



Effective models for Start-ups in NIS Findings

Dr. Athanasios Drougkas | Officer in NIS | ENISA

NIS Start-ups Validation Workshop | Brussels | 10th November

European Union Agency for Network and Information Security

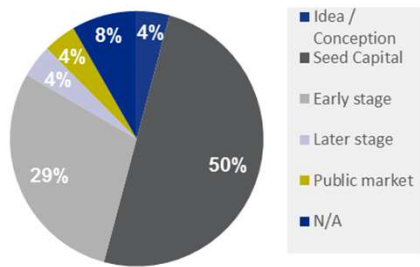


Study Methodology & Demographics

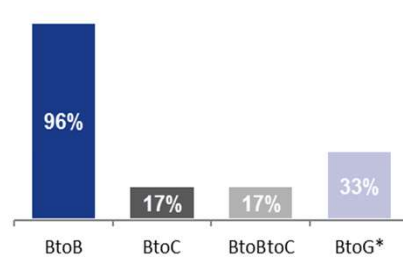


- Desk research
- Interviews (50% Start-ups, 50% VCs, National Funding channels etc.)
- Online Survey

NIS start-ups panel split by growth stages

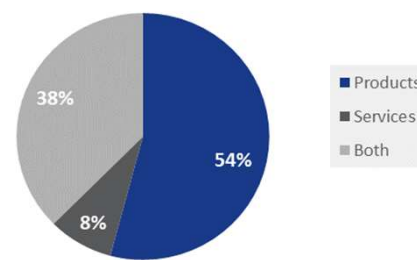


NIS start-ups panel split by business model

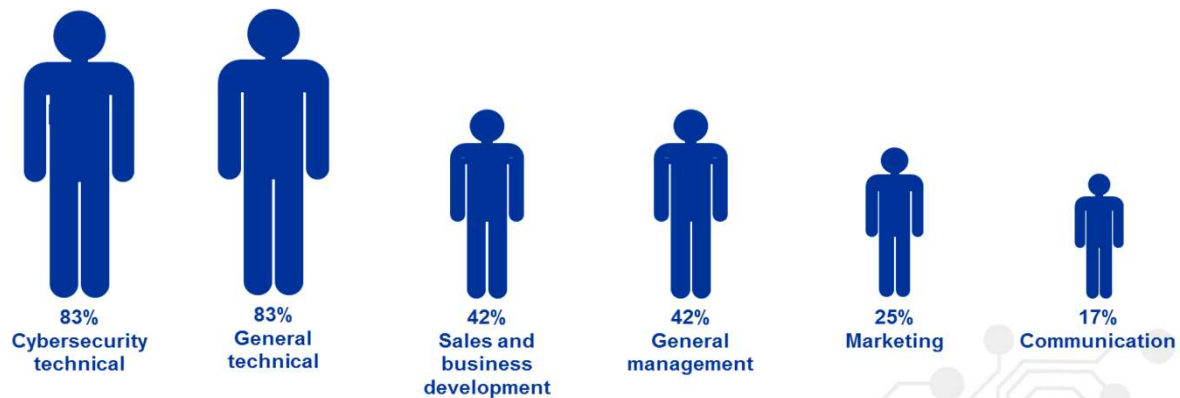
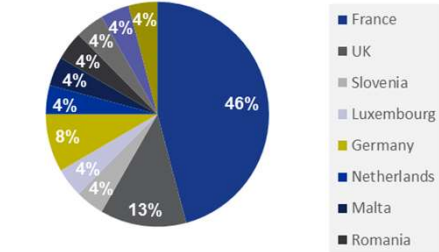


*Business to Government

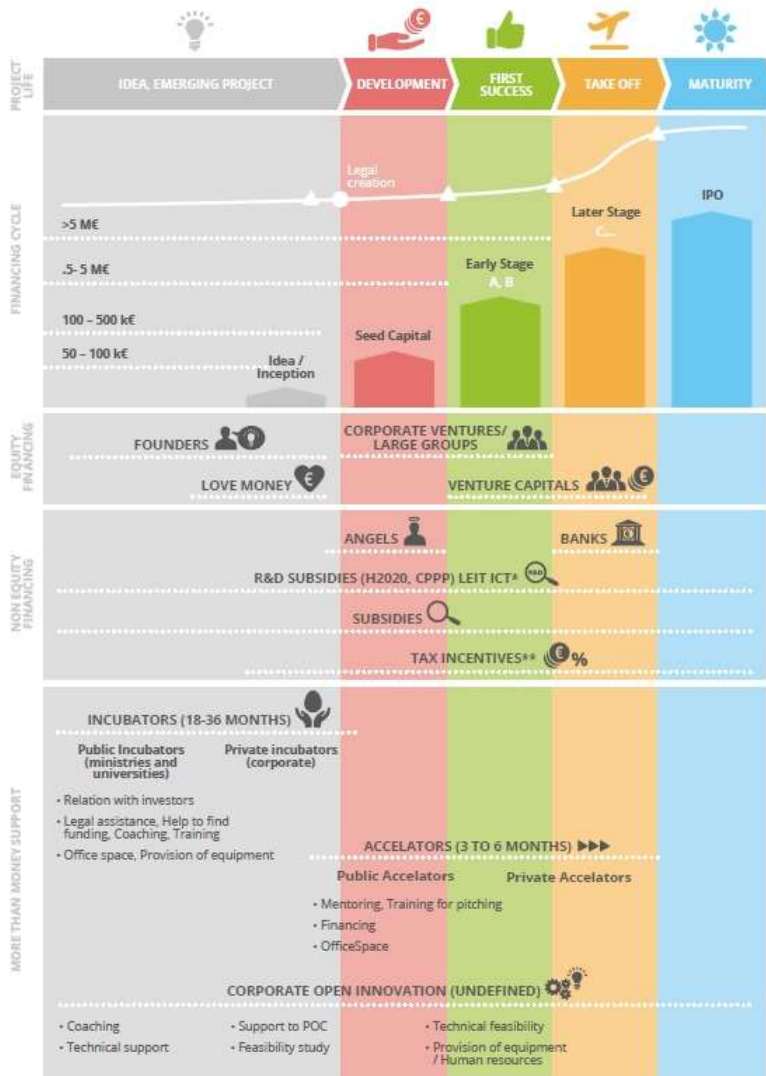
NIS start-ups panel split by offering



NIS start-ups panel geographical origin



Study Scope



- Technologies
- Offerings
- Product development needs
- Private funding (VCs, Angels etc.)
- EU funding (e.g. H2020, cPPP)
- Member State funding & tax incentives
- More than money support
- Incubators/accelerators
- MS initiatives & Public Incubators
- Corporate open innovation

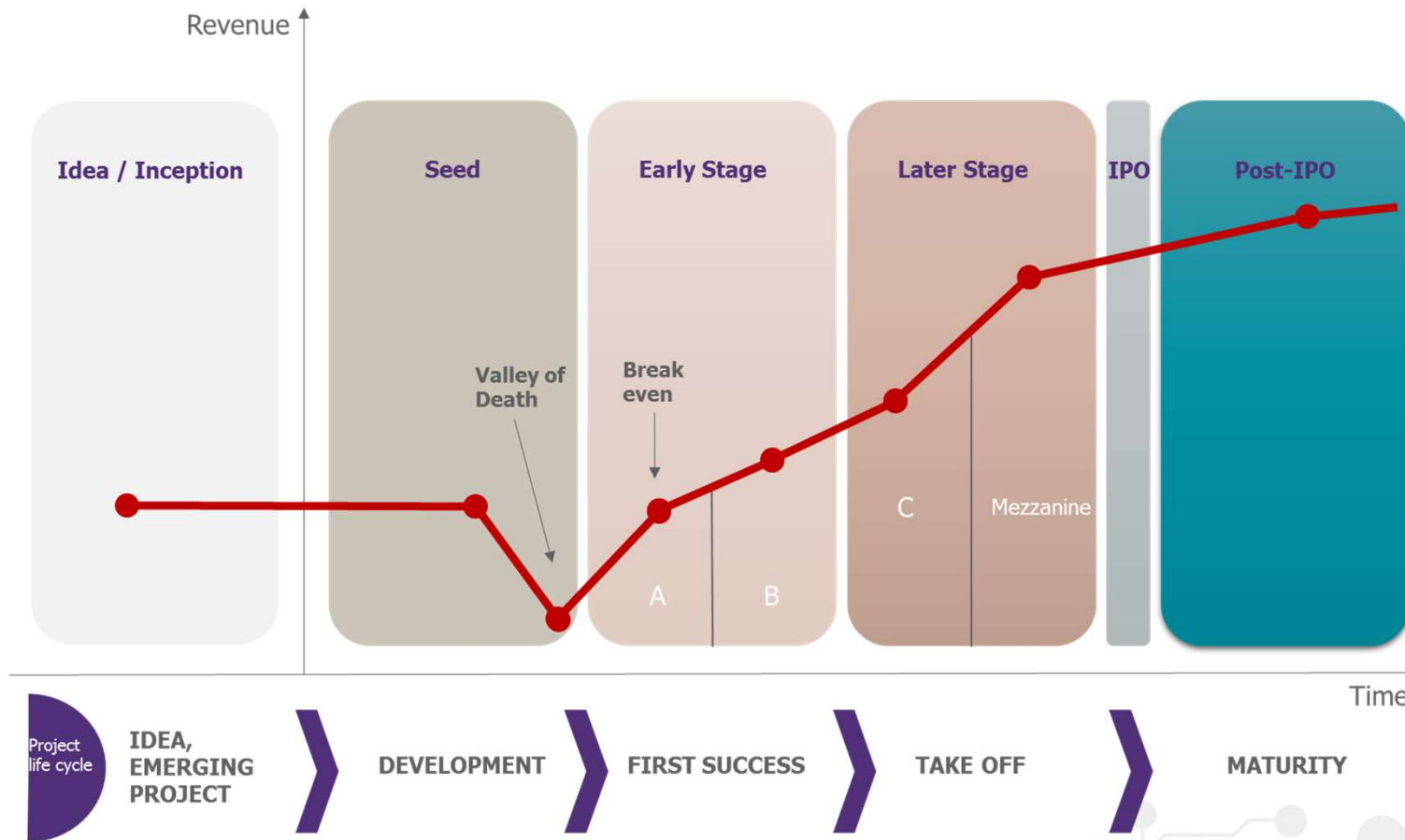
* SMEInst-13 2016-2017 - Phase 1
 * SMEInst-13 2016-2017 - Phase 2
 * DS-07 2017: Digital Security - Cybersecurity PPP - Threat and threat actors
 * DS-08 2017: Digital Security - Cybersecurity PPP - privacy, Data Protection, Digital Identities
 * SEC-13 BES 2017
 * CIP-01 2016-2017

** e.g. JEL, CII, CIR in France, SkatteFUNN in Norway, DDI in Italy, R&D Relief, credit for R&D personnel...

NIS Start-ups Growth Model



NIS start-ups growth phases

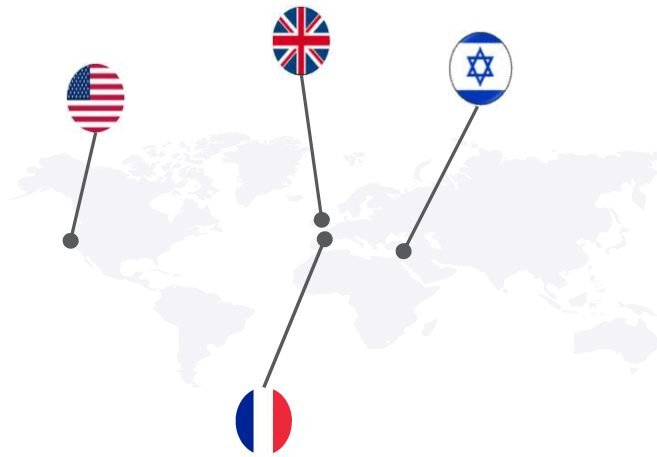


EU NIS Policy Framework and Regulatory Environment



- The Digital Single Market (DSM)
- NIS Directive / GDPR
- Trade regulations related to NIS procurement
- NIS certifications schemes
- **EU NIS market is fragmented and dispersed**

Successful cybersecurity start-up hotspots



Cybersecurity Innovation Hotspots

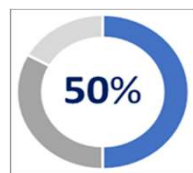
Key Success Factors

- Overall cybersecurity maturity (top 20 in GCI)
- Availability of funds (private & public)
- Bring innovation & talents near universities
- Liaise start-ups with customers in large companies
- Innovation ecosystem building

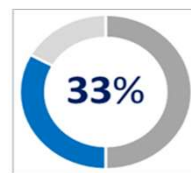
Technology/product focus for innovation



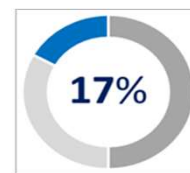
EU NIS START-UPS TOP 10 CATEGORIES



On mature topics



On new trends



On new usages

Emerging cybersecurity segments

- ✓ Deceptions
- ✓ Behavioural Biometrics
- ✓ Post Quantum Cryptography
- ✓ Awareness
- ✓ Industrial Security and Industrial IoT
- ✓ Automation
- ✓ AI

Foreseen future topics

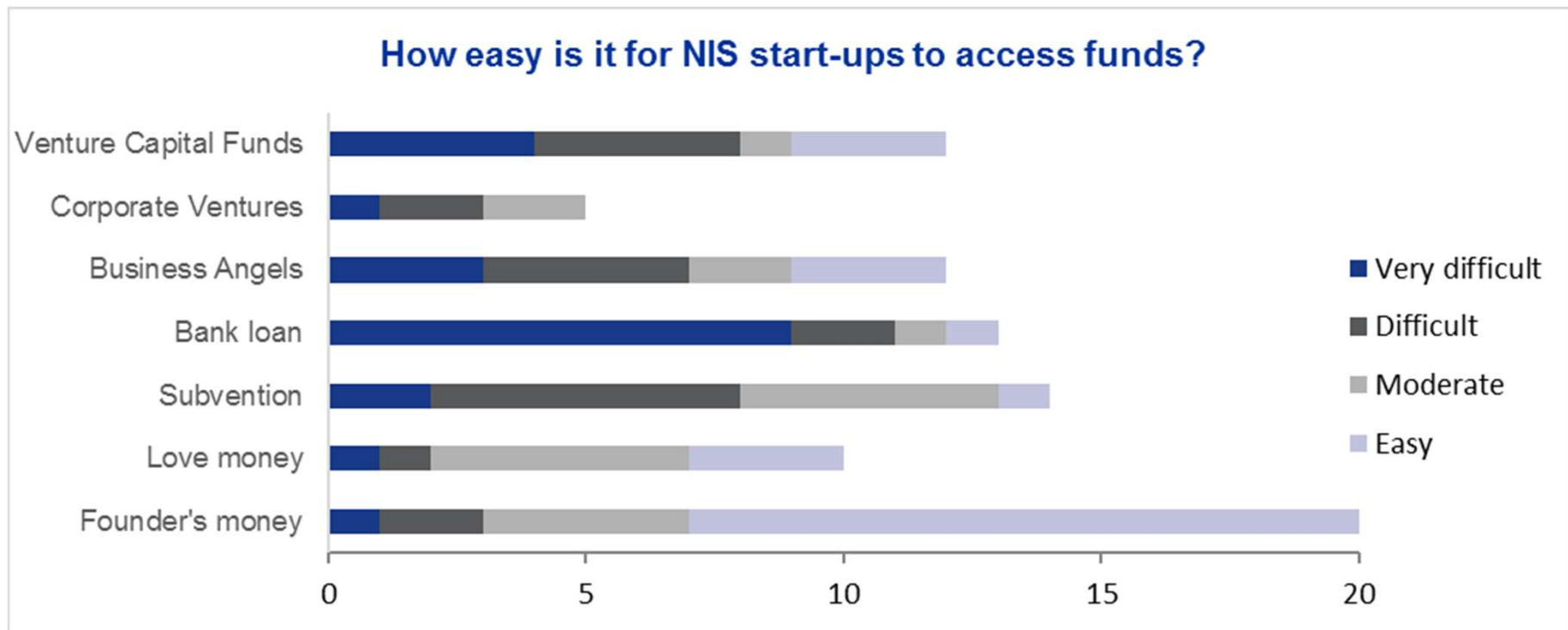
- Detection & response approach
- Cloud access security brokers
- Behaviour analytics
- Continuous security assessment
- EDR & automated detection/response
- Threat intelligence
- Anonymization & consent management (GDPR)
- Advanced threats
- Physical-cyber threats

Private funding and investment channels stakeholders



- Private investment and funding channels
 - **Equity funding:** founders, love money, corporate ventures/large groups, VC
 - **Non-equity funding:** Angels, banks/loans
- Access to funds is mostly difficult
- Investors specialising in cybersecurity
- More-than-money support
- Alternative ways of private funding - ICO

Private funding and investment channels stakeholders



Member state public funding stakeholders for NIS start-ups



- National public institutions in charge of economics, research and innovation
- National authorities in charge of cybersecurity
- Tax incentives or national or regional funding mechanisms
- Ecosystem building / platforms / networking

Funding and support mechanisms at EU level



- cPPP – R&D investment in cybersecurity topics
- H2020 - Cryptography (DS-06-2017), Advanced Threats (DS-07-2017), privacy, data protection (DS-08-2017) etc.
- Start-up Europe
- DG GROW: Europe's next leaders: the Start-up and Scale-up Initiative
- Many other financial instruments targeting micro/SME/Small mid caps

Funding and support mechanisms at EU level



68% of the NIS start-ups panel interviewed have not used EU funding mechanisms

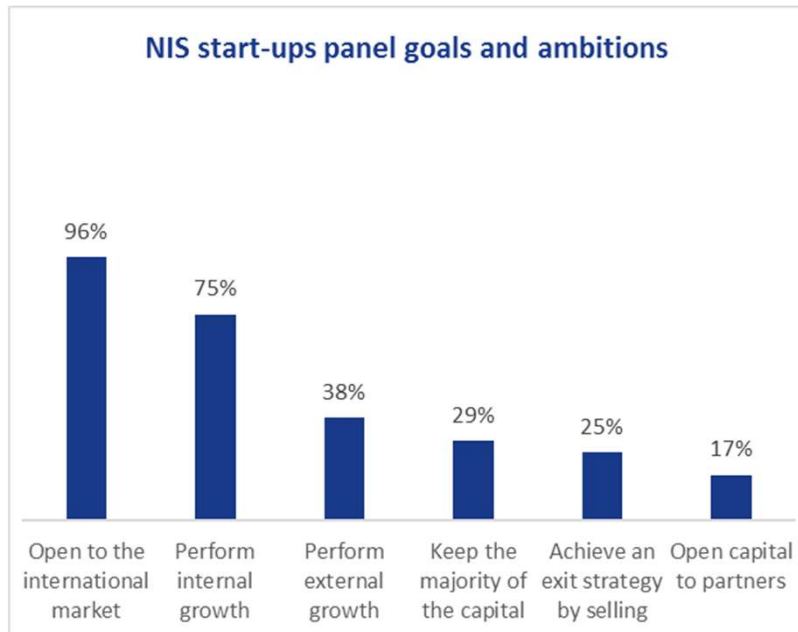


Analysis of the funding channels landscape for NIS start-ups

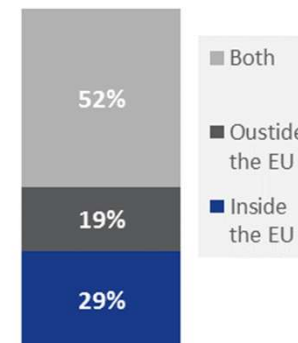


- Investors see cybersecurity sector as a **dynamic and attractive sector**.
- **National funding mechanisms** which have proven to be very efficient.
- The **EU is investing** a significant amount in innovation.
- Getting **funding remains one key challenge** for NIS start-ups.
- **Lack of balance in the funding** available for the different growth stages.
- Investors and big companies **lack cybersecurity awareness**.
- **Sales cycle is longer** in the cybersecurity sector.
- **European investors identify US and Israel cybersecurity start-ups** as big players in the NIS field rather than EU start-ups.
- The funds granted in the EU are **lower** than those offered in the US.

Funding landscape impact on exit strategy



NIS start-ups panel exit strategy : geographical goal



- Having EU NIS start-ups bought by non-EU companies remains the main trend.
- The sheer scale and number of European initiatives make it difficult to track their individual performance, however they have not reached their expected level of efficiency in aggregate.

More than money support



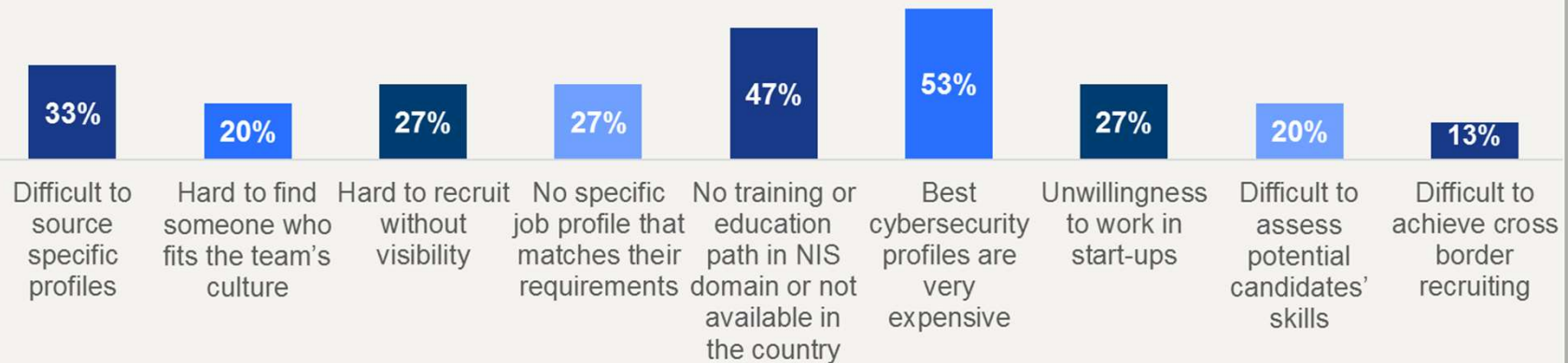
- Developing **working synergies between start-ups and companies**
- Developing the action of "**trusted third party**"
- Ensuring the **right talent** is available to NIS start-ups from creation to later growth
- Building a **strong networking** enables start-ups to bridge with the NIS ecosystem

The talent & skills challenge

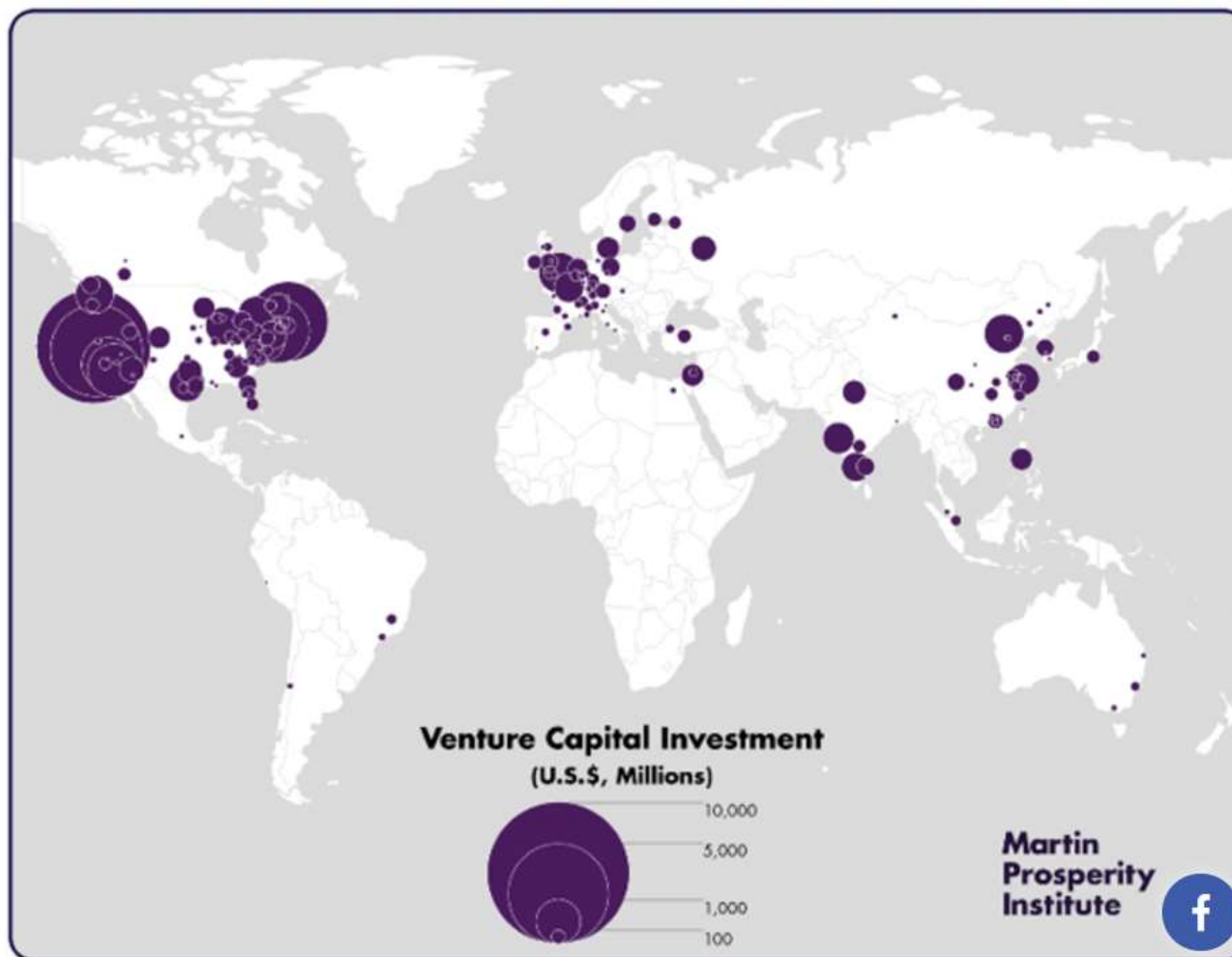


68%

of the NIS start-ups panel do not find easy to attract the best talents for their business



NIS Start-up ecosystem comparison

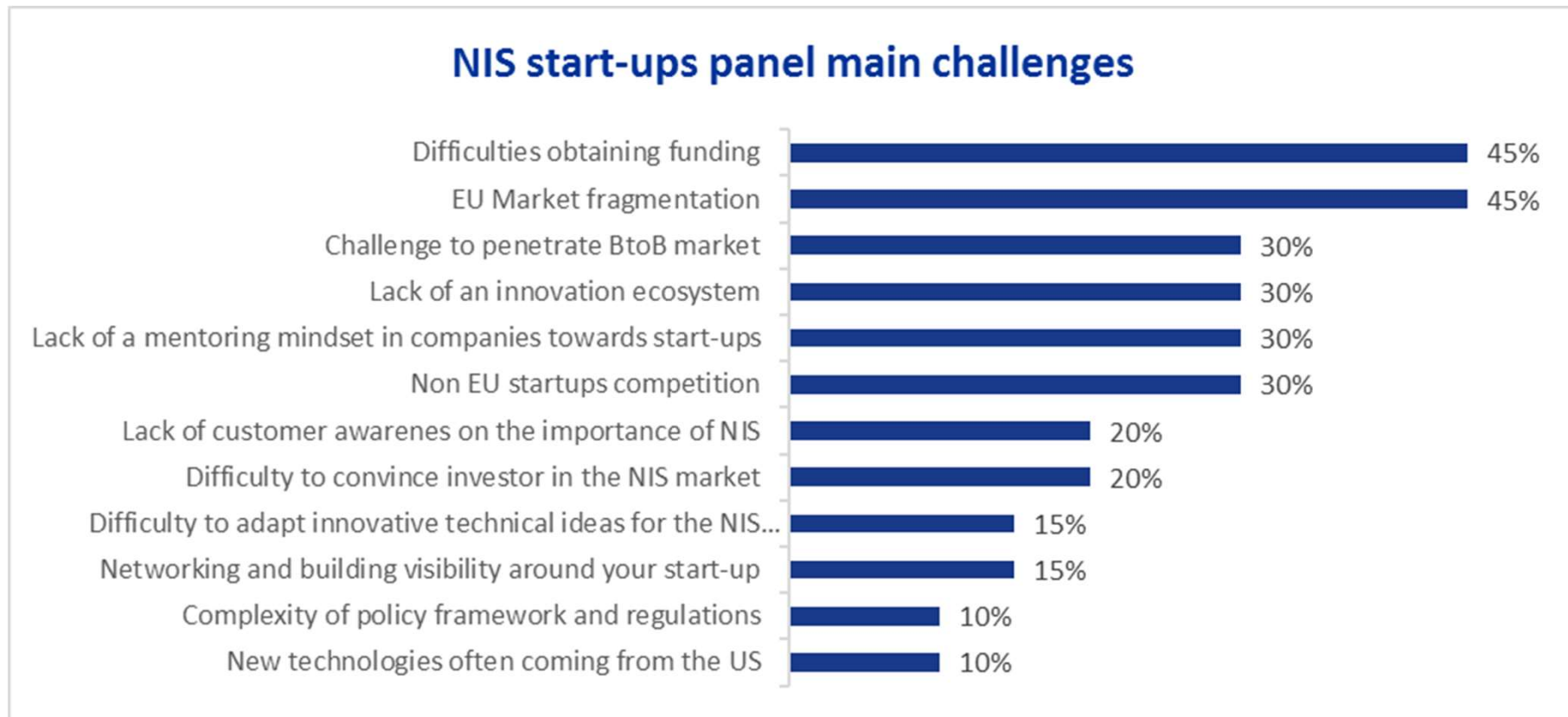


NIS Start-up ecosystem comparison



| Topic | EU | USA | Israel |
|-------------------|--|--|--|
| Overall landscape | <p>Good quality of education but risk averse</p> <p>Cybersecurity is a priority</p> | <p>Strong culture of risk taking</p> <p>Silicon valley – geographic proximity</p> | <p>Strong culture of entrepreneurship and right to fail</p> <p>Cybersecurity is national priority</p> <p>Cybersecurity is independent discipline</p> |
| Funding | <p>Strong players in seed and early stage funding</p> <p>Capital investment increasing</p> | <p>Lots of funding is available at each stage</p> <p>The early stages (series A and B) remain the most dynamic</p> | <p>Funding is easy to obtain</p> |
| Start-up strategy | <p>A “revenue first” based strategy in a fragmented EU market</p> | <p>A “growth first” based strategy in a wide US market</p> | <p>A “growth first” based strategy in a small Israeli market</p> |

EU NIS Start-ups main challenges



NIS-sector opportunities and obstacles



Opportunities

New regulations increasing the awareness and demand for NIS products and services

Upcoming guidelines, policies and frameworks to implement security by design (e.g. in IoT)

Cybersecurity attractive for investors/VCs

Sensitivity of cybersecurity topics favors EU products and personnel

Existing companies network and partnerships with universities facilitating innovation

National entities facilitate building trust between start-ups and private investors

DSM's goal of developing cybersecurity



NIS SECTOR



Obstacles

Lack of cybersecurity educational paths

Lack of business and entrepreneurial skills

Competition from better funded Israel and US NIS start-ups

Difficult to source the right cybersecurity skills

Recruitment obstacles due to sensitive domains and information

Being recognised in the market / credibility

Cybersecurity laws and regulations are not homogeneous in the EU

Customers and investors not understanding technical aspects of NIS domain

Understanding customer's expectations

Long sales cycles not aligned to start-up business rhythm

Lack of attractiveness and missing exit opportunities in the EU

Funding opportunities and obstacles



Opportunities

Increased availability of national or regional funds and tax incentives for innovation

European Funds investing in various VC funds

EU initiatives like Startup Europe and cPPP

Development of innovation ecosystems

Common Consolidated Tax

EU single company statute

New insolvency law



FUNDING MECHANISMS



Obstacles

Applying to EU funding is difficult

Lack of seed funding and growth stage funding

Lack of awareness for available EU funding options

Difficulty finding appropriate funds

Other opportunities and obstacles



Opportunities

Big company support in performing POC
Heterogeneous means of support (tutoring, access to premises etc.)
Support from incubators and accelerators
Material and/or skill support from big corporations
Startup Europe strengthening the business environment for web and ICT entrepreneurs



OTHER



Obstacles

Penetrate the BtoB market and win the first contract
Lack of an innovation network bridging start-ups and companies in some EU countries
Competition from better supported non EU start-ups
New or underlying technologies often come from the US
Lack of support or mentoring mind-set from big companies
Fragmentation of the EU market (e.g. language barrier)
Smaller domestic market due to fragmentation
Different labour laws when operating in multiple EU countries
High corporate taxation level
Non-homogeneous laws related to opening or running a business in the EU
Administrative procedures and associated paperwork are often complex



Thank you

 PO Box 1309, 710 01 Heraklion, Greece

 Tel: +30 28 14 40 9710

 info@enisa.europa.eu

 www.enisa.europa.eu

