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Thank you Ellen [Ochoa] for that gracious introduction. I also want to thank my long-time friend and colleague, Debra Facktor Lepore [President of DFL Space LLC] for moderating this session, and of course, Pat Hynes, the “force” behind this incredibly successful and important conference – thank you for continuing to invite me back!

Perhaps we can take it as a “hopeful sign” for the future that today’s opening includes 4 accomplished women – historically aerospace events have not been known for “having a line in the ladies room”... A theme of my talk this morning is actually how difficult it often is to usher in positive change. How those in establishment, typically do not give up their power and control readily, or easily, or without a fight... But I’m getting ahead of myself – we’ll get to that in a moment.

I do want you all to know how pleased I am to be here among so many friends – women and men alike... This is our “Cheers” bar – we know each others’ names – but we probably all have our own ideas about who is “Sam” or “Diane” or “Norm.” It’s great to come together every so often, but more importantly it is great to be here with people who are working every day to advance space activities and who understand the economic and innovative potential of a healthy, robust commercial space industry.

We are all here to learn from each other how we can even more effectively advance personal and commercial spaceflight – to create high-paying jobs and open up endless possibilities for our economy. Together, we are developing an industry that until recently had been largely science fiction, but that now stands poised to open this new frontier... this next chapter in human space development.

But first, a little background. As you know, in July, we witnessed the successful conclusion of NASA’s 30-year Space Shuttle Program. That was an extraordinary human accomplishment. Many of you played

important roles in that accomplishment and deserve the nation's thanks. But, contrary to what you might have heard, this marks the beginning, not the end of an even more remarkable story of human space development. (Churchill quote – this is not the end, or the beginning of the end, but possibly the end of the beginning). Our job is just beginning. With the support of the President and Congress, NASA has made a renewed commitment to human spaceflight, and we are taking the necessary – if difficult – steps today to ensure America's pre-eminence for years to come.

After all, it is NASA's Vision to reach for new heights and reveal the unknown, so that what we do and learn will benefit all humankind. So our priorities and plans are established, NASA will focus our programs to address new achievements... Our plan includes:

- A deep space rocket that will take our astronauts farther into space than ever before, coupled with the work already occurring on the deep space crew vehicle, the SLS and the MPCV
- ... will allow us to take the next leap into deep space exploration while at the same time creating good-paying U.S. jobs.
- The ISS will continue to be the centerpiece of our human spaceflight activities until at least 2020, and the research and technology breakthroughs aboard ISS will help enable our future travel to destinations beyond low Earth orbit, as well as to return real benefits to those of us who remain "at home"
- We've established a non-profit organization to manage our non-NASA research on the U.S. portion of the International Space Station so that we can more fully realize the research potential of this unique National Laboratory.

- Our destinations for humans beyond Earth remain ambitious: the President has established the goals of sending humans beyond the Moon for the first time, taking us to an asteroid and then on to Mars...expanding our human presence to new destinations, while driving innovation, technology and science.
- In addition, NASA Science achievements continue, with missions to Jupiter, the Moon and Mars; Dawn's orbit of a giant asteroid and MESSENGER's unprecedented data from Mercury is just beginning to be analyzed. We'll continue to undertake these world-class science missions to observe our planet, study the effects of the Sun, extend our reach throughout the solar system and peer even deeper into the universe. (revealing the unknown)...
- We're advancing aeronautics research, in partnership with other federal agencies, to create safer, more environmentally friendly, reliable and efficient air travel, including helping to develop the network for the Next Generation Air Transportation System, or NextGen. (reaching for new heights)
- These efforts offer new knowledge, new challenges and increased inspiration for the next generation of scientists, engineers and astronauts, providing increased opportunities for students to enter STEM fields – in turn – leading to new technologies and discoveries that will open markets, create jobs and provide economic growth.
- And finally...We're committed to having American companies, in partnership with NASA, send our cargo and astronauts to and from the International Space Station, rather than continuing to outsource this work to foreign governments.

In order to make good on our entire plan, this part of the plan **MUST** be successful. It is only through success in this program that we will be able to conduct more valuable Earth and space science missions

(we otherwise will be forced to cut future science missions, in order to pay for growing launch costs), success in this part of the plan will allow us to extend and fully utilize the ISS beyond 2016, and invest in deep space missions.

Maybe you have heard lately that a few people have charged that we are pursuing a “political agenda”. Well – here is our agenda. We are working to invest the Nation’s valuable tax dollars to assure a healthier, more competitive industrial base, that advances technology, provides more scientific benefit, and expands humanities presence farther than ever before, while creating new markets, new industries, and new jobs in order to advance our national security and economic future. This is our agenda...we are committed to it, we are proud of it, and we hope you will join us.

Here in the United States, according to a recent FAA report, commercial space transportation and enabled industries generated a total of \$208 billion in economic activity and employed more than one million people in 2009, with earnings exceeding \$53 billion. And that economic impact is only expected to grow. Again, this is our agenda.

As you all know, the partnership of government and industry in space development is not new. I just re-read an article written in 1961 by General Electric Chairman, Ralph J. Cordiner in which he encouraged a shifting of space activities from exclusively government hands into a partnership with the private sector. In comparing the then Soviet model to the United States he said, “The United States has its own more effective way of concentrating efficient effort on a technical project of importance to the national security. And that is for the people, through government, to determine the objectives to be attained, and then to turn over to the private firms that have the managerial and technical capacity to get the work done – using competition and profit-or-loss incentives to the maximum.” He added, “When the national need is clear, the partnership of government and industry in the United States can work technical miracles.” We can work miracles together.

He also warned of the dangers of too much government control... “looking into the future, when the space frontier has been explored and is ready for economic development, we might well find the area preempted by the government, which would then have most of the personnel and facilities available. This would leave the nation almost no choice except to settle for nationalized industry in space...I am not saying that government laboratories should be dismantled...the government needs a certain number of experienced technical men [remember this is 1961] to help make realistic choices as to future missions, to set high standards of performance, and to provide technically sound policy guidance... Hence a certain percentage – perhaps as much as 5 percent – of the technical work of the space program is best done in government laboratories... As we step up our activities on the space frontier, many companies, universities, and individual citizens will become increasingly dependent on the political whims and necessities of the Federal government...” But it is “the competitive system, with its profit-and-loss disciplines, that puts men and companies to the test as no other system does. It rewards the creative and the efficient...it provides a natural and effective system for the elimination of failure, complacency and delay. At its best, the competitive economy has a vigor, diversity, creativity and efficiency that no controlled economy can match....Government should do for the citizens, at their expense,

NASA's (not so) new plan will allow each of us to perform our appropriate roles... the commercial sector to play a larger role in Earth orbit logistics and operations so that the government can concentrate on researching and developing the deep capabilities necessary to take humans beyond low earth orbit to places we have never been before.

The ISS is now positioned to promote the growth of a Low Earth Orbit space economy by operating as a customer and a destination for U.S. companies capable of transporting crew and cargo into orbit.

While many of us are frustrated that we have not been able to advance this agenda faster, I would like to emphasize the strides we have made...strides that would not have been possible without all of you.

You all know that we have implemented a two-phased approach for cargo to ISS: Commercial Orbital Transportation Services (or COTS) to develop and demonstrate commercial cargo transportation systems; and Commercial Resupply Services (or CRS) to procure cargo resupply services to and from the ISS.

Our partners in COTS – SpaceX and Orbital – are making significant progress in developing and demonstrating their systems. And NASA is investing \$800 million in these efforts.

SpaceX and Orbital are also providing Commercial Resupply Services, including for the delivery of cargo to the ISS in the wake of the retirement of the Shuttle. NASA is committing \$3.5 billion in these efforts (if they are successful).

In the area of Commercial Crew transportation (or CCDev), NASA has conducted two rounds of competition so far, soliciting proposals from U.S. Industry participants to further advance commercial crew transportation system concepts and mature the design and development of elements of the system, such as launch vehicles and spacecraft.

The first round funded Space Act Agreements to Blue Origin, Boeing, Paragon Space Development Corp., Sierra Nevada, and United Launch Alliance. NASA invested \$50 million.

During the second CCDev competition, NASA awarded four funded SAAs that are currently being executed with Blue Origin, Boeing, Sierra Nevada and SpaceX. NASA investing \$338 million.

Compare that commitment – nearly \$5 billion – the '90s-era commitment of \$15 million to alternative access.

Last month we released a draft RFP that outlines a contract (I'm sure I'll hear more about this in the q&a) to provide a complete end-to-end design, including spacecraft, launch vehicles, launch services, ground and mission operations and recovery. We anticipate that one or more operational commercial crew systems will be available for the transportation of astronauts to and from the ISS – as well as the provision of rescue services -- by the middle of this decade. Again, success of this program will end the outsourcing of work to foreign providers.

While not a new idea, it should not be surprising that this increased emphasis and investment has now reached the stage where a real threat exists to the status quo. It is only natural that this success has “inspired” a negative reaction by vested interests. History is rich with examples of industries and entities in transition – those whose livelihoods and in some cases very lives were threatened by a new paradigm often choose the bitter fight instead of, or in some cases, in advance of, their own adaptation.

You have been calling yourselves “furry mammals” for decade. Well, I'm pretty sure that the dinosaurs devoured their share of furry mammals in their last fighting days. They were fighting for their very survival.

A more recent, and more positive example is obviously the personal computer. While the recently late Steve Jobs is revered by nearly all of society today... it wasn't that long ago that established computer companies fought bitterly against his inevitable advances. But IBM, and others are even more successful and healthy today – because they were able to adapt. This is the model we hope to adopt. We want a healthy, growing, robust and internationally competitive aerospace industry. And while we may be in about the “disco era” as a comparison to the computer industry... we are seeing quite a few “early adaptors” – we welcome you!

A more current, entertaining example of this often repeated tale is told in the book and new movie, Moneyball. In a conversation between John Henry, the new owner of the Boston Red Sox, and Billy Beane, the general manager of the Oakland A's in 2002.

Billy had almost won a championship with one of the lowest payrolls in baseball through a new statistical strategy that predicted and produced more victories with the use of undervalued ballplayers who had a knack for getting on base, than the existing expensive, time consuming and inefficient method of traditional scouting. It was a revolutionary new way of putting together a winning ball team.

As one might expect, this new approach was not so well received by baseball traditionalists, scouts, pundits, players and journalists. Sound familiar? John Henry – an early adapter – saw what Billy Beane had done in Oakland and was wooing him to bring that system to Boston. During their meeting Henry explained to Beane that he should understand why the baseball old-timers and standard bearers were fighting this new system. He explains to Beane that “A trailblazer – the first man through the gap – always gets bloodied whether it’s in business or politics.” He also reminded Beane that people who are used to doing things the old way will fight like hell to preserve their careers and the status quo. (In the movie he says “Billy, people go ‘bat shit crazy’ when you try to change.”) That’s what we are up against as we work to advance space development.

But, we should remind ourselves that today dinosaurs don’t roam the Earth, the computing power of a 1970’s mainframe exists in your i-Phone and every single baseball team in America uses some form of sabermetrics to recruit baseball players. It should be noted that those who adopted the trend 1st, gained the greatest competitive advantage.

Let me leave you with my top ten list – this year it is the top ten ways we will have succeeded 10 years from now...

10. Instead of “occupying Wall Street”, people will be “occupying space stations”... not only US astronauts, travelling on U.S. built and operated vehicles, but private researchers and tourists with a choice of orbital destinations.

#9. US Astronauts are leading an international expedition, travelling into deep space – on their way to an asteroid.

#8. The Webb Telescope has discovered a planet with a blue ocean orbiting a distant star.

#7. Public air travel is so efficient; it takes you less than half of a day to get to the ISPCS from anywhere... And on a related note... #6. The ISPCS has outgrown the “Ranch”, AND the El Cantato, and we now hold the conference in the Hanger at Spaceport America and stay at “the Whitesides” the new 5 Star Hotel in Truth or Consequences.

#5. Everyone on the planet has instant access to predicted space and Earth weather events, Earthquakes and climate activities on their hand held personal computer device – a program which saves thousands of lives every year.

#4. 98 percent of Earth-crossing asteroids are being tracked and catalogued by academia and the public, in response to NASA data being made fully available and crowd sourced.

#3. U.S. private enterprise is developing lunar resources to help establish outposts and bases on the Moon for scientific research and economic advancement. (By the way – Google Lunar X-Prize was won 7 years ago and now tourists are planning visits to their landing sites.

#2. NASA technology research has created innovative advances in fields as diverse as materials, biology and combustion – which has led a surge in US economic growth that is unprecedented... creating over 1 million jobs and \$1 trillion in revenue.

#1. And, the number one way we will know we have been successful in 10 years... The President of the United States will be the keynote speaker at the ISPCS (I will have finally worn out my welcome)... and SHE will be wearing fabulous boots as well!