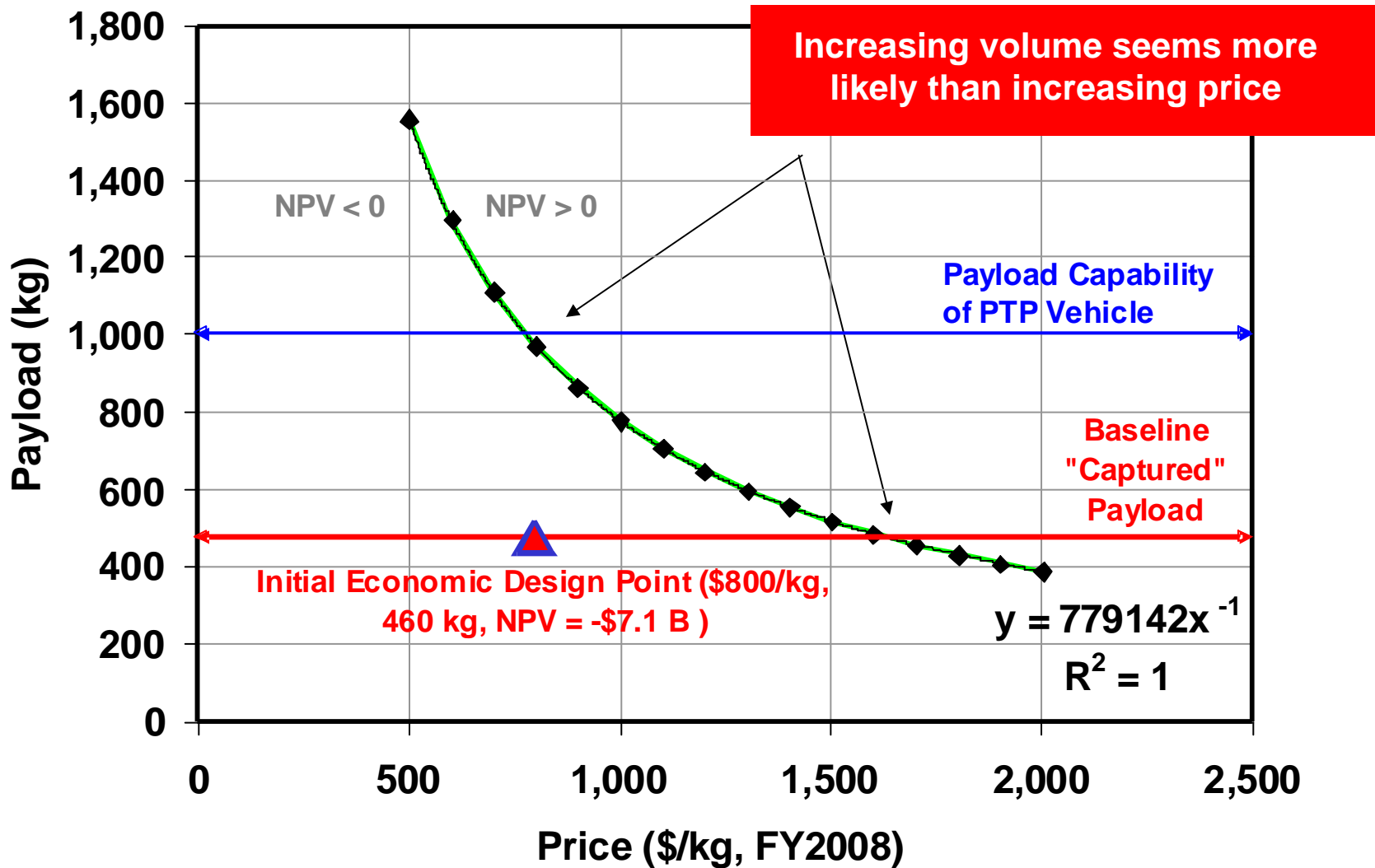


- Tier 1 Cities (7). Chosen as the initial study set based on current express package market sizes.
- Tier 2 Cities (3). Emerging regions that would be best candidates to expand the delivery network.
- Tier 3 Cities (3). Additional regions to result in more global capabilities.

Sources:

-Olds, J., Charania, A., Webber, D., Wallace, J., Kelly, M., "Is the World Ready for High-Speed Intercontinental Package Delivery (Yet)?," IAC-08-D2.4.5, 59th International Astronautical Congress, Glasgow, Scotland, September 29 - October 3, 2008.

Global City Pairs: Candidate Nodes in a PTP Cargo Delivery System



Sources:

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Initial Economic Results: More Work to Be Done

