



The Role of PKI in building and maintaining Digital Trust

William Emmanuel Yu, Ph.D, CISM, CISSP, CSSLP, CRISC
Chief Technology Officer

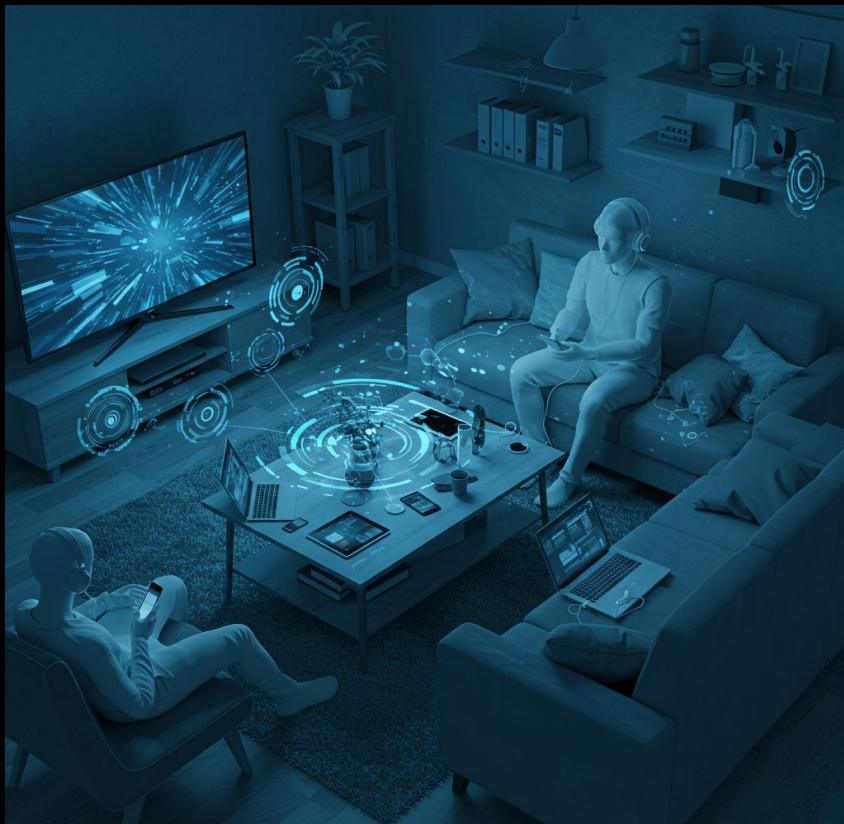
Disclaimer:

A lot of AI was used in the making of this presentation. But, no animals were harmed

```
41
42
43 class Invite {
44     use Message1;
45 }
46
47 class Invite2 {
48     use message1, message2;
49 }
50
51 void Inv
52     echo <?php>
53
54
55 obj12 = new Invite2;
56 obj1 = new Invite;
57 obj1->sayHello();
58
59 $x = 12345678;
60 var_dump(is_int($x));
61
62 $x = "12345678";
63 var_dump(is_int($x));
64
65 $d1=strtotime("December 31, 2012");
66 $d2=ceil(($d1-time())/86400);
67 echo "There are " . $d2 . " days left";
68
69
70 if (!filter_var($int, FILTER_VALIDATE_INT)) {
71     echo("Integer is valid");
72 } else {
73     echo("Integer is not valid");
74 }
75
76
77 include 'f1.p';
78
79 ?>
80
81 </body>
82 </html>
```

What does the landscape look like today?

Technology is Everywhere



Technology brings risk



What ELSE do we need to consider?

The Threats are Real



2020

Israel's **water** treatment systems breached to alter chlorine levels.

UCPB **bank** was hacked; malware used to transfer P170M



2021

US Colonial Pipeline ransomware attack led to shutdown of **pipeline** carrying 45% of East Coast fuel supplies



2022

Australian **telco** Optus successfully breached, affecting 10 million customers or 40% of Australia's population.



2023

Healthcare organizations worldwide averaging 1,463 attacks per week.

Identity provider **Okta** breached



2024

30,578,031,872 known records breached so far in **8,839** publicly disclosed incidents by half year!

CISA and **MITRE** breached

Microsoft corporate email breached



2025

47GB covering **184m** people Infostealer DB exposed

4/2025 SKT **27m** records breach (3 years dwell time)

\$400m over **69k** accounts breached in Coinbase plus other crypto exchanges

Attacks are More Accessible



SERYNES

SERVICES

▪ Root Shell	1.80
▪ Start your own market	1.85
▪ Tat your own market	1.50
▪ Star your marks	35.00
▪ Top your own market of	6.00
▪ Hulpious Mackes	7.00

KIT KIT

▪ Wote:press by	2.50
▪ Vommenmen + Explome	- 2.00
▪ Tomcat Yorn + pel:mccketerot	
▪ Tomccat Worm	2.50
▪ Tomcat Worm Exnplon	2.40
▪ Internet Yupliver	8.00
▪ Destboun Uples	8.00

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lou a Sonns	8.00
Of a sstal yrootutued	5.00
Expples uprags	3.00
Up Phlls en Siunceh	8:75
Tonncen Worm	5.00
Peteront 2.500	2.00
Tosot ore Kigresptiun	

EXPLOIT

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Exccuion	45.00
Oop youy st rwstr nanote	= - 10
Curenioioes	180
llnprour	1.05
Internet Explover	= 11 35.00
Intecernie + bok	3.00
Birt	

Franchisification

- Technology operators offer various syndicates exploit capabilities

Exploit as a Service

- Easy for end users to acquire exploit capabilities with no technology skills, automation

Easier to Hide

- Crypto and Dark Web
- Generative AI and Deep Fakes

Safety and Security Challenges



\$2M

(up 5x)

AVERAGE RANSOMWARE
PAYMENT in 2024

2.56x

INCREASE IN NUMBER
MALWARE IN EMPLOYEE
DEVICES IN 2024

4M

GLOBAL GAP IN
CYBERSECURITY
PROFESSIONALS

5B+

(up 28%)

CYBERATTACKS DAILY in
the PHILIPPINES in 2024

Cybersecurity in the Philippines: Global Context and Local Challenges

<https://asiafoundation.org/publication/cybersecurity-in-the-philippines-global-context-and-local-challenges/>



Digital is a Need, No longer a Want



>80M

NUMBER OF PEOPLE
IN ONE FINTECH
(74% of the population)

24M

TRANSACTIONS A DAY
(In 2020, only had 5.3M
transactions per day)

\$15B

TOTAL ANNUAL VALUE OF
DIGITALLY ENABLED
CONSUMER PAYMENTS

76%

MADE AN ONLINE
PURCHASE (ANY DEVICE)

91%

VISITED AN ONLINE
RETAIL STORE

91%

SEARCH ONLINE FOR A
PRODUCT OR SERVICE TO
BUY (ANY DEVICE)

76%

MADE AN ONLINE
PURCHASE (ANY DEVICE)

66%

MADE AN ONLINE
PURCHASE VIA MOBILE
DEVICE

Source: <https://www.statista.com/outlook/295/123/fintech/philippines>
<https://datareportal.com/reports/digital-2020-philippines?rq=philippines>

Digital is Build on Trust

In the Digital World, who is who?



Combination of Technologies and their Roles to Play

- Identification
- Authentication
- Know Your Customer (KYC)
- Not limited to People
- Balance between Convenience and Cost



Modern Systems and their Complex Interactions

- Modern systems have taken modularity to extreme levels
- SaaS, IaaS, APIs have allowed rapid growth of digital services
- Many more interactions that can be humanly managed
- Technology must be used to managed Technology



Call to Action



Support the development of **Standards, Guidelines, and Best Practices**. Rolling your own isn't ideal



Do not forget to secure your systems and the **interaction between systems**



Shift Left. Consider information security in all stages of the process
Bake it in!



Design systems with **Zero Trust** principles



Consult the Experts. No man is an island



Build communities of support and best practice

There is no Sustainable Digitization without Security



KEEP CALM AND GO DIGITAL

Let Us Help **Transform Your Business**
Contact us at info@novare.com.ph

Headquarters
11F MDI Corporate Center, 39th St., cor. 10th Ave.,
Bonifacio Global City, Taguig, 1634, Philippines
Telephone: +63 2 8779 6558 / +63 2 8812 2124
Email: insidesales@mdi.net.ph



www.novare.com.ph

