Developing Cybersecurity Human Resource

-My experience from CS projects-

H.IDE
Senior ICT advisor

Japan International Cooperation Agency (JICA)

◆ ODA executing agency in Japan

- 96 overseas offices, Approx. 2000 staff members
- 150 countries and regions received assistance
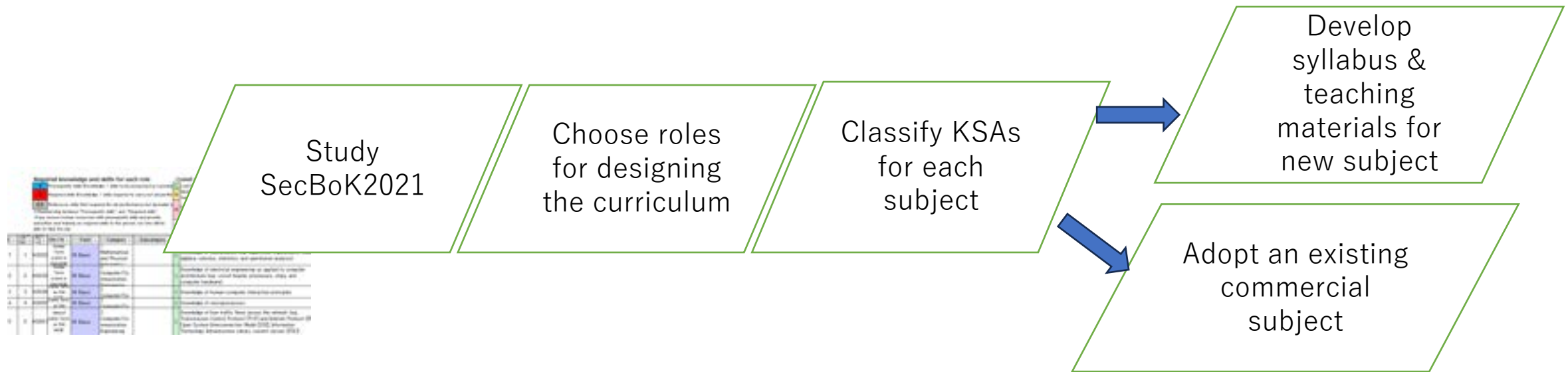 (Technical cooperation project, ODA loan, Grants)

https://www.jica.go.jp/english/

◆ Cybersecurity (CS) is one of the priority issues

- Two (2) JICA projects are on going for CS HR dev with
  'Universitas Indonesia'
  'Mongolia University of Science and Technology'

Dev. of CS curriculum in the Projects

Use 'SecBoK2021' as a curriculum <u>framework</u> to provide 'comprehensive knowledge'

Study SecBoK2021 → Choose roles for designing the curriculum → Classify KSAs for each subject → Develop syllabus & teaching materials for new subject / Adopt an existing commercial subject

- 16 roles and 1145 KSAs developed by JNSA
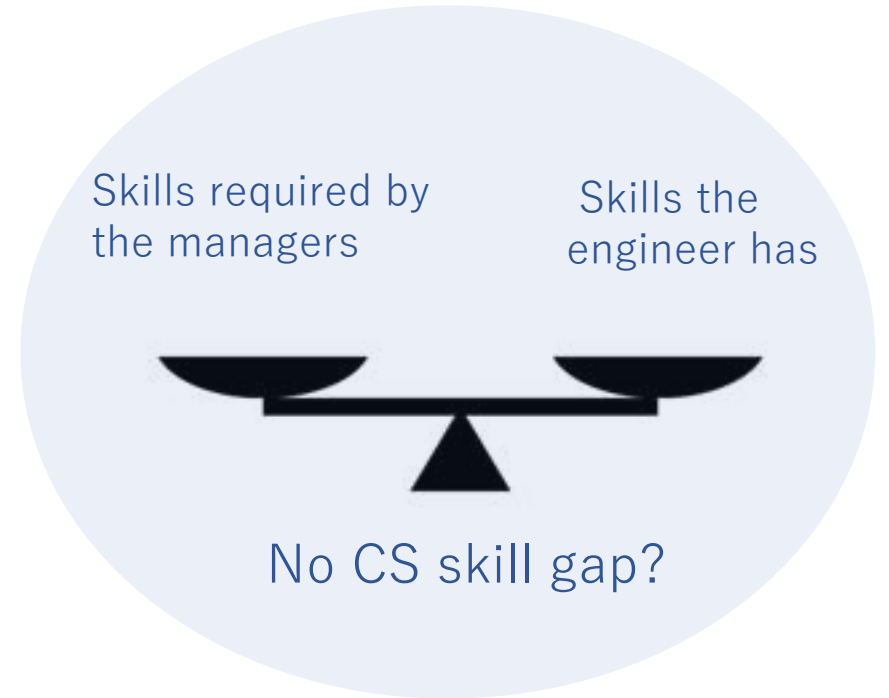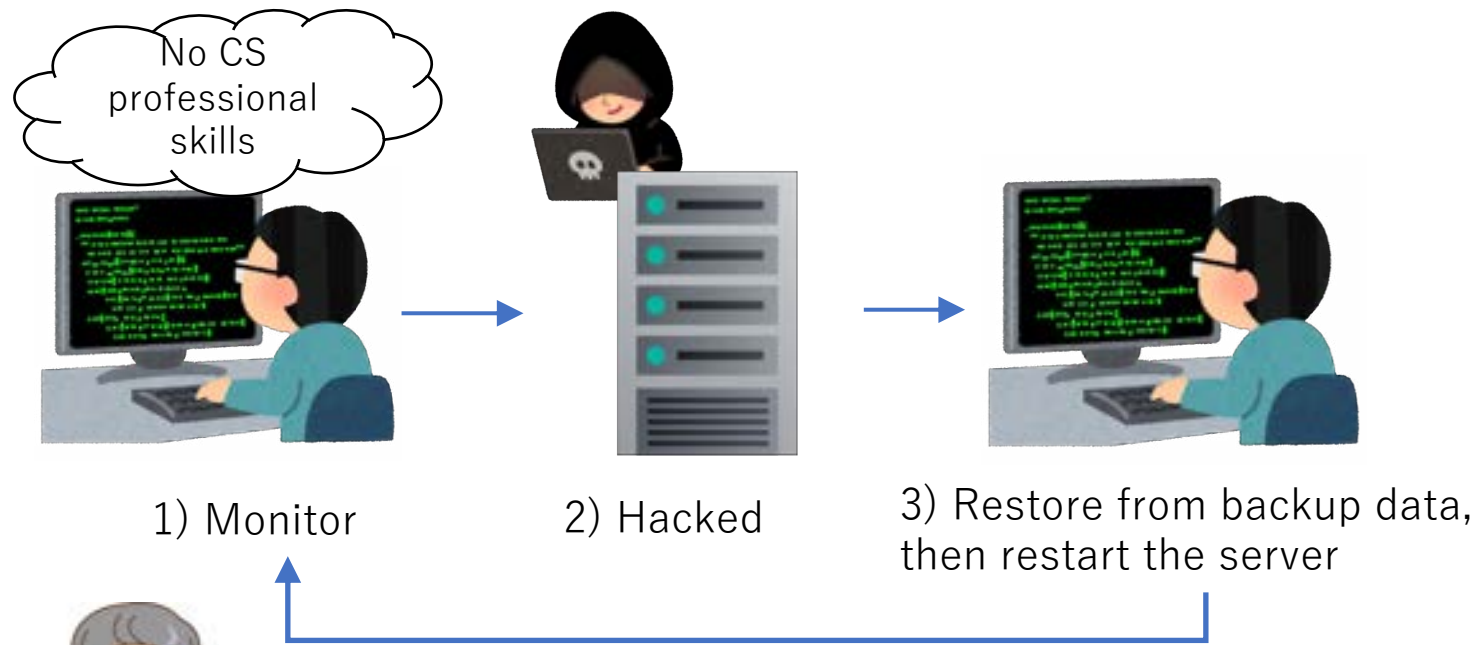- Linking to NIST SP800-181 rev.1 (NICE Framework)

Message (1)

Choosing an appropriate CS skill framework is a key to developing a comprehensive CS curriculum

- **Design curriculum with a CS skill framework → Supply driven approach**

- **Design curriculum based on the CS skill gap in workplaces→ Demand driven approach**

In an organization..

No CS professional skills

1) Monitor

2) Hacked

3) Restore from backup data, then restart the server

Skills required by the managers

Skills the engineer has

No CS skill gap?
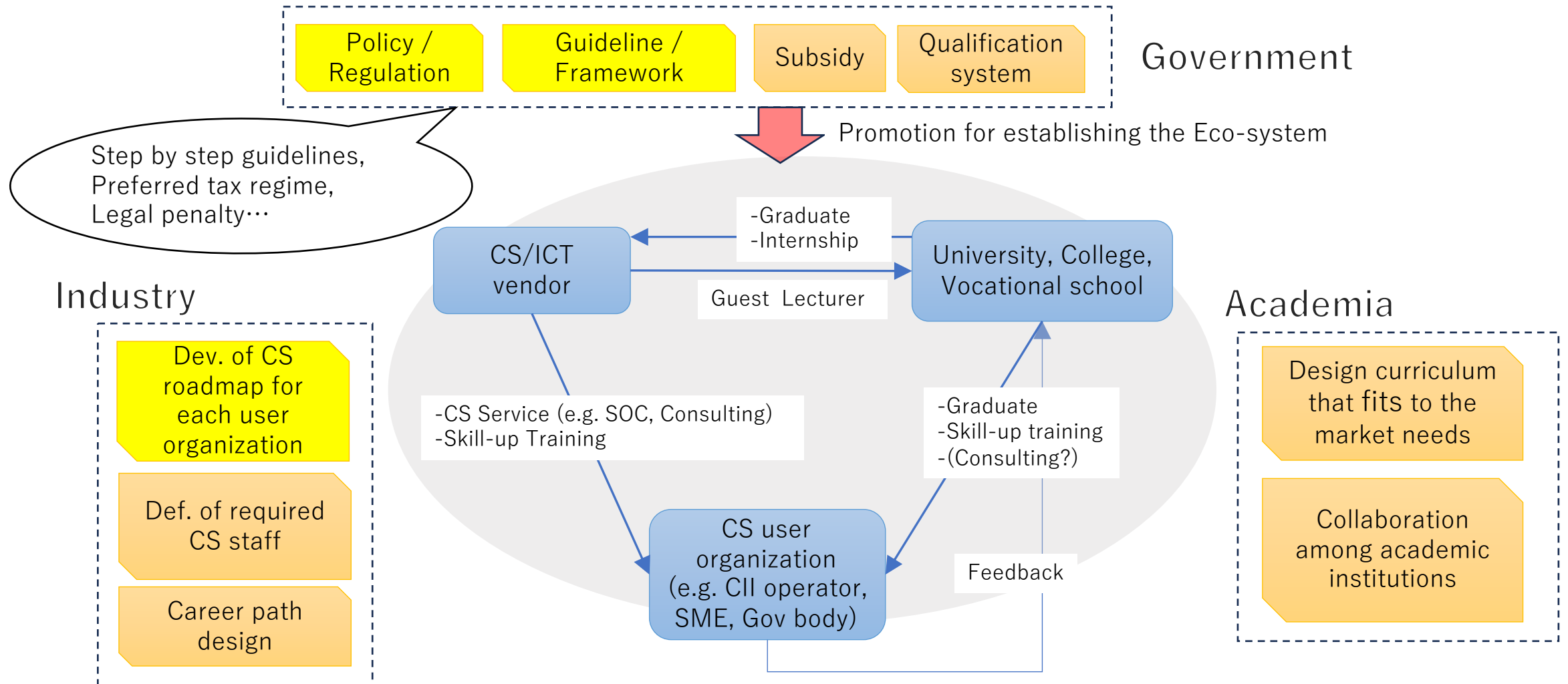
One day system down?
Legal penalty /Social sanction?
Why investment to CS?

Identifying the CS skill gap in an organization, a CS roadmap (Action plan, Policy) should be in place, but how?

CS HR dev. eco-system

Government

Policy / Regulation

Guideline / Framework

Subsidy

Qualification system

Promotion for establishing the Eco-system

Step by step guidelines, Preferred tax regime, Legal penalty…

CS/ICT vendor

-Graduate
-Internship

Guest Lecturer

University, College, Vocational school

Industry

Dev. of CS roadmap for each user organization

Def. of required CS staff

Career path design

-CS Service (e.g. SOC, Consulting)
-Skill-up Training

-Graduate
-Skill-up training
-(Consulting?)

CS user organization (e.g. CII operator, SME, Gov body)

Feedback

Academia

Design curriculum that fits to the market needs

Collaboration among academic institutions

Message (2)

- Once the eco-system established, required skilled CS HR will be developed continuously.

- Rotating the cycle of eco-system, stimulating CS user organizations is crucial because they have information assets to protect.

- End of slide