

LEO Commercialization and Industrialization

What can you put on a camel's back, walk it from China to Baghdad or Constantinople and still make a profit?



LEO Commercialization and Industrialization

What can you put on a camel's back,
walk it from China to Baghdad or Constantinople
and still make a profit?



**High Value –
Low Volume**

LEO Commercialization and Industrialization

The Silk Road traders might have dreamed .. of ..



THIS



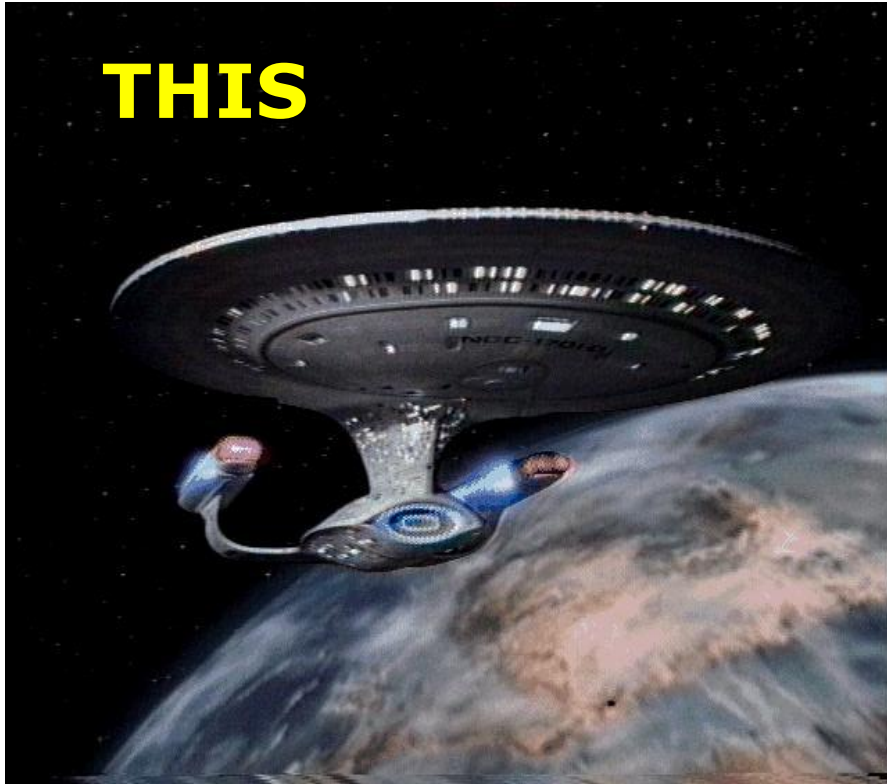
OR THE SUEZ CANAL

But these technologies were simply not available at the time, so they had to make do with what they had and turned a profit anyway.

LEO Commercialization and Industrialization

Just as we dream of

THIS



**OR OUR SUEZ CANAL
THE SPACE ELEVATOR**

Incidentally .. a British Suez Canal skeptic once said:

One thing is sure ... our local merchant community doesn't pay practical attention at all to this grand work, and it is legitimate to doubt that the canal's receipts ... could ever be sufficient to recover its maintenance fee. It will never become a large ship's accessible way in any case.

AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization

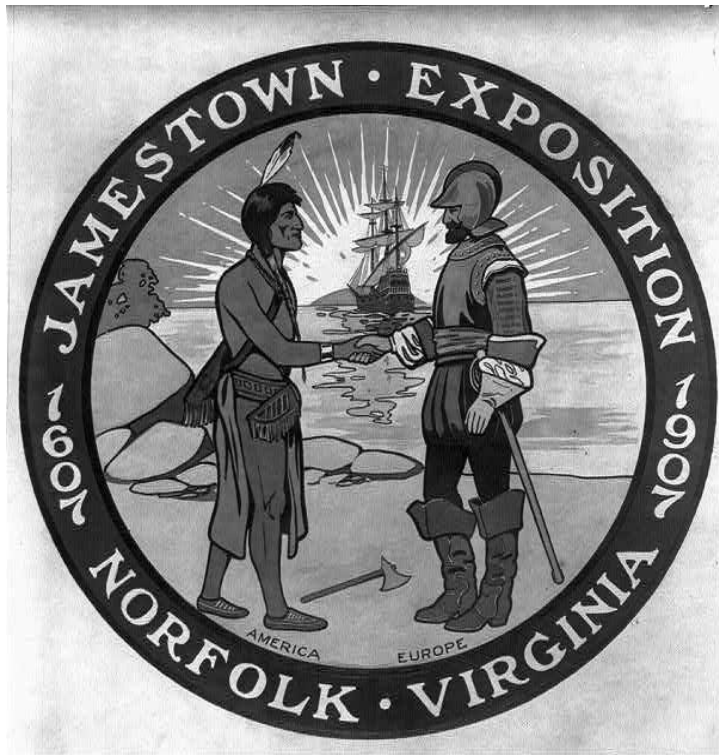
Why did the Roanoke and Jamestown colonies basically fail, even to the point of cannibalism?



Unsustainable, expensive support from England with no ROI for investors

AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization



**What can ISS learn
from the Jamestown colonists?**

LEO Commercialization and Industrialization

In a word ...Tobacco!

Jamestown only became successful when it became sustainable

Tobacco made Jamestown sustainable and profitable



LEO Commercialization and Industrialization

Here's our camel...



**SpaceX Dragon
and
DragonLab**

**With other
commercial operators
soon to follow**

AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization

Is this our Jamestown or Roanoke?



AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization

**So ..
Our tobacco, silk and spices
are staring us in the face!**

**But they'll need to be
profitable, commercial products ...
and that means engaging a variety of
industries ... many of whom believe that
space research is irrelevant or even
worse...ridiculous.**



LEO Commercialization and Industrialization

**We no longer need these sort
Of highly expensive, sophisticated, technical
devices to industrialize the frontier...**



**Governmental,
vanity projects, have their
place but they are not
economical ..**



AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization

We need something more like this!



AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization

**Well okay,
perhaps not a DC-3
but more like this!**



All helping to Close the ROI gap

AIAA Pasadena 2012
©Richard Godwin

LEO Commercialization and Industrialization

**On the supply side
we do need to reduce the cost
of access to LEO..**

I recommend that everyone read

**“LEO On The Cheap” ..
by Col. John London**

LEO Commercialization and Industrialization

**But more importantly:
On the demand side,
Remember to pitch at the
High Value Low Volume products that
we don't need to design new spacecraft
for in order to manufacture.**

**IP is the highest HV-LV
but don't forget biologicals, proteins,
materials and others...
ALL HV-LV**

The

Space Silk Road

is open to traffic!