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THOMAS MACKENZIE: Thank you, Peter. I want to apologize for our Corporate President, Wes Bush, who was supposed to be here but unfortunately fell ill and asked me to present his remarks. It's great to be here and have this opportunity to share some views regarding the nation's new maritime strategy, and about industry's role in moving it forward.

Certainly, the maritime strategy will underscore the vital role of many aspects of the capabilities upon which the future effectiveness of our maritime forces will depend. And once it is published, it will drive the identification of means by which to achieve these capabilities. These capabilities encompass the full spectrum of factors needed, such as the attraction of dedicated men and women to our armed forces; to the quality of their continuous training; and satisfaction with their careers. The scale, capability, and operational availability of our force-structure, the leverage of our international partnerships, and the competitive edge we enjoy through technological advantage.

Today, I'd like to offer my thoughts on just that last factor, and focus not on the specific strategy, but the cultural framework within which the strategy must be executed. Pragmatic strategy must be understood and even developed with full understanding of the cultures within which it operates. And often, the best strategies figure out how to help move the culture forward to accelerate the realization of objectives. The key factor I'll discuss today, is the Navy's rate of adoption of advanced technologies, and it's implications, and the nature of the government-industry partnership. To provide some context, I think it helps to take a look at the path we've traveled together with respect to technology and assess the implications for the future.

It was very clear, in the Cold War, that technological innovation would be a clear determinant of success. The government-industry partnership coalesced around this fundamental tenet. And the culture we all adopted held innovation as a fundamental value. This value was evident outside of this government-industry team, and has served to attract substantial talent to the service of this cause. The investment required to achieve success was enormous, but I think almost everyone would agree that it was entirely worth it. Following the Cold War, the government-industry partnership evolved in light of the dramatically reduced budgets, and the resultant view, that lasted almost a decade, was that we were somehow safe from the world around us.

The partnership evolved to have a much stronger focus on cost and risk containment, as there was little tolerance for any program perturbations from either a budget or from a national priority point of view. During this period, much human talent departed the government-industry team, and very little human talent entered. We have all seen the demographic plots that show the depth of this talent draw-down during the 90s. I would assert, though, that as a realization of the rapidly emerging and dynamically changing threat came to dramatically change our collective thinking in the early part of this decade, somehow we still have managed to be stuck in the same government-industry partnership model of the nineties. The emerging maritime strategy will certainly reflect the new threats and missions that the Navy, Marine Corps, and Coast Guard team must face in the 21st century. These threats and missions are complex, and demand the very best capabilities we can provide to the men and women who serve.

Our forces operating across the entire maritime domain, still face traditional missions, such as contending with regional threats, deterring or, if necessary, defeating a major resurgent power. But, in addition to such potentially hostile states, the United States and its allies must deal with terrorists, weapons proliferators, cyber outlaws, and other enemies of an open society.

Other responsibilities include securing the global economic commons, maintaining peace, and responding to humanitarian crises. As a mercantile nation embraced by two oceans

and several seas, we must have a fleet forward-deployed, with sufficient capabilities to carry out these multiple missions. Our maritime forces have certainly recognized that technical advantages are critical enablers for the future force-structure. As an example, the navy is championing distributive and netted operations as a cornerstone of the emerging maritime strategy.

This approach will give globally-dispersed joint and allied forces the network power that they need to address the whole spectrum of anticipated contingencies. Drawing on ongoing investments and sensors, platforms, weapons, and networks, the approach enables skilled operators to engage in transactions with others, distributed over great distances.

The network information they rely on is incredibly rich because it is provided by multiple platforms on the network. It is also relevant because it can be drawn on, selectively, by particular collaborating users, or groups, to fit their specific mission needs. This concept of operations affords the nation the ability to cover large areas of international sea and air space, counter widely dispersed terrorist organizations, and assist partner nations around the world. The approach will allow naval forces to rapidly aggregate and scale as contingencies require, and to deliver effects rapidly, even with distributed forces.

America will increasingly need such a network to defeat adversaries who adopt anti-access tactics that hold our forces at risk. And the technological advantages required will extend well beyond networking to the fundamental physical capabilities that determine the force structure itself. It is only by embracing distributed and networked operations that we can collaborate with others on the geospatial and temporal information that is essential to maritime domain awareness, and collectively engage with like-minded nations to secure the global commons and provide for theater security cooperation.

These capabilities cannot be designed with a view to today's threats alone. We must be able to scale up the performance of platforms and systems to meet future threats. Before long, U. S. maritime forces, operating in the Pacific and Indian Oceans, will face a much

greater possibility of being challenged by other nations. Much has been said about China in this particular conference. China, itself, has expanded its defense budget at double-digit rates every year for the last nineteen years. In addition, as the global marketplace makes sophisticated technology increasingly available, terrorist adversaries around the world have more opportunities to build the asymmetric war-fighting advantages that they seek.

To be ready for both these contingencies, we must have a technically superior U. S. force. To achieve this depends, first and foremost, on innovation. We will need creative breakthroughs that enable us to more fully integrate functions within and between platforms, and that help us to improve the platforms, sensors, processors, weapons, and networks that put it all together. I'm confident that this government-industry team is up to the task, but I would argue as part of the strategy to discuss this challenge, we must address the need to move beyond the government-industry model of the nineties that presently has decision space dominated by cost and risk containment. This part of our culture frequently manifests itself as technology aversion, as careers on both sides of the partnership are threatened or lost as a result of developmental problems and leading edge technology endeavors.

I need to be very clear about some definitions here, as it might be easy to misunderstand. There is a fundamental difference between risk management and risk aversion, but that difference is often ignored and the result can be an aversion to technological advances. Good program management is built on the discipline of risk management. And the best executed programs, especially those with substantial technology development, are those that aggressively manage the risk.

Our government-industry partnership often lacks adequate risk management disciplines. I would argue that our present value system, our present working relationship between industry and government has the needle set too far on the risk containment side and not far enough in the direction of risk tolerance. The situation needs to be corrected because long-term technological advantage will not be sustainable with decisions biased toward

risk containment. Developmental programs should be pursued in a work environment that motivates managers and engineers to try for creative, even novel, solutions. And let me add, this is the same environment that in today's highly competitive environment for human capital, that has the greatest likelihood of attracting and retaining the top talent we need to build our future.

When it comes to winning the war for new talent from our universities, we need to face the fact that the nineties model of risk containment is hurting us. There are many other enterprises out there known for the higher priority they place on innovation, such as the bio-tech industry. As a consequence, we are struggling to compete for the talent we need in the ranks of both the government and the industry teams. We must create a workplace that not only encourages imaginative reaches and thinking, but that also countenances honest failures. If you turn the clock back to the Cold War, in which we made such extraordinary advances in our military technologies, you'll see that we also had a fair number of failures. And we tolerated them, because we understood, with clarity, that the hard climb to ultimate success requires some acceptance of failures along the way. Therefore, taking a strategic view of our future maritime forces means being concerned with how rapidly we can exploit new technology advances, and how powerfully we can leverage them. And, as it has throughout history, the impetus of new technologies will prompt the development of totally new mission possibilities, bringing operational changes that can only be called revolutionary. We can only imagine some of these mission enablers today: autonomous operations, stealth technologies, laser weaponry, and further advances in cyber capabilities, just to name a few.

So, to make sure that our government-industry team continues to generate such revolutionary capabilities ten, twenty, or thirty years from now, we must take steps today to achieve a better balance in our culture between innovation and risk containment. In working together to develop systems that provide the needed technical superiority, we must seek the level of creativity that can deliver more capable and reliable solutions, even at the cost of sometimes having to change the path we take to capture that success.

By committing to this bolder orientation, we can exploit new technologies, develop systems that enable more effective operations, and sustain America's leadership in the maritime security environment of tomorrow. I appreciate the opportunity to share this perspective. Thank you.