Threats and Challenges in Social Networks. A European Glance and Alliance Perspective in the Context of the New Strategic Concept.

Assoc. Prof. Dr. Zlatogor Minchev

National Conference "NATO's Policy on Cyber Defense"

Institute for European Initiatives

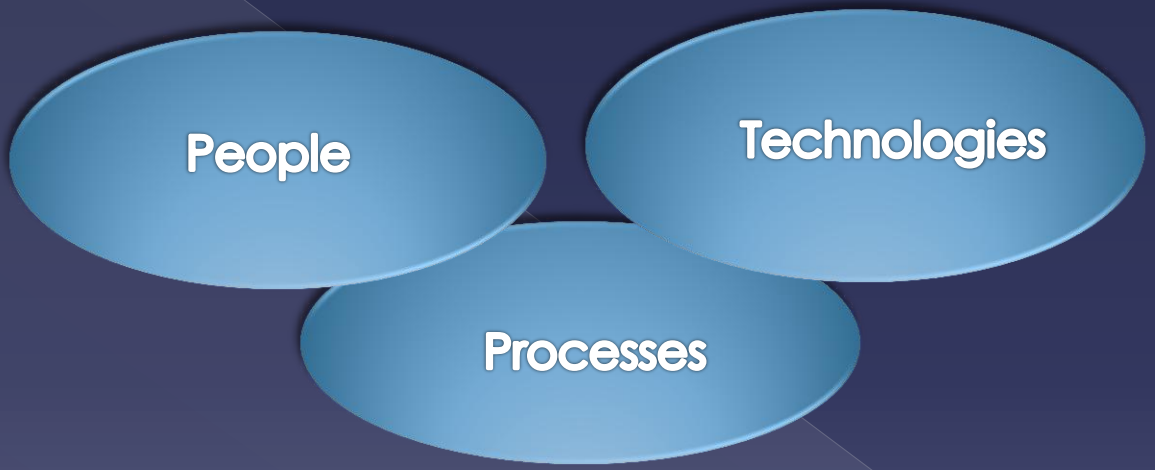
This conference is promoted by

Sofia, Bulgaria Central Military Club December 9-10, 2010

OUTLINE

- What to address today in Cyber Security?
- NATO & EU in Cyber Security
- Why to address Social Networks?
- Methodology of the Study
- The Model
- Future Work

What to address today in cyber security?



Building Capabilities in All These !!!

NATO & EU in Cyber Security

Lisbon Summit of Heads of State and Government, 19-20 November, 2010

12. Cyber attacks are becoming more frequent, more organised and more costly in the damage that they inflict on government administrations, businesses, economies and potentially also transportation and supply networks and other critical infrastructure; they can reach a threshold that threatens national and Euro-Atlantic prosperity, security and stability. Foreign militaries and intelligence services, organised criminals, terrorist and/or extremist groups can each be the source of such attacks.

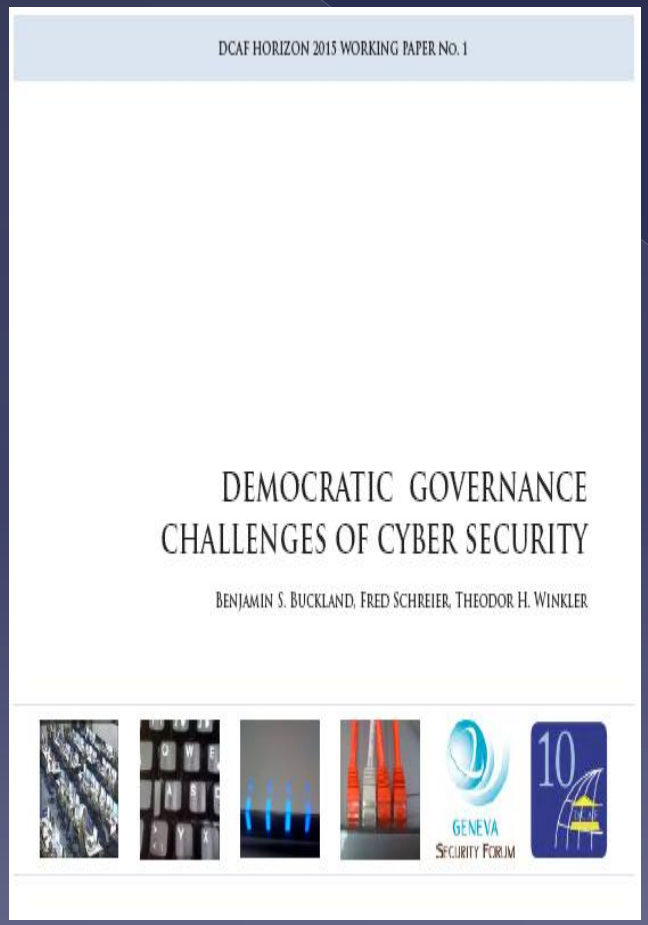
19. We will ensure that NATO has the full range of capabilities necessary to deter and defend against any threat to the safety and security of our populations. Therefore, we will:

- develop further our ability to prevent, detect, defend against and recover from cyber-attacks, including by using the NATO planning process to enhance and coordinate national cyber-defence capabilities, bringing all NATO bodies under centralized cyber protection, and better integrating NATO cyber awareness, warning and response with member nations;

Some other activities in NATO related to Cyber security

- Cooperative Cyber Defence Centre of Excellence Annual Activities, Tallinn, Estonia;
- NATO ACT Cyber Defence Framework & Conferences, 2010
- NC3A Multinational Cyber Defence Program, 2010

Some recent publications on cyber security



Some recent EU activities related to cyber security

enisa
European Network and Information Security Agency

FUTURE INTERNET ASSEMBLY GHENT

2020

ICT INFRASTRUCTURE THREATS

FORWARD is an initiative by the European Commission (under FP7) to promote the collaboration and partnership between Academia and Industry in their common goal of protecting Information and Communication Technology (ICT) infrastructures.

Basic Result:

FORWARD WHITEBOOK: "EMERGING ICT THREATS"

http://www.ict-forward.eu/

POSSIBLE CYBER THREATS

High Priority					
#	Threat Description	Impact	Likely	Oblivious	R&D
1	Threats due to parallelism	M	M	H	M
2	Threats due to scale	H	M	H	M
3	Underground economy support structures	H	H	L	H
4	Mobile device malware	H	H	M	H
5	Threats related to social networks	H	H	M	H

Medium Priority					
#	Threat Description	Impact	Likely	Oblivious	R&D
6	Routing infrastructure	H	H	L	M
7	Denial of service	H	H	L	M
8	Wireless communication	H	H	M	M
9	Unforeseen cascading effects	H	M	H	H
10	False sensor data	H	M	H	M
11	Privacy and ubiquitous sensors	M	M	M	M
12	User interface	M	H	M	H
13	The insider threat	H	M	M	M
14	System maintainability and verifiability	M	H	M	M
15	Hidden functionality	M	M	H	M
16	New vectors to reach victims	M	H	M	H
17	Sensors and RFID	M	H	M	H
18	Advanced malware	M	H	M	M
19	Virtualization and cloud computing	H	M	H	M
20	Retrofitting security to legacy systems	M	M	M	L
21	Next generation networks	H	H	M	M

Low Priority					
#	Threat Description	Impact	Likely	Oblivious	R&D
22	IPv6 and direct reachability of hosts	M	H	M	M
23	Naming (DNS) and registrars	L	H	M	L
24	Online games	L	H	M	L
25	Safety takes priority over security	L	M	H	M
26	Targeted attacks	M	H	M	M
27	Malicious hardware	M	L	H	M
28	Use of COTS components	M	H	M	M

“A European Network of Excellence in Managing Threats and Vulnerabilities in the Future Internet: Europe for the World”

EU FP7

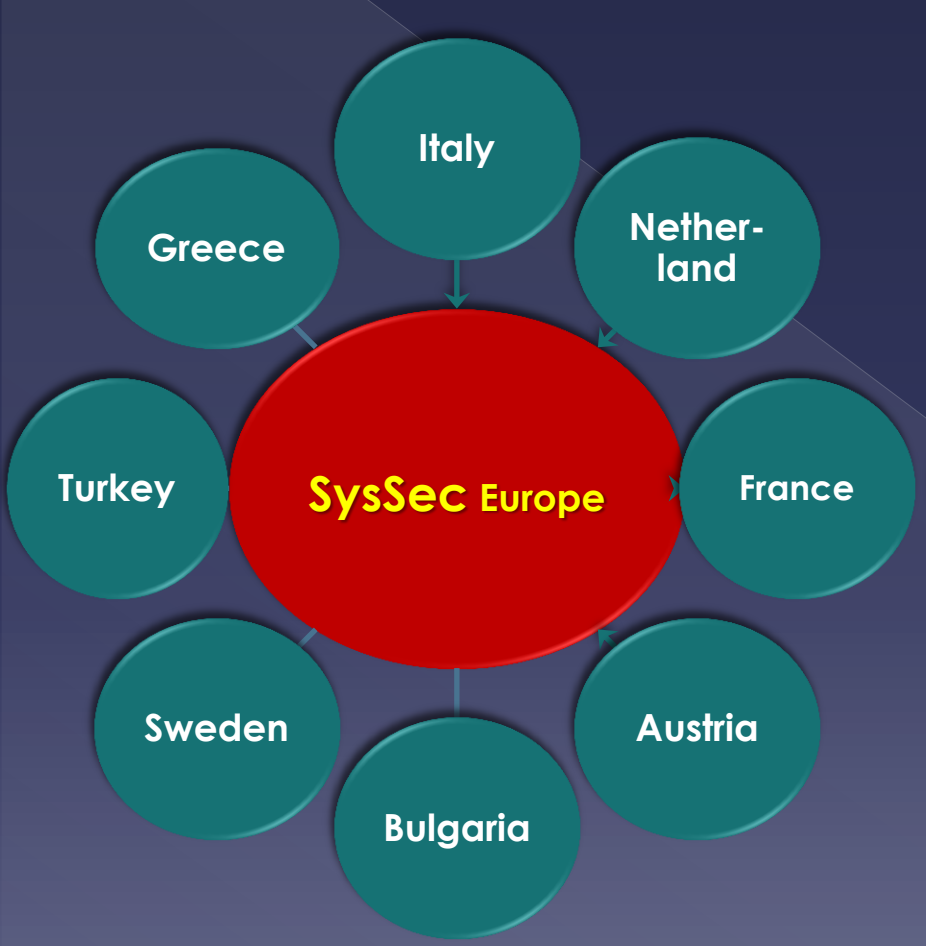
SySSec 2010 -2014

http://www.syssec-project.eu/

... Instead of reactively chasing after attackers, we should start working proactively and think about emerging threats and vulnerabilities...

The Consortia

Participating Countries & Industry



syssec

Why to Address Social Networks?

The Web 2 Technology Challenges and what's coming in Web 3.0

DiNucci, 1999

"…The Web will be understood not as screenfulls of text and graphics but as a transport mechanism, the ether through which interactivity happens…"


COVER STORY

Get ready for Web 3.0

It's boom time again in Silicon Valley – but this time, there's a new angle to the breathtaking pace at which the internet is changing. DAVID SMITH finds that amid the start-ups and lucrative deals, people are developing ideas that will profoundly change the World Wide Web and how we use it

One of the most suitable place for studying emerging Web technologies are Social Networks

List of social networking websites

From Wikipedia, the free encyclopedia

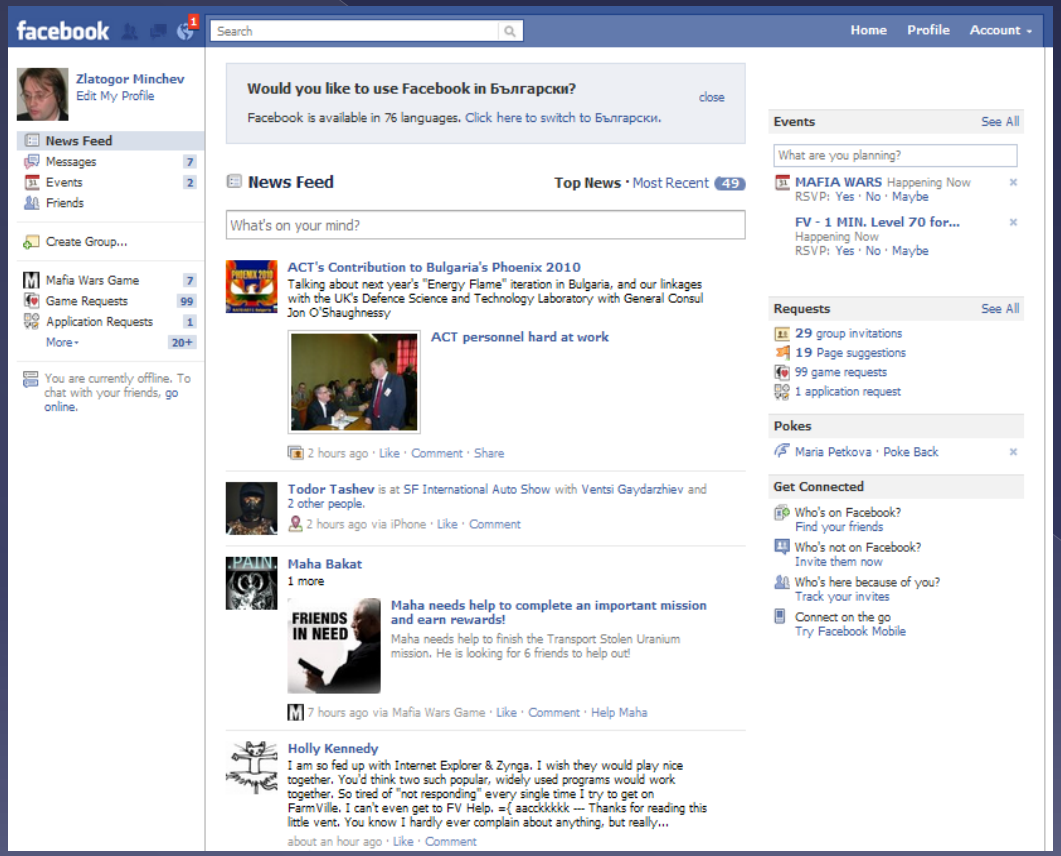
This is a **list of** major active **social networking websites** and excludes dating websites (see List of online dating websites). For defunct social networking websites, see List of defunct social networking websites.

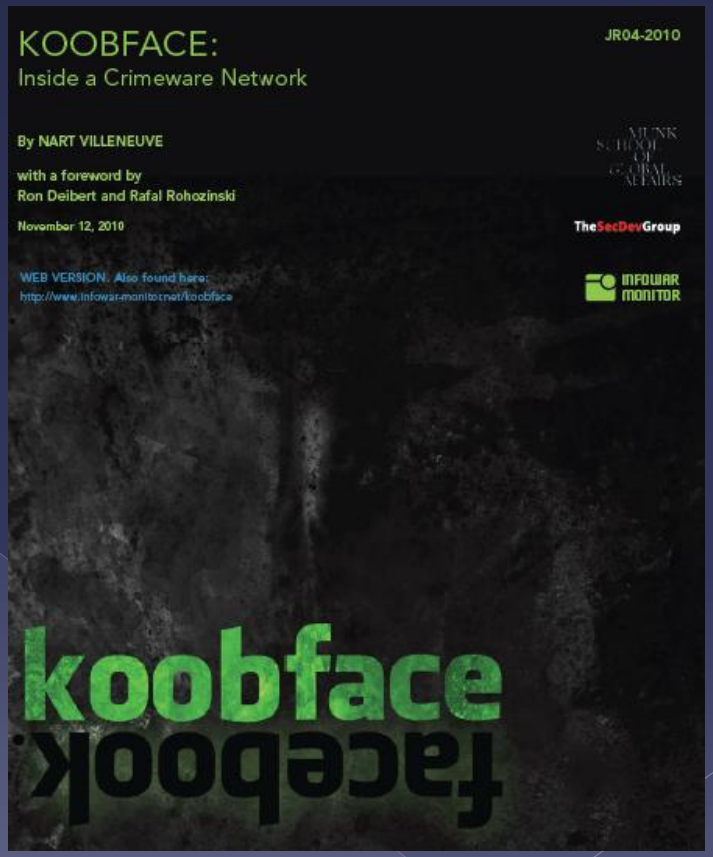
Please note the list is not exhaustive, and is limited to notable, well-known sites.

Name	Description/Focus	Date launched	Registered users	Registration	Global Alexa[1] Page ranking
Academia.edu	Social networking site for academics/researchers		211,000[2]	Open	18,100[3]
Advogato	Free and open source software developers		13,575[4]	Open	128,340[5]
aNobii	Books			Open	10,734[6]
aSmallWorld	European jet set and social elite world-wide		550,000[7]	Invite-only	8,583[8]
AsianAvenue	A social network for the Asian American community	1997		Open	
Athlinks	Running, Swimming		68,496[9]	Open	73,295[10]
Audimated.com	Independent music	2010		Open	25,648[11]
Avatars United	Online games	March 2008		Open	294,575[12]
				Open to	

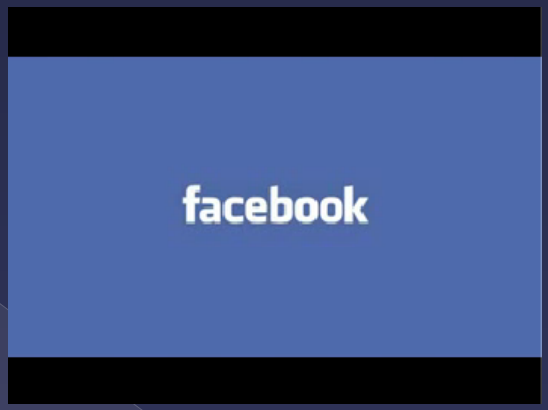
http://en.wikipedia.org/wiki/List_of_social_networking_websites

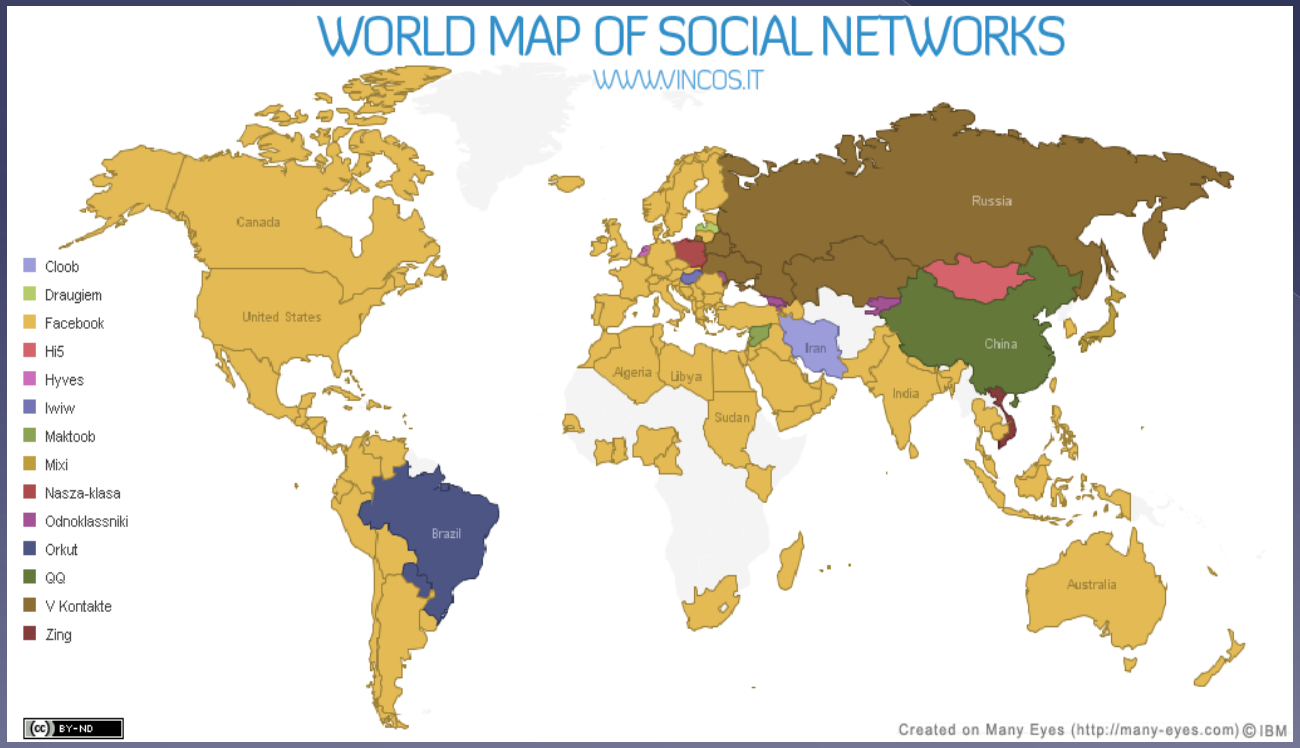
Our Case Study





Why did we choose Facebook?





A map of the World, showing the most popular social networks by country, according to Alexa & Google Trends for Websites traffic data (June, 2010).

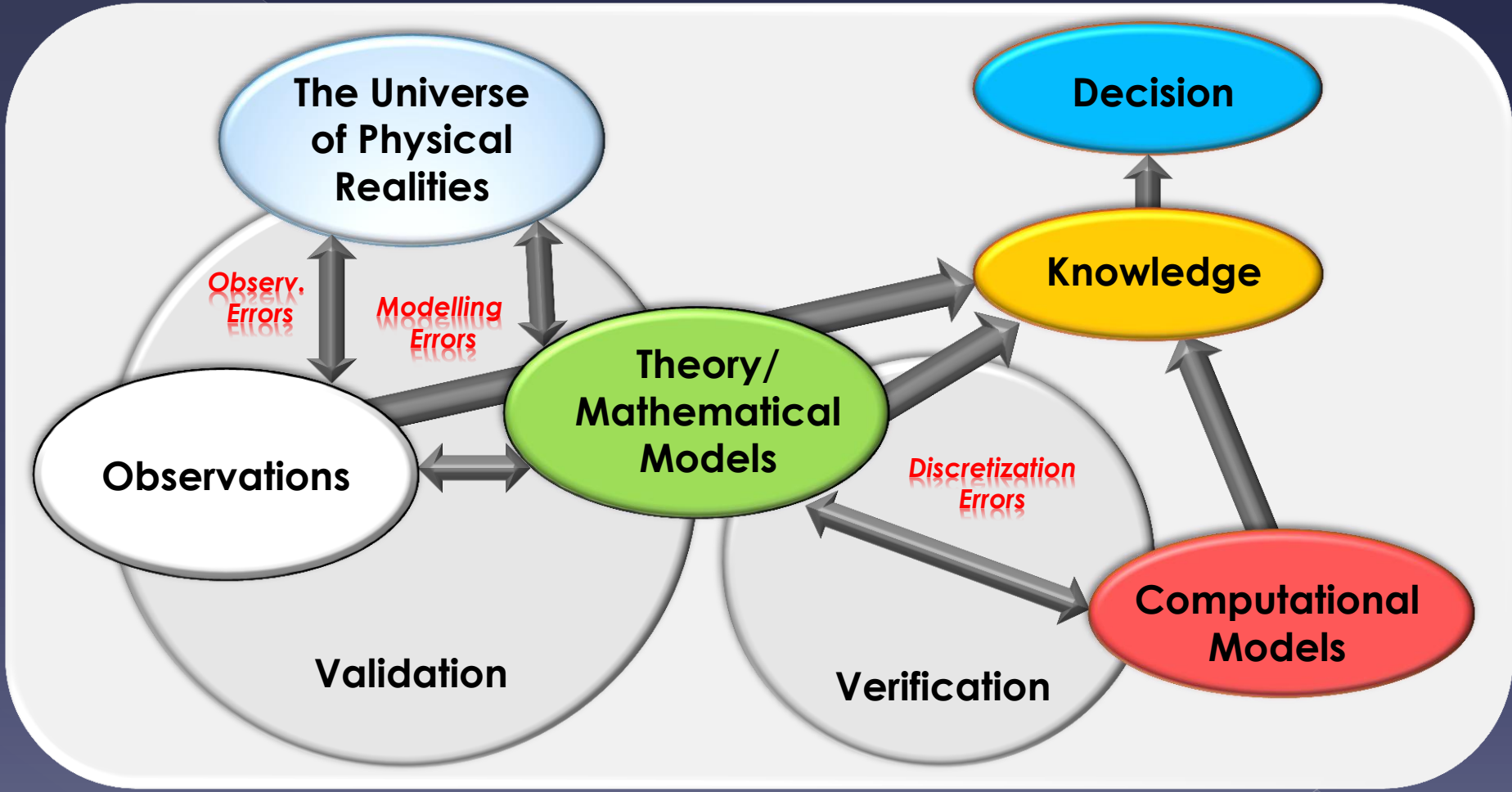
Methodology of the Study

System Analysis

- Intuitive entity-relationship notation;
- Details' consideration in I-SCIP*;
- Familiar to the scientific world for more then half a century.

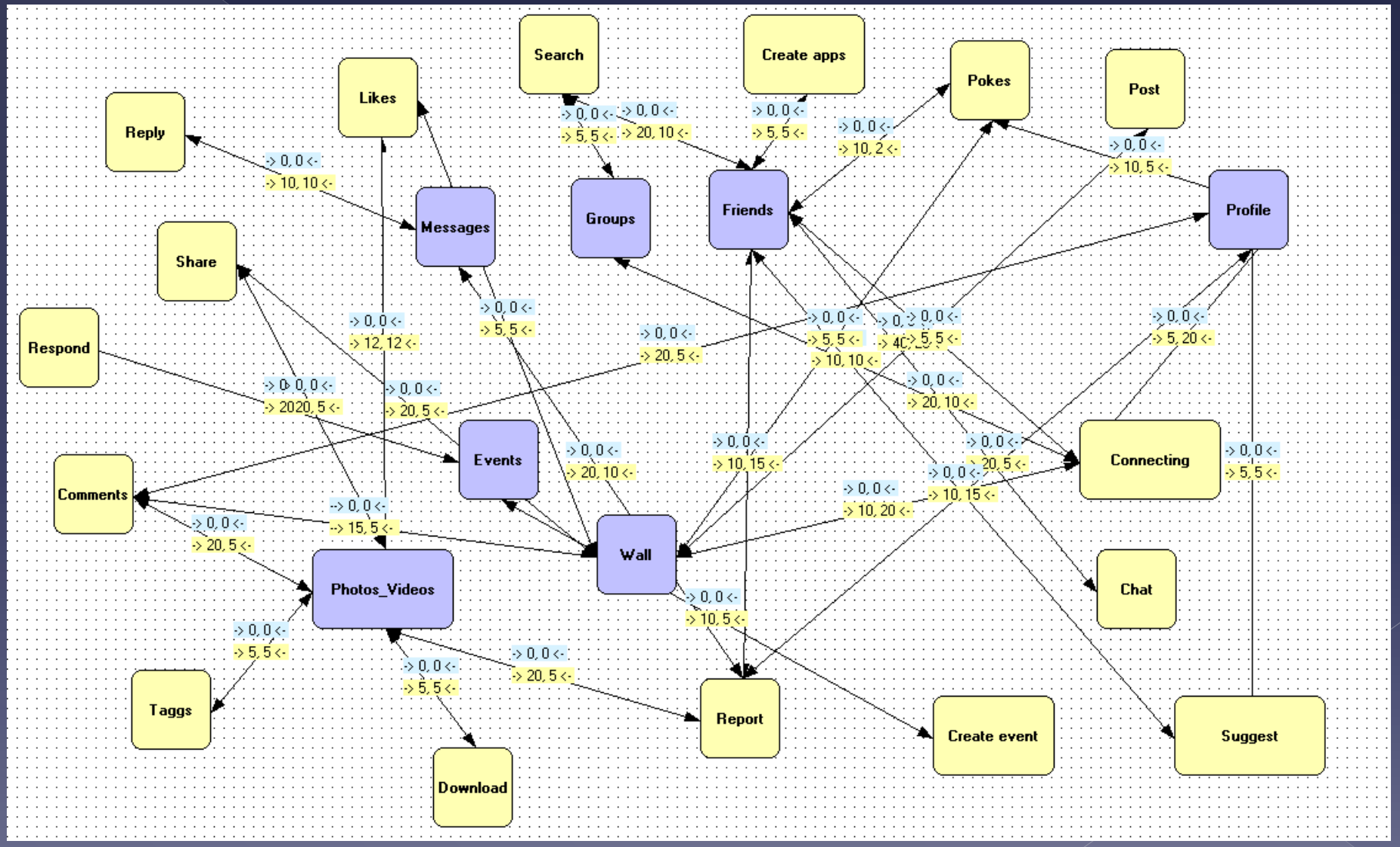
* I-SCIP software environment general description is available in "Minchev, Z., Shalamanov, V., Scenario Generation and Assessment Framework Solution in Support of the Comprehensive Approach, In Proceedings of SAS-081 Symposium on "Analytical Support to Defence Transformation", RTO-MP-SAS-081, Sofia, Boyana, April 26 – 28, 22-1 – 22-16, 2010".

Why to use modelling in the digital world and are there any limits?



After Oden, Moser & Ghattas "Computer Predictions with Quantified Uncertainty", SIAM NEWS, November 12, 2010

The Model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Create apps
Likes
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Events
Connecting
Comments
-> 10, 15 <-
-> 10, 20 <-
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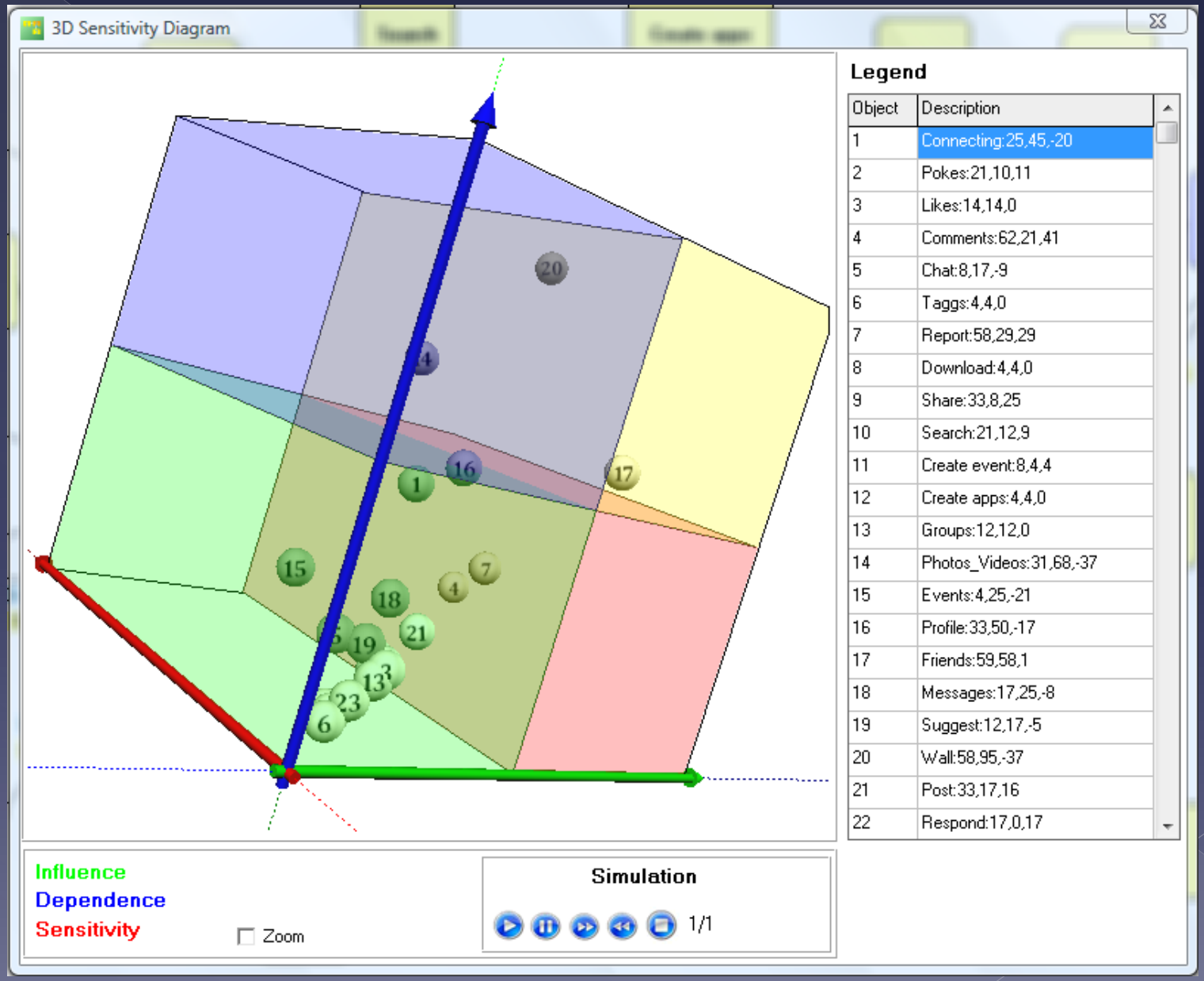
Wall
Chat
Photos_Videos
Taggs
Report
Create event
Suggest
Download

Results of Sensitivity Analysis



THANK YOU FOR THE ATTENTION!