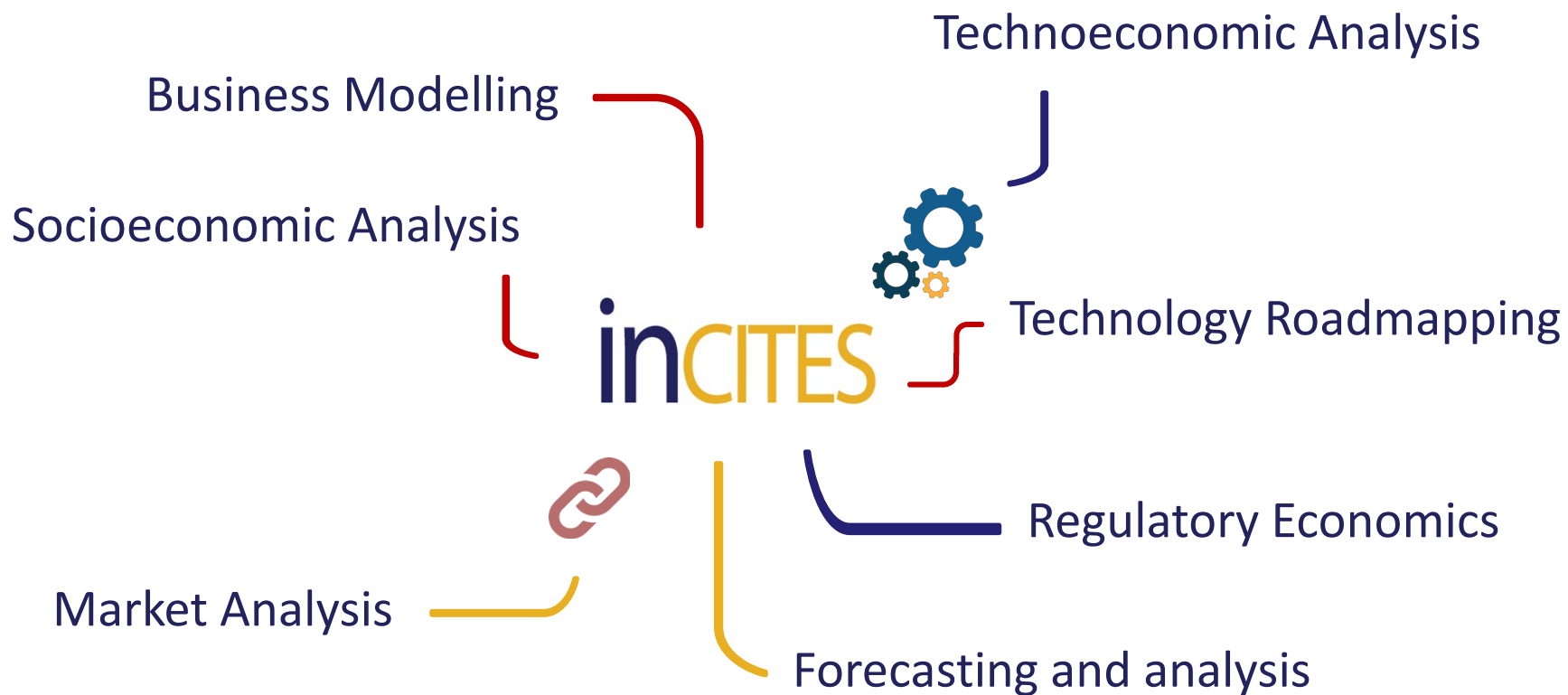




# Estimating the cost of Cyber Crime

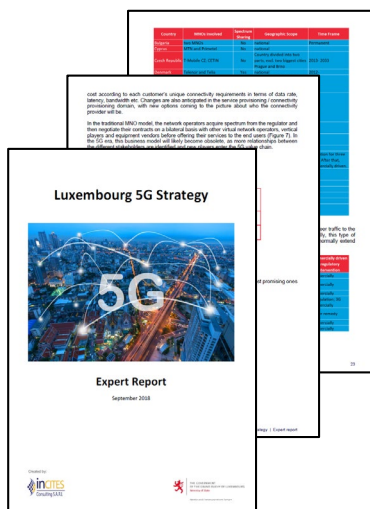
Dr. Theodoros Rokkas, CTO

# inCITES Consulting



# What we do

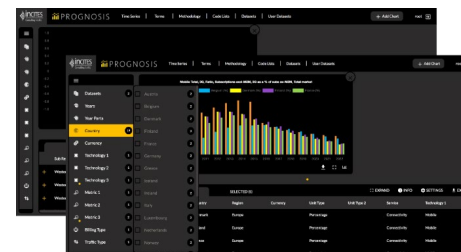
## Consulting



## Research



## Prognosis



# Introduction

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- 9 in 10 citizens of EU consider cybercrime as an important challenge
- 32% of companies consider cyber risk in top-5
- Uncertainty about the number of victims and the economic impact
- 60% of the companies have not made an estimation of the financial losses

# Major threats

Rank 2018	Threat (2018)	Rank 2017
1	<b>Malware</b>	1
2	Web based attacks	2
3	Web application attacks	3
4	<b>Phishing</b>	4
5	Denial of Service	6
6	<b>Spam</b>	5
7	Botnets	8
8	<b>Data Breaches</b>	11
9	Insider Threat	9
10	Physical manipulation/damage/theft/loss	10
11	Information leakage	13
12	Identity theft	12
13	Cryptojacking	-
14	<b>Ransomware</b>	7
15	Cyber espionage	15

# Framework

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- Estimate the economic impact of different threats on the economy of the countries
  - Companies by size
    - Self-employed
    - Micro (0-9)
    - Small (9-50)
    - Medium (51-249)
    - Large (>250)
  - Individuals

# Malware Facts

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- Second top method (1<sup>st</sup> is unknown)
- Exponentially growth last decade
- Average week company 17,000 alerts
- Main delivery is email (92%)
- Responsible for 30% of data breaches
- Large companies spent 18 hours per week to contain
- EU level 1 to 5 have experienced infection

# Phishing Facts

- 97% of consumers were unable to identify
- 90% of infections and 72% of data breaches originate from phishing attacks

Examples of common campaigns	Bulk phishing attacks
Total messages in the campaign	1,000,000
Blocking rate	99%
Opening rate (percentage of emails that are opened)	3%
Clickthrough rate (percentage of emails that users click on hyperlink)	5%
Conversion rate (percentage of users that click the link and become victims)	50%
Victims	8
Revenue per victim	\$2,000
Campaign total value	\$16,000



# Ransomware Facts

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- 4,000 attacks per day
- 50% of consumers would pay to get their data back
- 70% of companies would pay to get their data back
- Typical fees \$200-\$10,000
- Average cost \$6,700

# Spam Facts

- 300 billion emails per day
- 85% of inbound traffic was spam (25% contained malware)

Total emails per day	300 billion
Spam percentage	85%
Blocking rate	99%
Opening rate (percentage of emails that are opened)	3%
Spam emails opened per day	2.5 billion

# Digital security incidents experienced by businesses

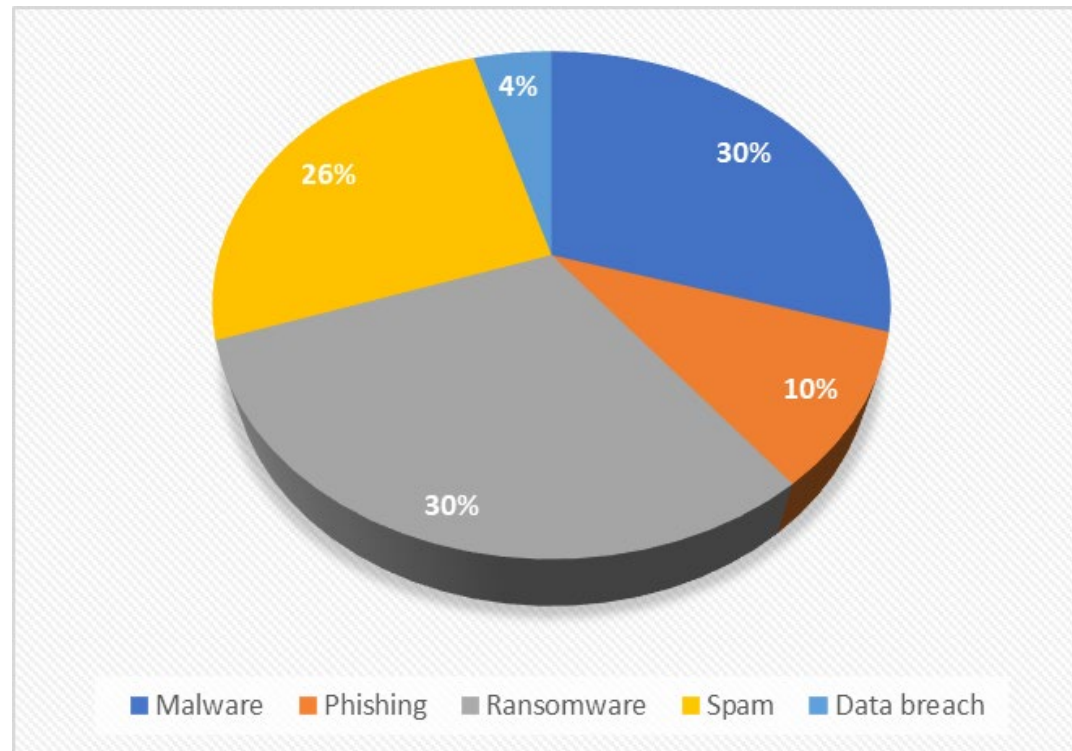
Country	All enterprises (%)	10-49 (%)	50-249 (%)	250+ (%)
Portugal	40,3	39,3	47,1	42,6
Japan	37,5		31,8	54,1
Switzerland	30,1	29,3	32,1	45,8
Greece	28,8	27,9	33,2	35,1
Denmark	28,7	27,2	34,5	43,4
Finland	28,3	25,5	40,9	46,9
Spain	26,2	25,4	30,9	34,1
Czech Republic	25,8	23,0	34,9	43,5
Netherlands	22,3	19,8	30,4	42,9
Lithuania	21,8	19,5	29,8	43,4
Norway	20,9	19,3	27,8	43,7
Slovak Republic	20,2	18,7	24,6	31,4
Ireland	19,8	18,9	23,3	25,9
Sweden	19,5	18,4	23,8	32,4
Iceland	19,2	18,0	21,0	35,7
Italy	18,9	17,8	26,7	34,0
Belgium	15,3	14,0	21,0	24,4
New Zealand	13,6	12,8	16,3	27,9
Luxembourg	11,5	9,9	17,0	25,6
Latvia	10,0	8,7	14,8	25,5
Poland	10,0	8,5	13,9	21,5
Austria	9,5	8,5	13,4	19,0
Canada	9,4	8,4	9,8	19,4
Germany	9,2	7,3	15,2	19,5
Slovenia	8,7	6,9	15,2	21,5
France	8,6	7,5	12,8	19,6
Turkey	8,1	7,0	12,6	20,0
United Kingdom	5,7	5,2	7,9	10,3
Hungary	4,9	4,0	8,5	14,3
Korea	4,2	4,0	4,9	7,3

Source: OECD **incITES**

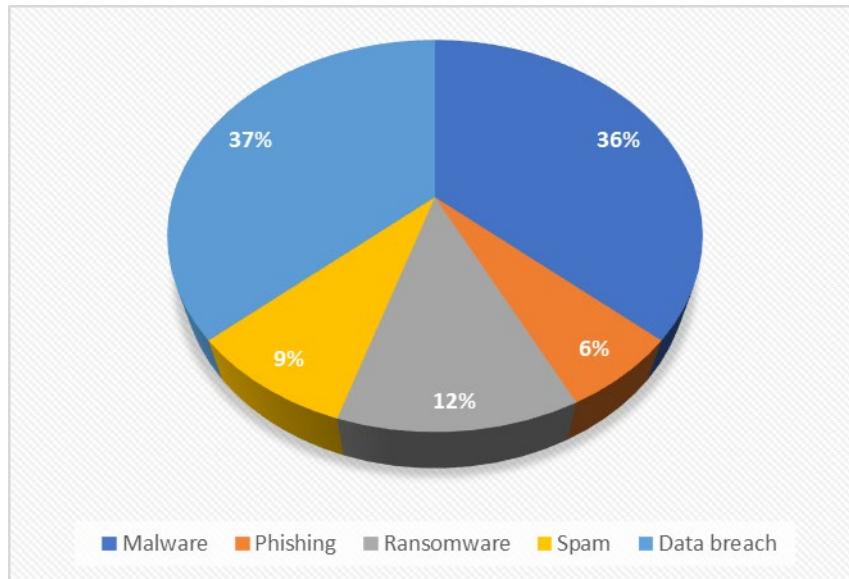
# Results (I)

- EU-28 total cost ~30M€ (0.19% of GDP)
- Higher-5
  - Croatia (0.30%)
  - Portugal (0.27%)
  - Greece (0.25%)
  - Romania (0.24%)
  - Bulgaria (0.23%)
- Lower-5
  - Finland (0.15%)
  - Netherlands (0.15%)
  - Slovenia (0.12%)
  - Luxembourg (0.11%)
  - Ireland (0.09%)

# Distribution of cost (EU-28)



# Distribution of cost (Greece)



- 558 M€
- 0.25% of GDP
- 81€ Average cost per citizen (using the Internet)
- 76€ in EU-28

# Thank you!



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