

## **Slide 1 - Cover**

Core Concepts of Export Controls:  
Roles of Industry, Academia, and Government  
The International Science and Technology Center  
in conjunction with the Ministry of Investments and  
Development of Kazakhstan

### SEMINAR

« Export Control on Dual-use Materials and Technologies  
in Central Asia»

Astana, Hilton Hotel, 12-13 October 2017

Thank you for the introduction. It is a great privilege for me to participate in this seminar. I want to thank the Science and Technology Center in Ukraine, which has organized the seminar in conjunction with the European Commission. I also want to recognize the important contribution being made by all of you to this discussion and thank you for taking the time to engage with us and your neighbors.

Before I start, let me say that we see these next two days as being an active conversation, so if you have questions or want to provide an example from your own experience of something we are discussing, please do not hesitate to interrupt me or any of the other facilitators. We are

really here to listen to you and our role is mainly to stimulate discussion and thinking that may lead to future focused activities that serve your needs.

The expertise you represent is very impressive. We have participants from ministries, export control services, border security, chambers of commerce, scientific organizations, and universities. Before I start, could I quickly see who is here from universities? I highlight the universities because you really have two roles in our discussion: first, to think about how basic principles of export controls might be included in what you teach, and, second, to think about whether universities with science and research programs need to have their own export control compliance programs.

## **Slide 2 - Main Messages**

I will highlight three major themes in my talk:

- First, responsibility for developing and enforcing export control regulations rests with each nation, but requires:
  - Active involvement of economic partners (industry, banks, insurance)
  - Engagement by engineers, scientists, economists, and the academic community

- Second, because trade is at the heart of modern economies -- but has real security risks – it is important to learn from each other and share good practices and lessons learned through regional and international cooperation, including the academic and industry communities
- Third, cooperating with those who have long experience with export controls (US, EU, e.g. through ISTC and STCU) can accelerate implementation of effective practices

### **Slide 3** - The Evolving Context for Export Controls

Before I talk about this slide, could I ask how many here have some responsibility for developing export control policies or regulations?

We do not live in a static world and from an export controls perspective, it seems that governments are always trying to catch up to the rapid changes in science, technology, and ideas. As I was thinking of how to describe this situation, I came across a paper written by Tamotsu Aoi, who is an advisor on International Security Trade Control Department at the Japanese company Mitsui. I find his perspective very useful but am interested in whether you agree or not:

“Export control is political, multilateral, and event-driven. In other words, export control in each country is ever changing along with the changes in the security situation of the country, its region, and the world. This means that the export control system of each country has its own historical background. Indeed, a country like the U.S. has been implementing export controls as a means to achieving strategic objectives throughout its history. Therefore, it is much more interesting and important for us to know a country’s export control system from a historical perspective than just to know the present status. Doing so helps one to understand the system of a particular country more firmly, deeply and vividly.”

Tamotsu Aoi, Advisor, Overseas Matters, International Security Trade Control Department, Trade and Logistics Division, Mitsui & Co., Ltd.  
([http://www.cistec.or.jp/english/service/report/1605historical\\_background\\_export\\_control\\_development.pdf](http://www.cistec.or.jp/english/service/report/1605historical_background_export_control_development.pdf)) ; published by the Center for Information on Security Trade Controls (CISTEC).

## **Slide 4 – Export Control Chronology**

To illustrate the historical perspective, I found this chronological history of export controls. As you might expect, changes strongly reflect political and security developments.

- Shortly after World War II and the beginning of the Cold War, the Coordination Committee for

Multilateral Export Controls – COCOM – aimed primarily at restricting the flow of technology to the Soviet Union.

- Following the terrorist attacks in the United States in 2001, other export controls were put in place
- As you are very aware, as the DPRK continues to test its nuclear weapon and missile capabilities, sanctions that control trade and commerce with that country have been put in place.

The main point that I take away from this slide is that historically, export controls have been **reactive** – they are put in place in response to a situation or act that has already taken place.

One of the reasons we are here for this seminar is to think more about whether it is possible to be **pro-active** – to think about how to manage science and technology that could have strategic applications before problems arise.

## **Slide 5 - Export Control Motivations**

### National/International Security

- Obviously, no country, research facility, or company wants to spread technologies or ideas that could create

instability or threats to its itself, its region, or the world.

- Being known as a country, industry, or university that does not contribute to creating risk can have serious legal and political consequences that most try to avoid.

## Profit

- Another reason to become knowledgeable about export controls is to maximize the benefits of invention and innovation. Companies and other organizations including universities can do this, but have to comply with laws and regulations.
- We all want the results of our science and engineering to be recognized by others, but that comes with the responsibility of to ensuring that increasing trade does not reduce security.
  - There is even some thinking that insurance, interest rates, and other tools of business could be linked to export control performance.

## **Slide 6 - What is Controlled?**

Other speakers will discuss export control structures and control lists in some detail. I will just highlight here the general categories:

## **Military goods**

Tanks, guns and ammunition are examples.

## **Dual-use goods**

This is a challenging category. These are items that have both civil and military applications.

Example 1: certain substances used to control fires that are used in the construction industry can also be used to manufacture poison gas.

Example 2: Botulinum toxin is among the most deadly naturally-occurring neurotoxins. Arnon et al, "a single gram of crystalline toxin, evenly dispersed and inhaled, would kill more than 1 million people" (#Arnon et al, 2001). It is considered to be one of the six highest-risk threat agents of bioterrorism. In recent years, however, an increasing number of medical and cosmetic applications, including treatment for migraine headaches, muscle spasms, and wrinkles.

## **Strategic services**

This includes repairing and maintaining military or dual-use goods, teaching people or sharing knowledge about how to use them (which we refer

to as deemed exports), and supplying certain types of software.

## **Slide 7 - Who Makes the Rules?**

My personal view is that at the international level, efforts to develop export control regimes are quite a mess of different approaches. This is why the actions taken by each state, and the levels of responsibility assumed by industry and academia, are so critical.

That said, many nations model their laws and regulations on several important export control regimes:

- The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies
- The Nuclear Suppliers Group (NSG), for the control of nuclear related technology
- The Australia Group (AG) for control of chemical and biological technology that could be weaponized
- The Missile Technology Control Regime for the control of rockets and other aerial vehicles capable of delivering weapons of mass destruction

UNSCR 1540, which will be discussed later.



## **Slide 8 - Making Export Regulations Accessible**

Many countries have experience with automated export control systems. These can be updated to keep up with changes in national and international regulations and are accessible by everyone, not just larger organizations.

Major contributions are also made by non-government organizations, including universities. Earlier I quoted for a study done for the Center for Information on Security Trade Controls (CISTEC), a Tokyo-based non-profit NGO organization that supports Japanese industry activities through research and analysis on peace and security issues related to export controls.

In the United States, a number of NGOs contribute to the export control area. For 25 years, the University of Georgia Center for International Trade & Security [CITS] has carried out its mission to reduce the WMD threat to international security and promote economic development through safe and secure trade in technologies and materials that might contribute to the development of weapons of mass destruction (WMD). CITS has engaged students, companies and government officials in more than seventy nations.

## **Slides 9-17**

To illustrate some of the resources that are available, I have included a few slides from different official export control websites. I am not going to spend much time on these, but want to share them to give you an idea of how other countries manage their export control outreach.

The European Union has its eCustoms site, which offers a range of useful information and contacts.

The UK has a similar system that allows you to search for key words.

All of you have export control information available.

The U.S. Department of Commerce has a quite good portal that explains the export control process. Similar to many other countries, multiple departments have responsibility for different aspects of trade in the U.S. – the Departments of State, Energy, and Defense in addition to Commerce – but most questions can be taken to this portal initially for guidance on how to proceed. As you can see, you can reach many kinds of information here.

I think that the Decision Tree Tool is especially helpful as it guides you through a series of questions to help determine if the item you want to export may be controlled.

The main message here is that if you want companies to follow the rules, make the rules easy to find.

### **Slide 18 - Why Do Export Controls Matter?**

Many times, countries or groups seeking disruptive or destructive capabilities don't need obvious things. It may not be an exotic chemical or an entire missile. The key missing piece could be information on how something is constructed or a better understanding of metallurgy.

Countries like the DPRK clearly have developed their own capabilities, but they also had help. The United Nations published a report in February 2017 by the panel of experts responsible for reviewing the UN sanctions against North Korea. Here is the web address and it is available in all the UN languages.

[http://www.un.org/ga/search/view\\_doc.asp?symbol=S/2017/150](http://www.un.org/ga/search/view_doc.asp?symbol=S/2017/150)).

The experts concluded that the DPRK gets around sanctions with evasion techniques that are increasing in scale, scope and sophistication. New interdictions show:

- DPRK has the ability to manufacture and trade in sophisticated and lucrative military technologies using overseas networks
- The vessel Jie Shun was the largest seizure of ammunition in the history of sanctions against the Democratic People's Republic of Korea, and showed the country's use of concealment techniques, as well as an emerging nexus between entities trading in arms and minerals.
  - In this regard, the report revealed previous arms trading by DPRK and cooperation in Africa, including previously unknown types of cooperation on a large scale
  - It also showed that designated entities and banks have continued to operate in the sanctioned environment by using agents who are highly experienced and well trained in moving money, people and goods, including arms and related materiel, across borders.
    - It is important to note that these agents use non-nationals of the DPRK as facilitators, and rely on numerous front companies.

- Also important is the use of DPRK officials and diplomatic personnel to systematically play key roles in prohibited sales, procurement, finance and logistics.
- The report goes on to show how DPRK networks are adapting by using greater ingenuity in accessing formal banking channels, as well as bulk cash and gold transfers.
- And, despite the new sectoral bans adopted for the first time in 2016, the DPRK continues to export banned minerals to generate revenue.

The DPRK is not the only country to find ways around sanctions. Another example is Libya, which also had extensive and successful procurement networks. I remember visiting Libya in 2004 as part of our effort to engage former weapons scientists and engineers there. We were shown an unfinished laboratory at a biology institute that was filled with cartons of expired reagent. When asked why the reagents hadn't been used, we were told that the procurement network could only find this particular reagent, but it was the wrong material for what they needed to do. But Libya was much more

successful in other cases, procuring goods from Europe and elsewhere.

### **Slide 19 – What Can We Do?**

I want to thank Dr. Zanders for linking me to some excellent documents from the Organization for the Prohibition of Chemical Weapons, to which he made a major contribution. This gives us a useful roadmap to think about during our discussion over the next two days.

### **Slide 20 -- What You Do Will Make A Difference**

Governments and people who are determined to pursue certain capabilities can be difficult to stop. And we all communicate around the globe in seconds, transmitting information, imagery, engineering plans – almost anything can be shared. The management of science and technology has become increasingly difficult, and it is hard to anticipate whether new technology or inventions can be used for disruptive purposes.

Traditional international control lists and national legislation cannot keep up with the speed of innovation, so what can we do that will make a difference?

The academic community – in partnership with industry and government – can help look ahead and anticipate issues. Through education and developing resources, you can make an important contribution to global security.

**Slides 21-23 – University of Hawaii**

I am not going to spend any time on these slides, but include them to illustrate an example of a university that has established an Office of Export Controls in recognition of its responsibility in this area.

**Slide 24 -- Thank You For Your Questions and Discussion**

The next two days will feature a number of informative presentations and I look forward to the discussion and questions from all of you.

Thank You for Your Attention