



# Retrospect and Future of ICT Security Development in Taiwan

Science and Technology Advisory Group  
of Executive Yuan  
18 August 2009





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**I. Foreword**

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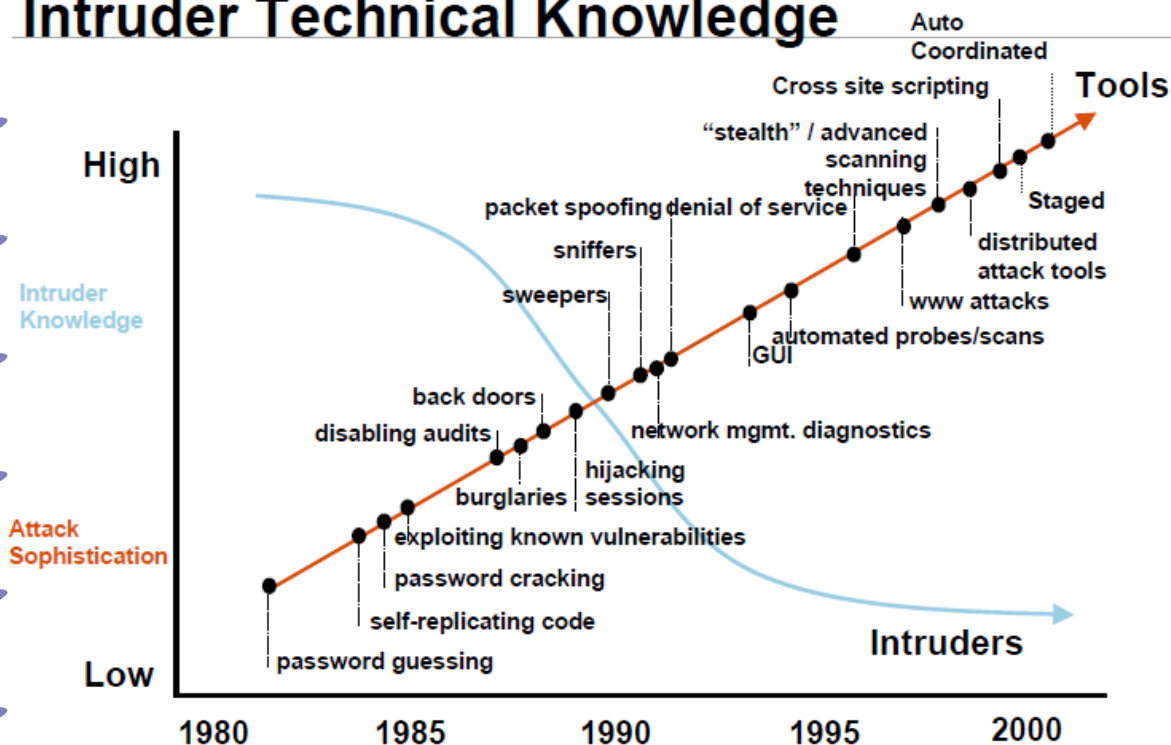
**IV. Prospective Outlook**



# I. Foreword: Paradigm Shift of Security Threats

- More sophisticated attacks
- Lower threshold of intrusion technical know-how
- Target shift from Mainframe/server to PC
- More efficient attacks
- From individuals to professional hacking organizations
- Motivation shifts from flaunting to political & economic purposes

## Attack Sophistication vs. Intruder Technical Knowledge



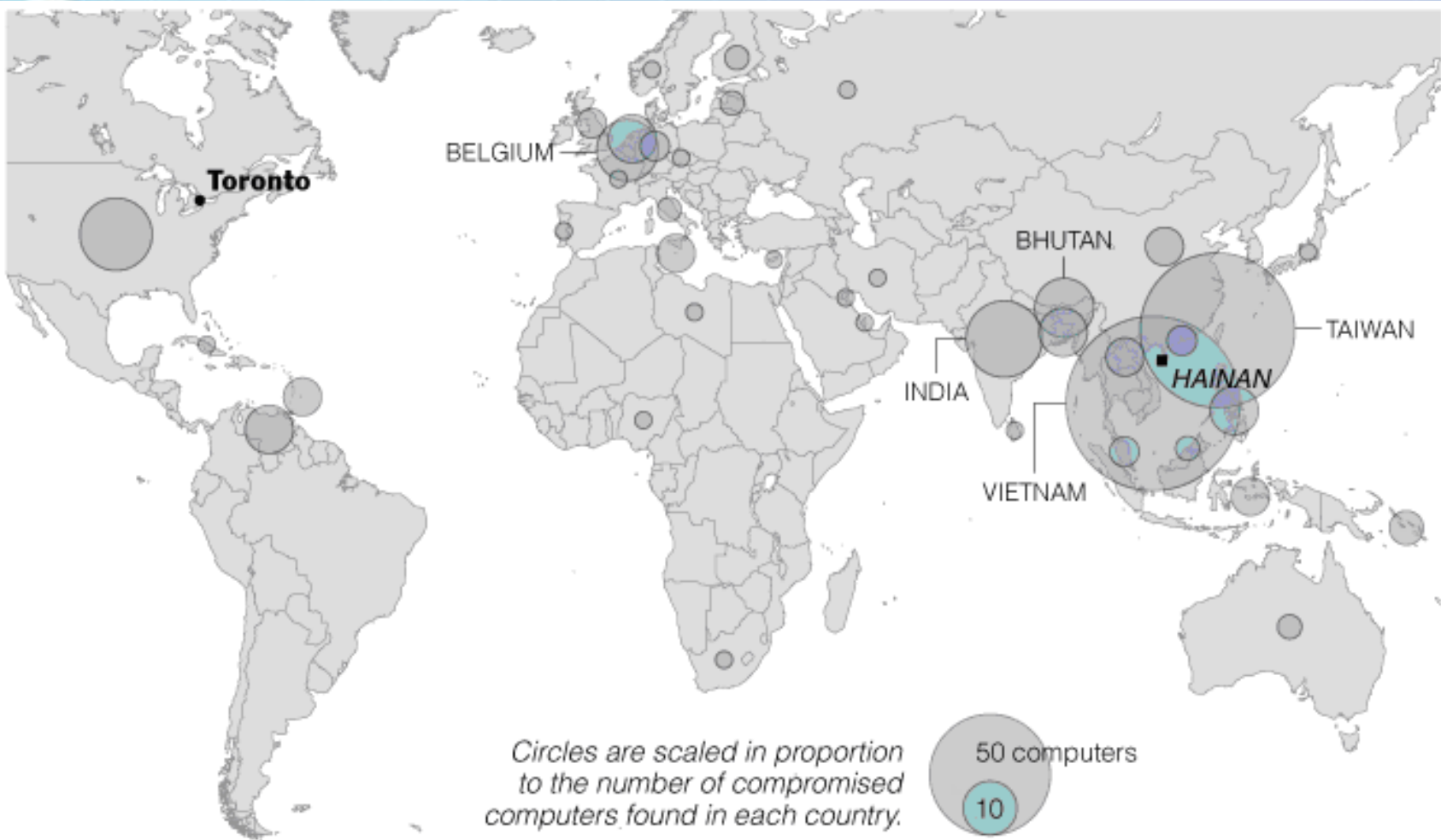
2006 Carnegie Mellon University

4

Source: CERT/CC Vulnerability Discovery Report, July 2006



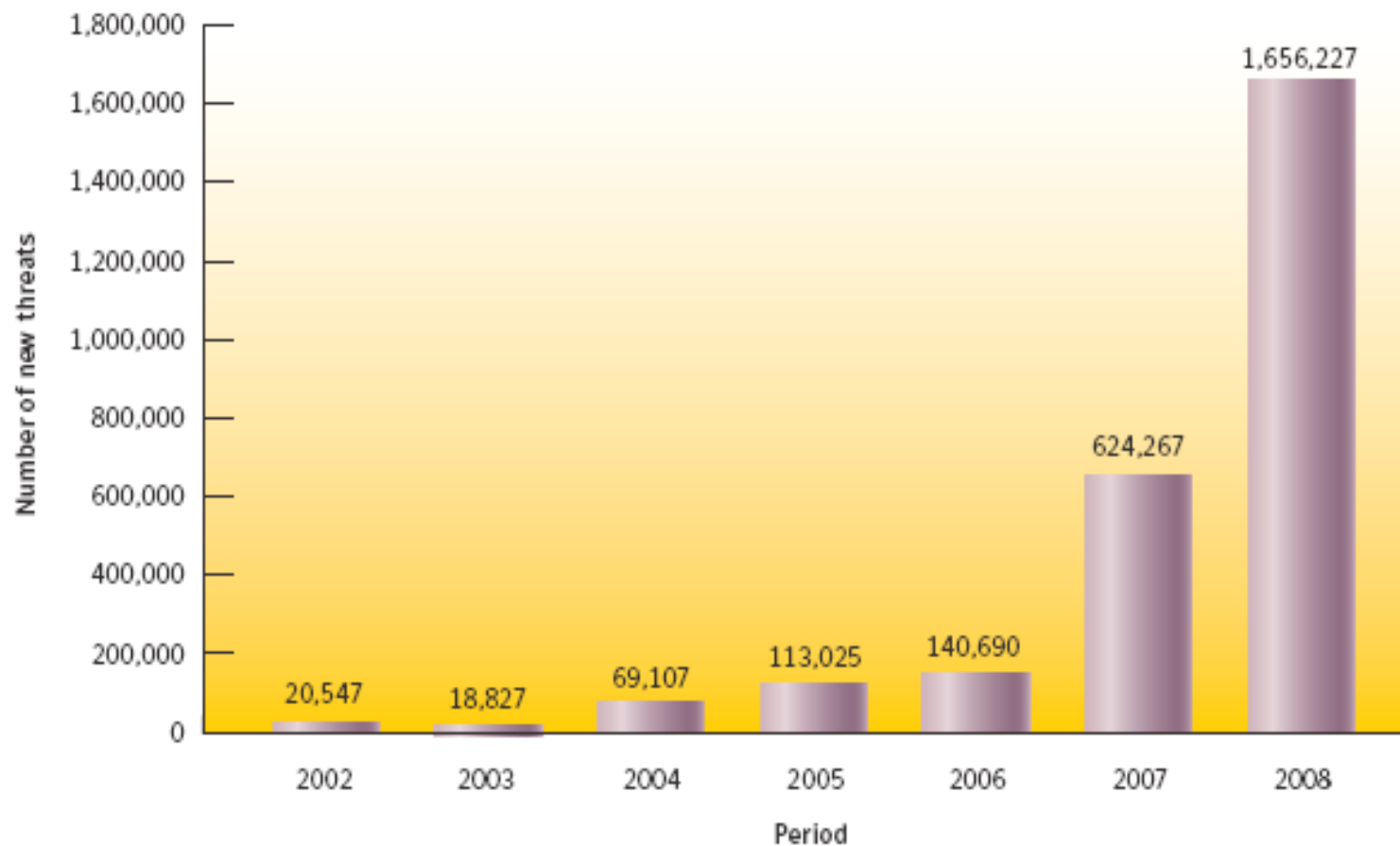
# Intensity of Internet Attacks



Source: Information Warfare Monitor, The New York Times, March 2009



# Information Security Threats Grow Exponentially



Source: Symantec Global Internet Security Threat Report, Trend for 2008, April 2009



# I. Foreword: Countries Began Promoting Security

(1973)

Sweden

Act of 1973

(1984)

USA

1984

Computer Fraud and Abuse Act

1987

Computer Security Act

1992

Computer Security Training Policy

1998

Critical Infrastructure Protection

1999

Security of Federal Automated Information Resources

2000

Global and National Commerce Act

2001

Patriot Act

2002

Information Security Management Act

2003

National Cyber Security Strategy

2004

CAN-SPAM Act

2005

Privacy Act

Information Protection and Security Act

2007

Spy Act

Computer Spyware Protection Act

(1987)

Finland

Personal Data Act

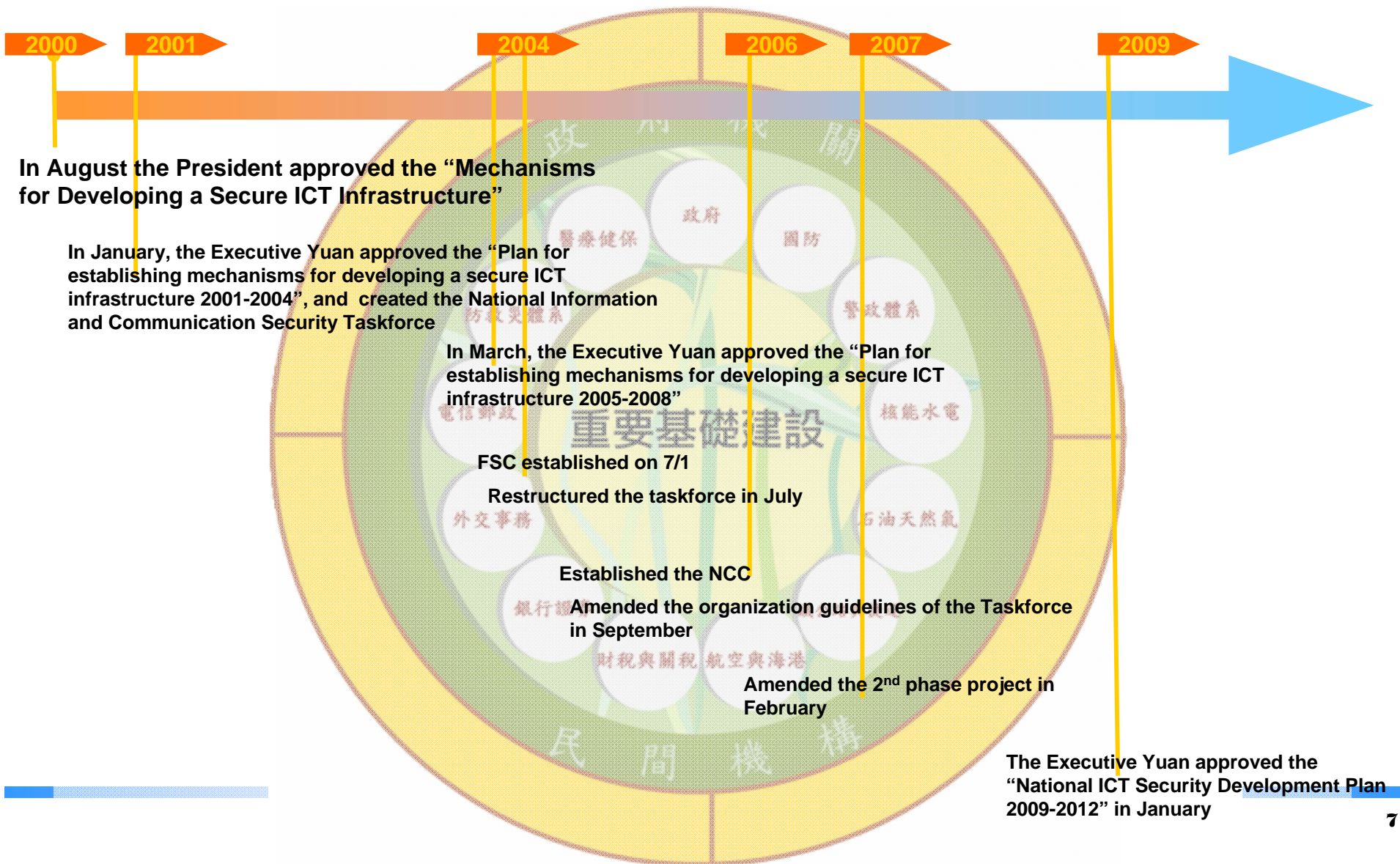
(1993)

UK

BS7799 PART I



## II. National Information Security Promotion Plan



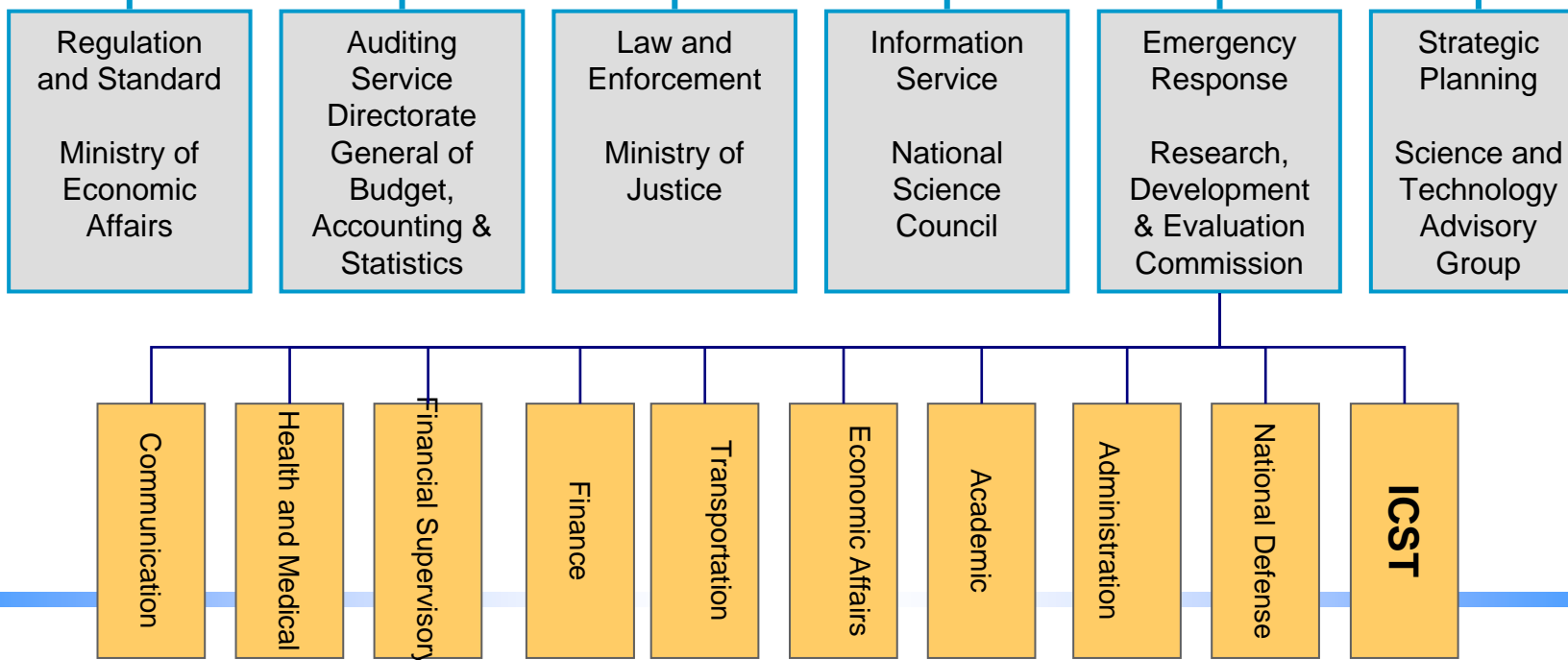


# National Information and Communication Security Taskforce

National ICT Security Consultation Group

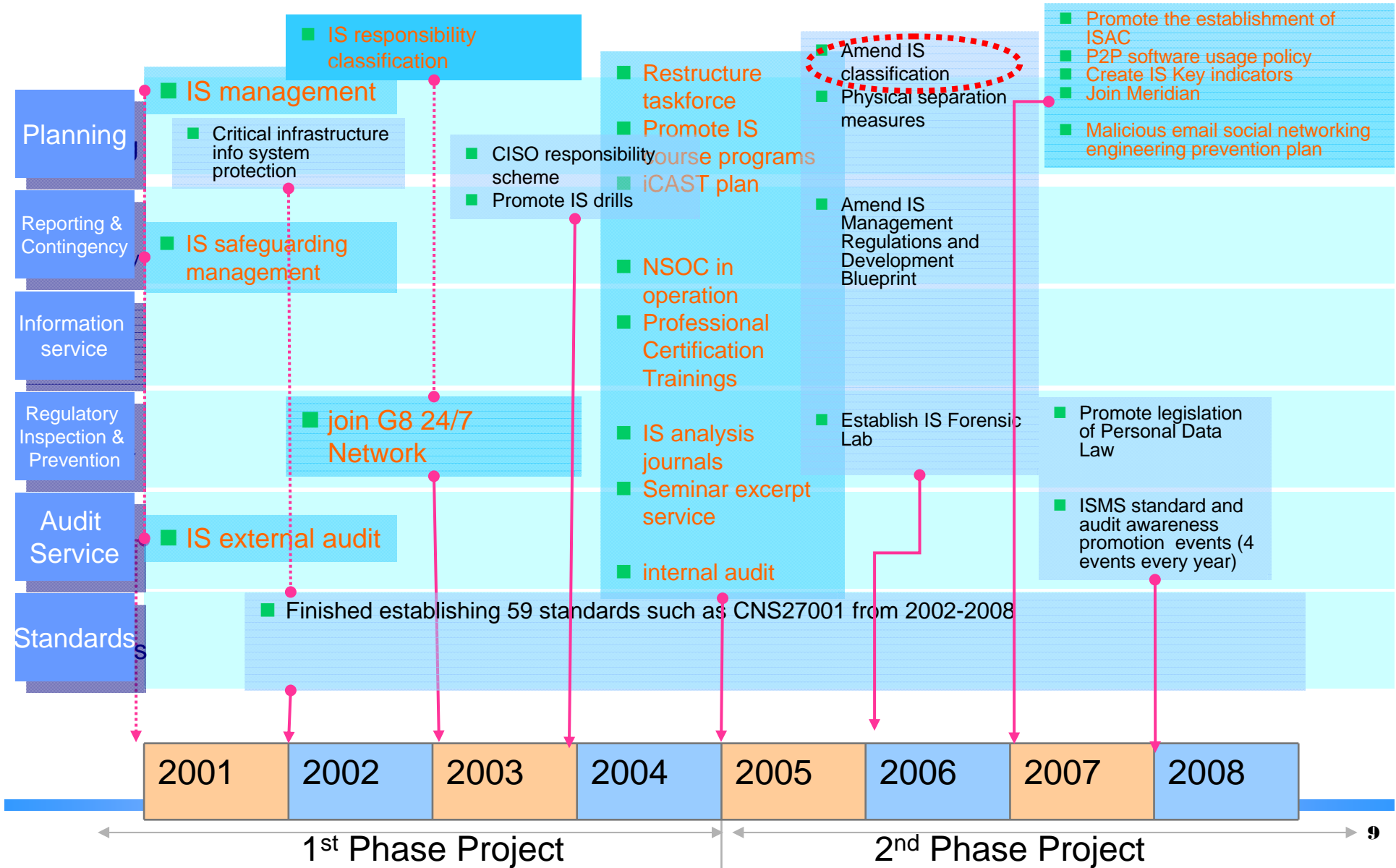
## National Information and Communication Security Taskforce (NICST)

Convener : Minister of Science and Technology  
Co-convener : Minister of Research, Development and Evaluation Commission





# Major IS Measures and Regulations





# Level A/B Agencies Accomplishment and Drill Results

Items Level, Year	Build SOC	IDS	Firewall	Antivirus	Mail Screening	ISMS Verification	Internal Audit	Professional Certification	Education and Training				
									Supervisor	Supervisor	Tech Staff	General Staff	
<b>A Level (58)</b>	<b>2007</b>	79%	100%	100%	100%	NA	66%	41%	92%	48%	46%	51%	34%
	<b>2008</b>	91%	100%	100%	100%	95%	90%*	86%	98%	57%	54%	66%	40%
	Growth Rate	15%	-	-	-	NA	36%	108%	7%	19%	17%	29%	18%
<b>B Level (316)</b>	<b>2008</b>	44%	93%	98%	100%	95%	43%	79%	93%	61%	56%	70%	46%

\*Completion rate is 83% if determined by the scope of introducing ISMS into core business.

Item \ Year	2004	2005	2006	2007	2008
IPs Attacked	18,960	13,954	21,888	21,888	37,525
Successful attacks	228	117	123	65	62
Success percentage (%)	1.2%	0.84%	0.56%	0.3%	0.17%

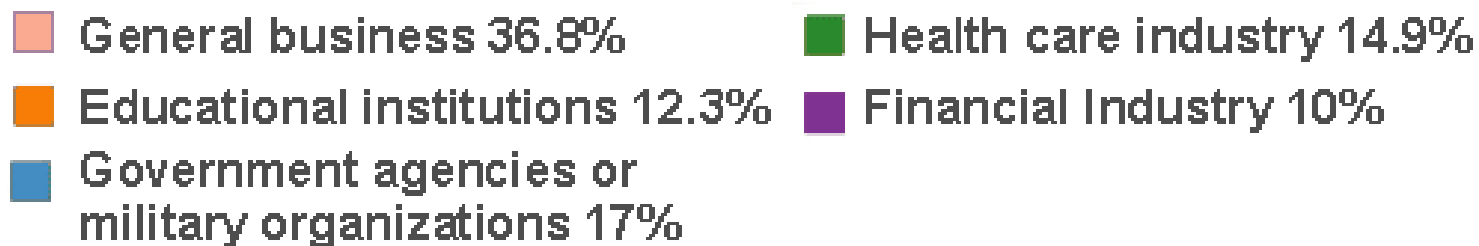
# III. Opportunities and Challenges





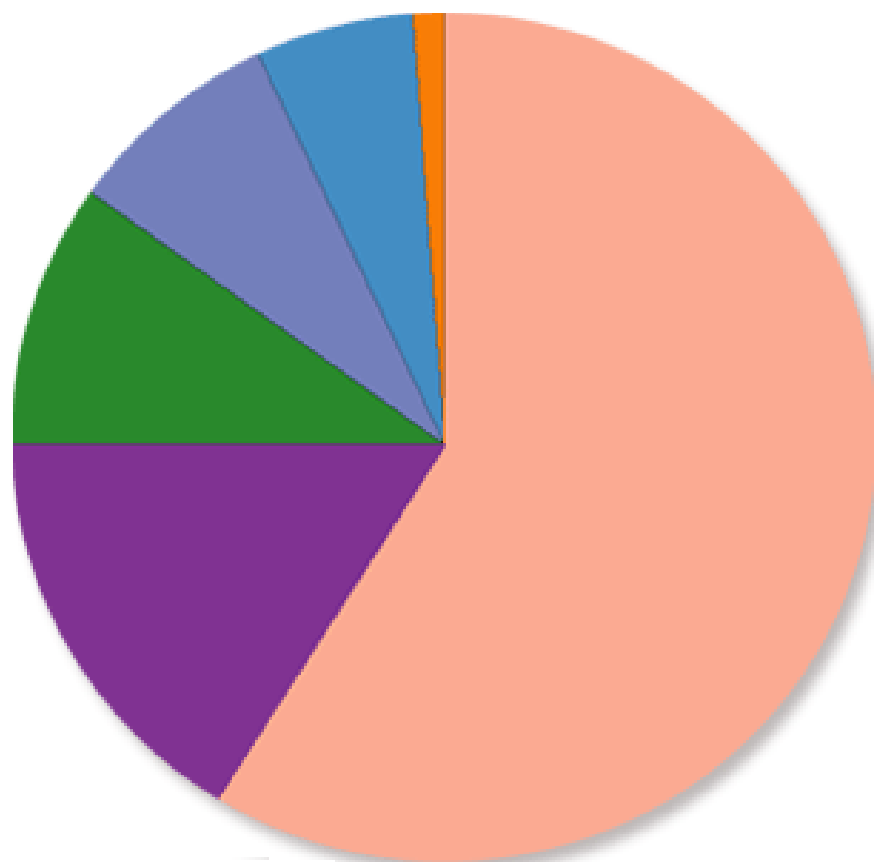
## Personal Data Leakage Common around the World

**ID info losses between Jan-Aug, 2008,  
according to sector**





# Vibrant Underground Internet Economy

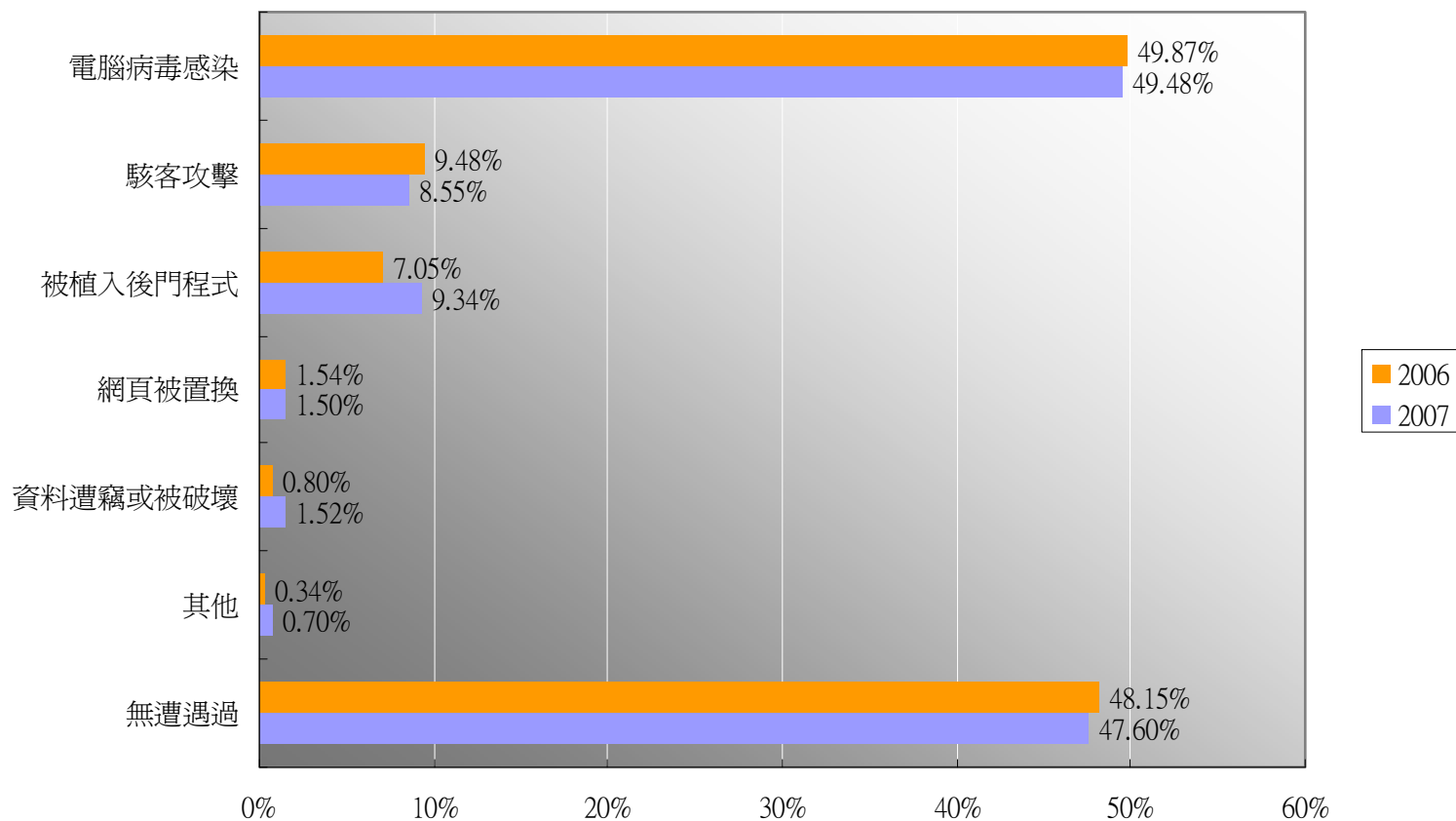


- Credit card 59%
- Personal Data 16%
- Server Account 10%
- Financial account 8%
- Spam and phishing information 6%
- Others 1%

Source: Symantec "14<sup>th</sup> Underground Economic Activities Report", Nov. 2008



# More than half of all public and private institutions experienced security incidents



Source: 2007 Computer Usage Report, DGBAS, Executive Yuan, Oct. 2008



# IS budget of Taiwan and USA

(in Millions)

Budget Type of Agency	2007			2006			2005		
	Total Information Budget	IS Budget		Total Information Budget	IS Budget		Total Information Budget	IS Budget	
		Amount	percentage(%)		Amount	percentage(%)		Amount	percentage(%)
<b>Total</b>	127,804	6,895	5.40	120,774	5,505	4.56	109,588	5,565	5.08
Private Enterprise	88,716	4,374	4.93	80,917	3,168	3.91	71,583	3,021	4.22
Government agencies	17,640	1,334	7.56	17,907	1,237	6.91	19,413	1,459	7.51
SOE	10,205	651	6.38	11,136	511	4.59	10,399	669	6.44
Public Schools	4,281	203	4.74	4,316	243	5.62	3,929	172	4.39
State Research Institutes	449	21	4.75	592	32	5.41	481	26	5.49
Private Schools	5,035	256	5.09	4,064	253	6.23	3,489	199	5.71
Private Research Institutes	1,478	57	3.84	1,842	61	3.30	294	18	6.02

**Decrease**

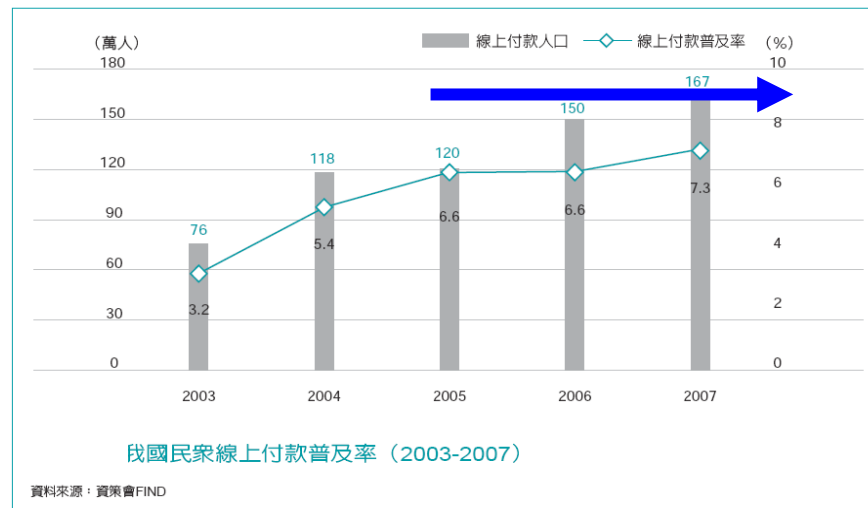
Source: DGBAS 2005-2007 Computer Usage Report

US Federal Government Expenses	FY08	FY07	FY06	FY05
IS Budget input(USD: hundred million)	62	59	55	50
Information budget(USD: hundred million)	680	650	630	620
percentage	9.12%	9.08%	8.73%	8.06%

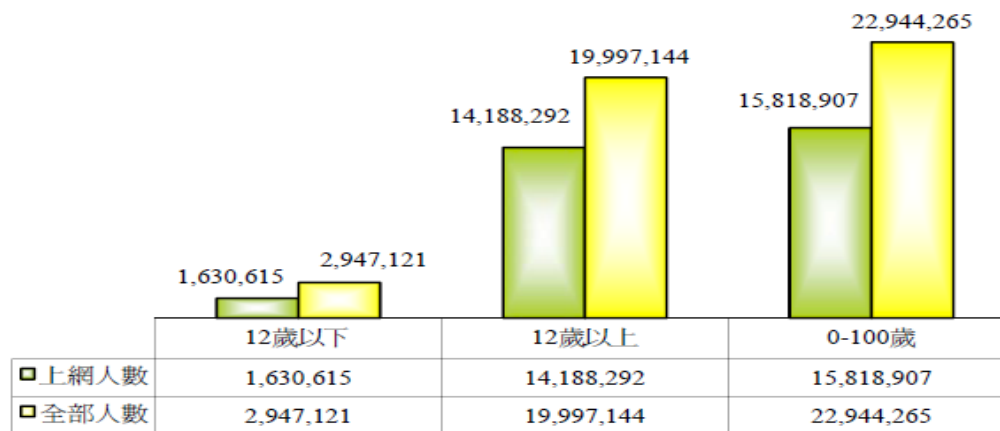
Source: US Fiscal Year 2008 Report to Congress on Implementation of The Federal Information Security Management Act of 2002



# Internet Usage in Taiwan



**Online shopping and online payment penetration rate is peaking**



單位：人

Source: TWNIC "2009 Broadband Usage Survey in Taiwan", Jan. 2009



# Global IS market in 2008 was USD 45.8 Billion

Taiwan IS industry output value in 2008 was USD 1,118 million  
Output value of other IS related products was USD 727 million

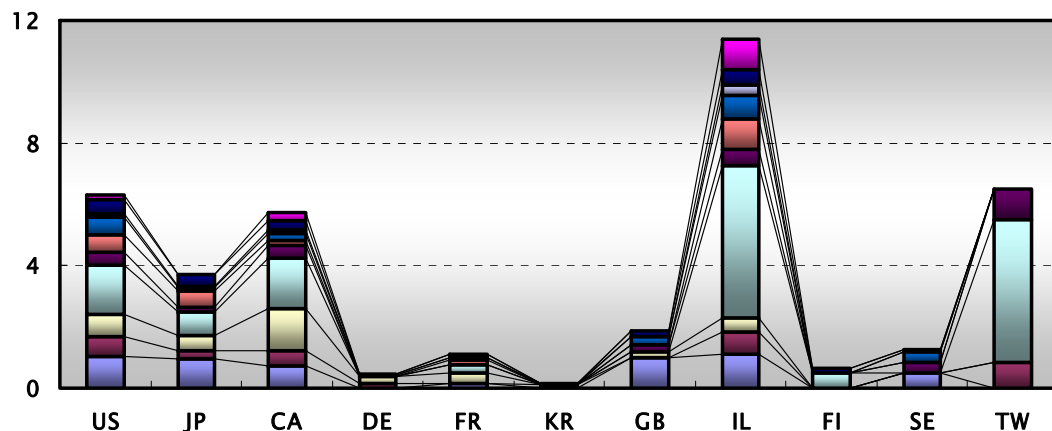
## 2006-2011 global IS market size



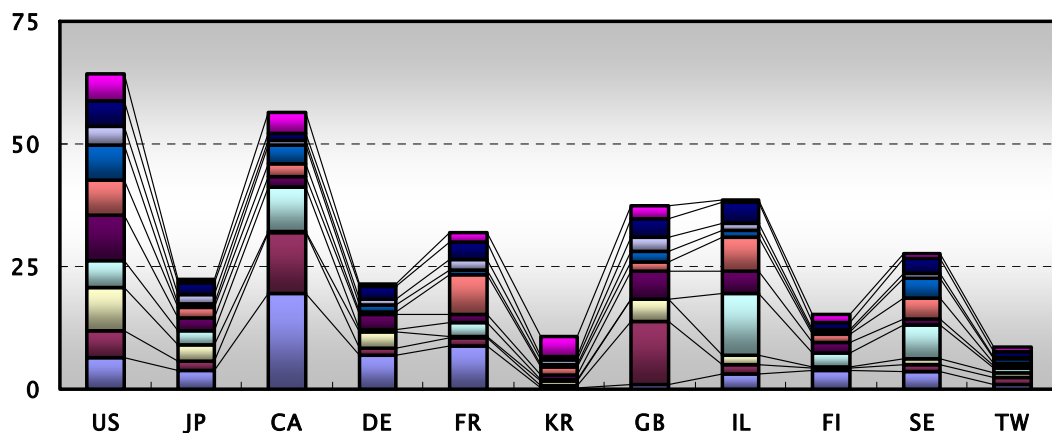
Source: III MIC, May 2009



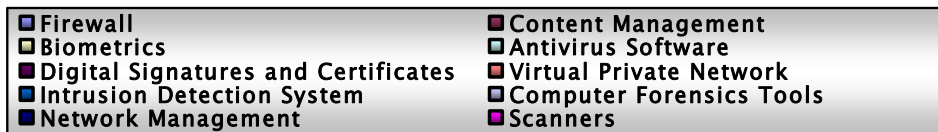
# Development Capability of IS Technology



**Current Impact Index (CII):** Number of times patents are cited in the current year, relative to all patents in the patent system



**Science Linkage Index (SLI):** the mean number of references to scientific publications among the patents issued





# SWOT Analysis of Taiwan's IS Competitiveness

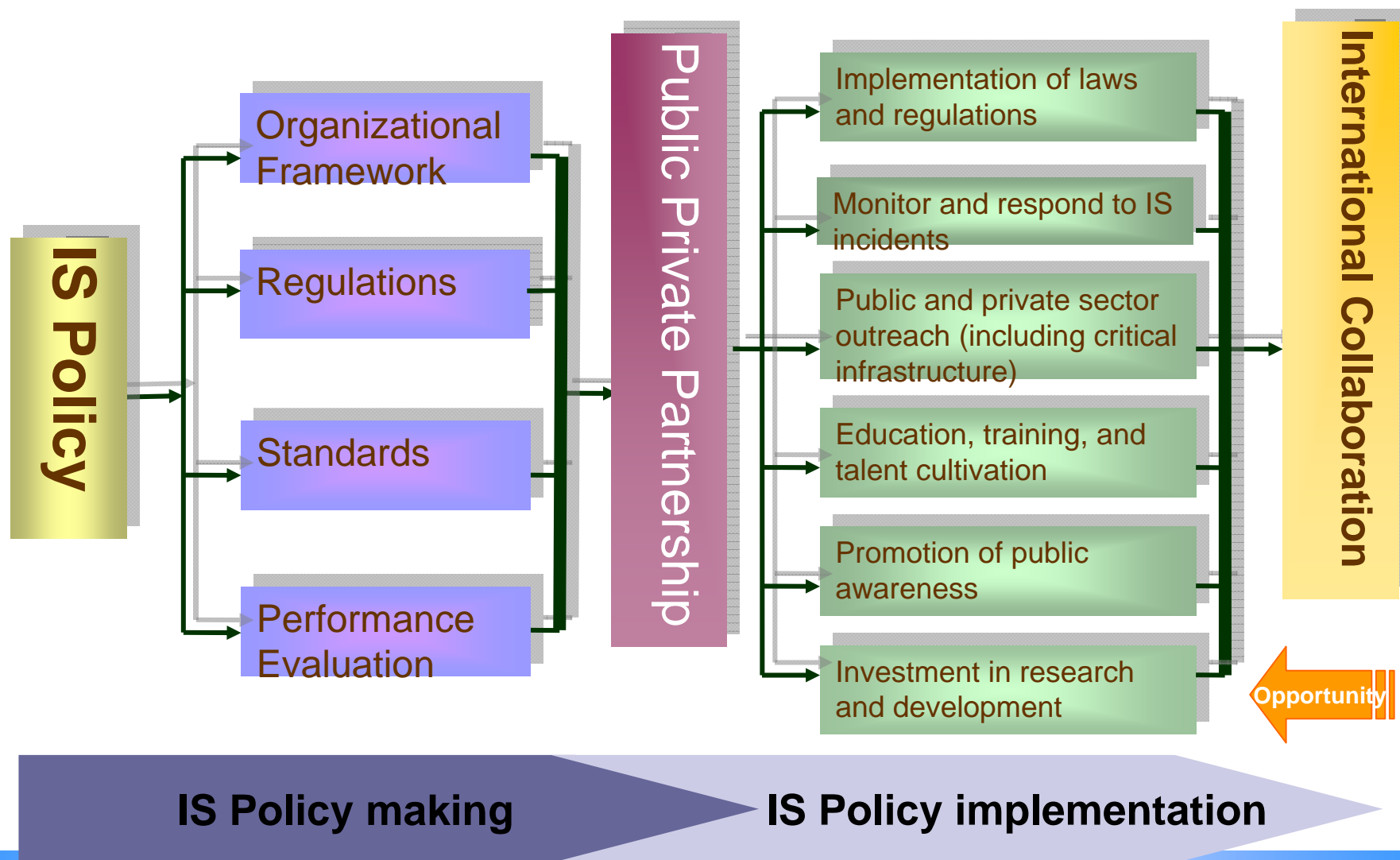
Strengths; S	Weaknesses; W
<ol style="list-style-type: none"> <li>Taiwan has rich experiences in safeguarding ICT infrastructure and abundant data in hacking behaviors.</li> <li>Taiwanese firms that develop own products have technical advantages in screening and interception of mail, web content, etc.</li> <li>Taiwan IS vendors and service providers possess competitive advantages in local and Chinese language.</li> <li>Taiwan has a strong ICT industry, plentiful talent, flexibility and adaptability to innovation and new technologies.</li> <li>Taiwan IS companies can leverage ICT strengths via integration or alliance to develop own IS products.</li> </ol>	<ol style="list-style-type: none"> <li>Most firms are SMEs with limited resources. Lack of professionals in the area of commercialization and internationalization.</li> <li>Small domestic market cannot provide the benefits of economy of scale. High growth and high margins are unlikely.</li> <li>Domestic security legal framework is not mature yet. Policy tools are scarce and benefits limited.</li> <li>Lack international marketing momentum. Difficult to build brand trust, hard to compete with large companies.</li> <li>Industry has yet to tap fully into fundamental research results from academia.</li> </ol>
Opportunities; O	Threats; T
<ol style="list-style-type: none"> <li>Global IS market continues to grow due to increased threats, frequent personal data leakage, and tighter regulatory mandates.</li> <li>Governments around the world continue to build ICT infrastructure and application services. Their objective is to create a secure and trustworthy cyberspace.</li> <li>Internet is borderless, necessary to promote international collaboration.</li> <li>Emerging information and communication technologies, as well as new applications or services, continue to grow, fertilizing Taiwan IS industry to add on value.</li> </ol>	<ol style="list-style-type: none"> <li>Cyberspace has turn into a new crime scene, ICT is used as tools to commit crime. Attack methods and techniques are constantly changing, solutions obsolete rapidly.</li> <li>Large international firms with big brands pose strong competition to Taiwan companies that are mostly SMEs.</li> <li>High customization and support costs in overseas markets making Taiwan SMEs less competitive abroad.</li> <li>Developed countries keep on developing IS management mechanisms, strengthening regulatory and law enforcement, also extending R&amp;D efforts to increase barriers to entry.</li> </ol>

# IV. Prospective Outlook





# Learning from other countries: observing IS policy frameworks

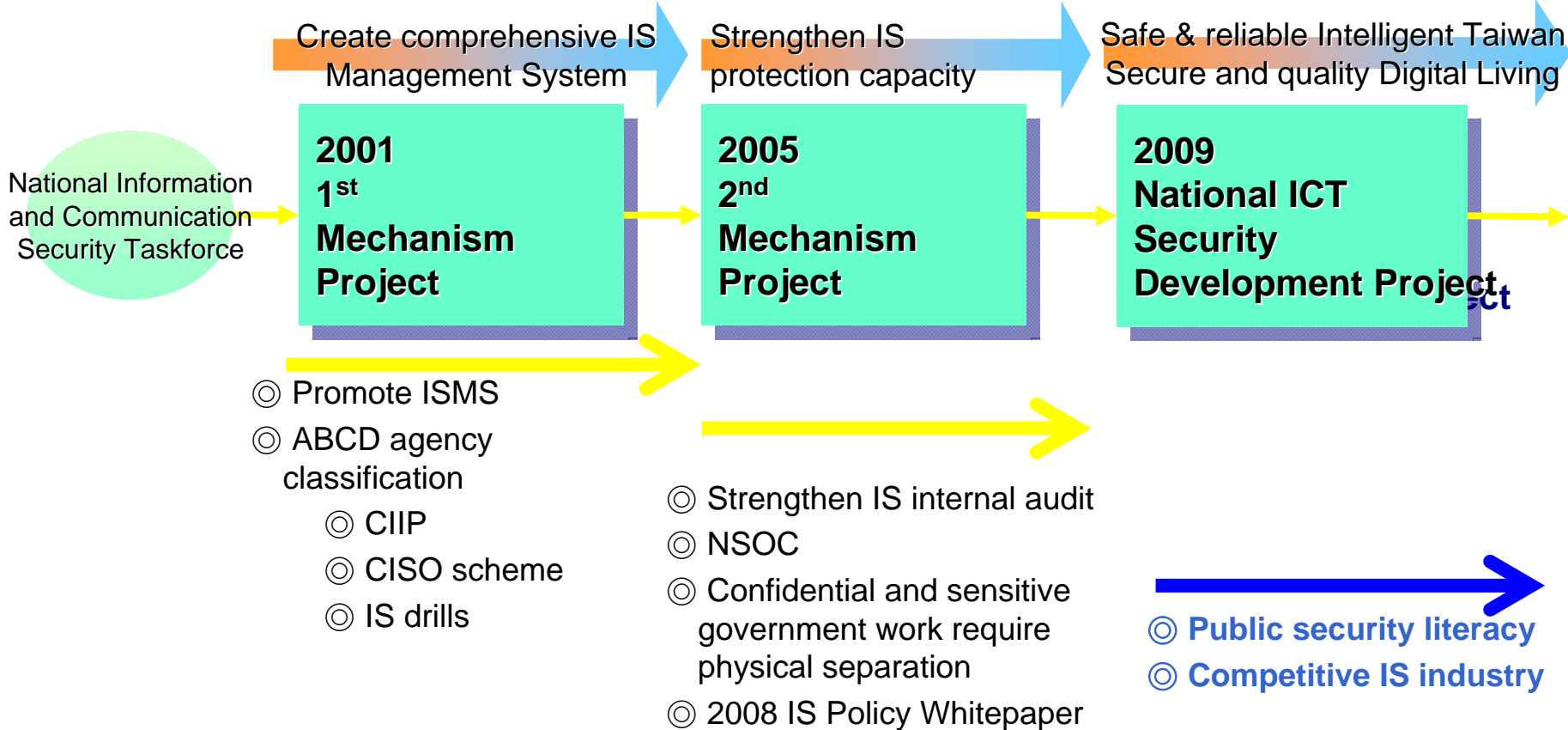




# IS Development in Taiwan

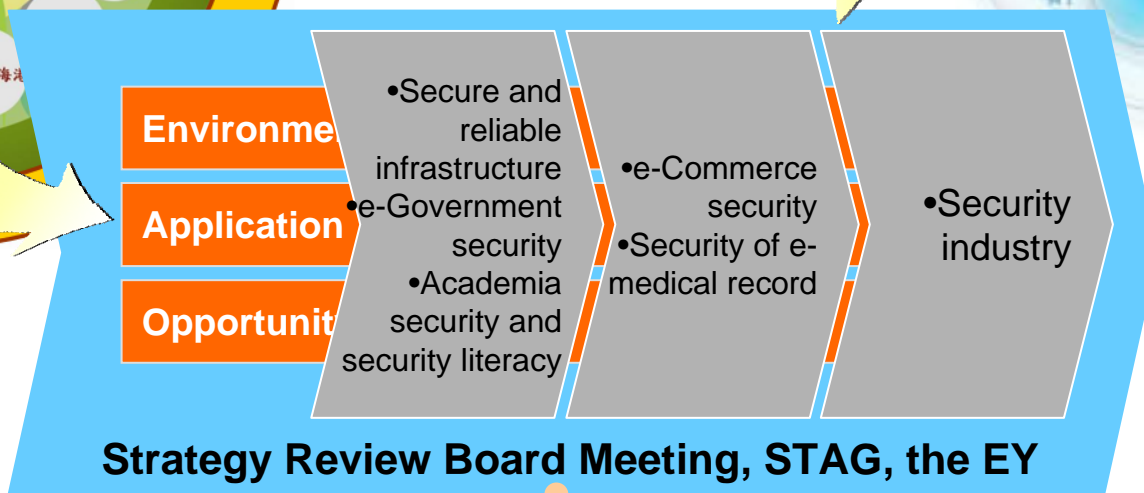
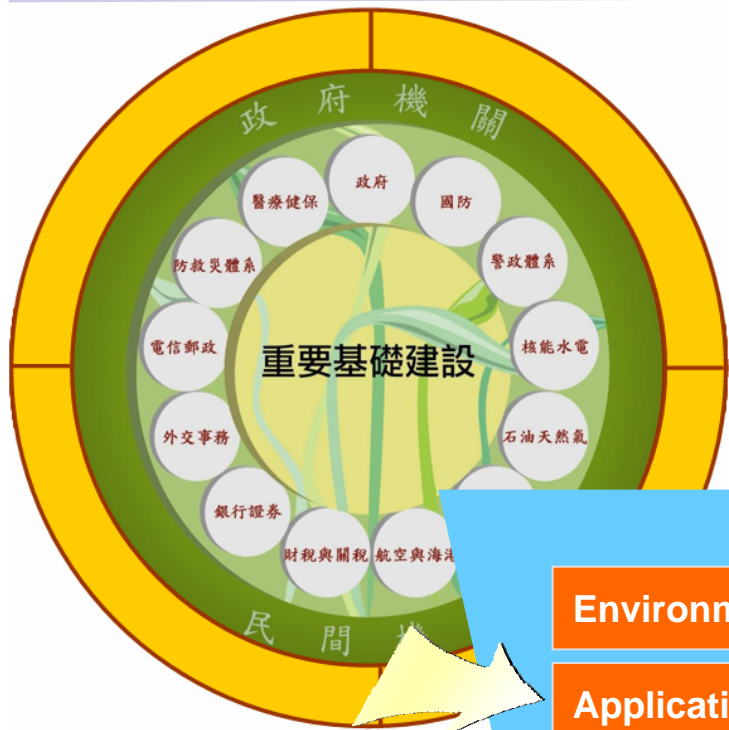
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In 1994, the government began promoting "national ICT infrastructure"





# Shape a Culture of Security, Promote Security Industry



## New Milestone in Taiwan's IS Development



# Security SRB Agenda

**8/18 Tue.**

**8/19 Wed.**

**8/20 Thu.**

Morning

9:00-09:10 Opening remarks (Minister without Portfolio)

9:10-09:50 Keynote Speech I— Security in the Clouds— Latest Trends of Internet Security and its Implication to Taiwan (Trend Micro Founder: Steve Chang)

09:50-10:10 Retrospect and Future of Taiwan ICT Security Development (STAG)

**Topic1** Establishing a Secure & Trustworthy ICT Environment

10:30-12:00 (90min)

1.1 Establishing the Mechanism to Assure Security and Trust of ICT infrastructure (NCC)

**Topic2** Privacy Protection and Ensuring Security of Network APs/Services

9:00-10:30 (90min)

2.1 e-Commerce Security (MOEA/FSC/MOJ/MOI)

10:50-12:20 (90min)

2.2 Security of e-medical Records (DOH/MOJ)

Lunch

Preparing Observations & Recommendations

Afternoon

13:30-15:00 (90min)

1.2 Secure and Trusted e-Government Services (RDEC)

15:20-16:50 (90min)

1.3 Strengthening Information Security in the Educational System and Enhancing Security Literacy (MOE)

13:30-14:10 Keynote Speech II— Taiwan Needs A Competent ICT Security Industry to Protect the Information Society (Chair of Information Service Industry Association: Liu Raylung )

**Topic3** Opportunity of Taiwan ICT Security Industry

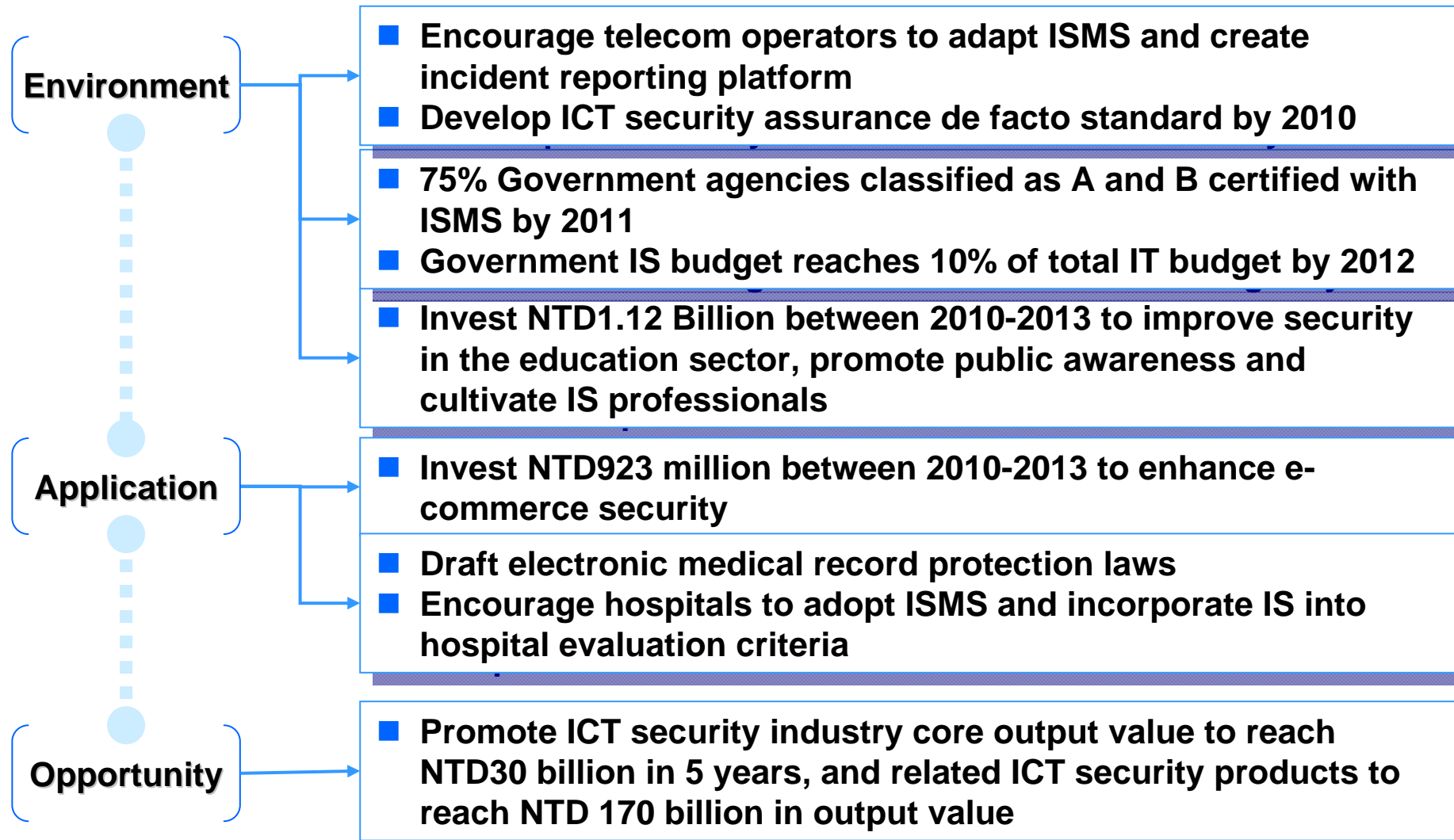
14:30-16:30 (120min)

Facilitating the Development of Taiwan ICT Security Industry (MOE/NSC)

14:00 – 15:30 Closing Session Chaired by Minister without Portfolio



# Policy Goals



Thank you

