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By Jim Hurd

Nanotechnology is absolutely fundamental to a majority of all non-digital products sold in the U.S. today - whether in semiconductors, defense applications or in consumer products.

As I have said for years, when we entered the micron era 40 years ago - naming a company "micro" or "soft" was the last thing you wanted - and yet a company named Microsoft became one of the most important companies in the entire world! Forty years later, nano is having the same fundamental impact, but very few people in the general public are hearing about it.

We are in a nano-enabled world. My battle cry to empower the average person is "Manage Your Own Molecules!" - whether its your biological molecules or the valuable physical objects you use in everyday life.

And yet many of our biggest U.S. corporations have dramatically reduced talking about nanotech in their products.

- Intel does not talk about its nanotechnology like it did in 2004.
- IBM talks less about it than it did ten years ago.
- Dupont does not talk nearly as often about how powerful its consumer products are enabled by nano-scale features.
- GE used to talk about nano as one of the five areas that were critical to its R&D future.
- Cosmetics companies have taken the "nano" label off some its cosmetics.
- Clothing sold across the US that had nano coatings to stop spills is not labeled that way nearly as much as it used to.

Many of these companies have cut back due to threat of litigation - from consumer groups who fear that any nanoscale product could affect the cells of their skin and tissue - and also from EPA litigation and compliance issues if the word "nano" is used to describe the benefits of their products.

Countries like Russia, China and Korea do not have the litigation from consumer groups and from environmental regulation that the U.S. has.

Nanotech in the U.S. was prominently featured ten years ago - but that died down after nano start-ups did not get successful exits for investors.

Now nanotech is primarily done by large U.S. corporations who can afford fifteen year time frames to exit their initial investment.

As a result - U.S. investors run the other way when the word nano is included in pitches to investors. Make no mistake about it - this is a serious, serious problem.

And our brightest young minds are attracted to make digital apps instead of breakthrough material innovations!

I am a longtime environmental activist and longtime moderate Democrat. We have to develop our economy while we protect our environment and our citizens.

As a protector of our environment, there also has to be an intelligent balance between regulation that --- on one hand does not do enough to protect the public and does not protect workers at nanotech companies -- and on the other hand regulation that is too heavy-handed and stifles industry, pushes our technology into foreign commercialization hands, and dramatically hurts US economic growth in the near term future.

Foreign governments and commercialization arms have many many times over many decades cherry-picked the best U.S. research and used it to finance large manufacturing initiatives with hundreds of billions of dollars - why? Because our government has refused to pick winners and losers in commercialization of breakthrough technologies - saying that it is a waste of government taxpayer money.

Well, commercialization of innovation is a messy and risky business - just look at the failure rate of the smartest and most famous venture capitalists!

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Let me tell you - when China gave \$25 billion dollars in interest-free loans to the five leading solar companies in China, that dropped the price of solar much much faster than any investor or expert could possibly imagine. That put US and German solar companies out of business.

Compare our regulatory environment to Europe - and we are reckless and fast.

Compare our regulatory environment to Asia - and we are asleep at the wheel.

We are a tortoise that is desperately playing catch up with competitors that can access large amounts of government monies. And when these governments lose billions of dollars - no one remembers a week later.

It is just the reality of the world today in Asia.

Get real - or stay home in your sandbox.

If you compare us to Europe you will be smug and complacent.

If you compare us to Asia, you will be worried at our incompetence to compete - because they play by very different rules!

So get over "*We in the US don't pick winners. We don't waste taxpayer money.*"

The countries that are growing stronger economically today do both of these. While the strength of their manufacturing economy moves past us.

We are relying almost solely on the strength of our digital innovation these days. We are naturally very strong there.

We can't just give up our manufacturing economy just because the financing rules have changed around us.

ONE SUGGESTION - Promote our nanotech commercialization successes to the public and the investor community

There are several multi-billion dollar successes -- but few people hear about them.

I consulted to the NNCO (National Nanotechnology Coordinating Office) in 2009 when OSTP asked where the winners in nanotech were - to justify all the Federal R&D monies spent in nano over the last fifteen years.

Two multi-billion dollar companies I recommended were Abraxis and First Solar.

Abraxis Bioscience, which was purchased nine months later by Celgene for \$3 billion - produced a nano-enabled drug for pancreatic cancer. Now some people said that this drug was not that much of an innovation because it was a drug that was simply reformulated at the nanoscale in a less toxic delivery medium than its predecessor. But when a study came out nine months later that showed the drug was absorbed 31% better than its predecessor - Abraxis was bought for \$3 billion within two weeks, which was double the market capitalization it had at the time the study results were announced.

One approach to help get the word out on the importance of nanotechnology would be to have public-interest TV spots on the power of nanotechnology products in successful U.S. businesses.

One of these TV spots could have the richest man in health care in the United States, Patrick Soon-Shiong, who founded Abraxis and who was prominently featured in two segments on Sixty Minutes last year, talk about the power of nanotechnology to enable our science future - and our economic future - as it did for his company, Abraxis.

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