

universidade
de aveiro



DISSERTAÇÕES

APSEI - TRABALHO #4

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01 **CONTEXT**

02 **ARCHITECTURE**

03 **BUSINESS ECOSYSTEM**

04 **INTELLECTUAL PROPERTY**

05 **OPEN SOURCE SOFTWARE**

06 **CYBERSECURITY**

07 **PRIVACY**

08 **ETHICAL ASPECTS**

09 **HYPERSCALERS**

10 **NETWORK EFFECTS**

100



Distribuição de Serviço Docente
frontoffice
beta, v0.4

ENTRAR

Notícias
Apresentações
Dissertações
Opções

2022/2023
2023/2024

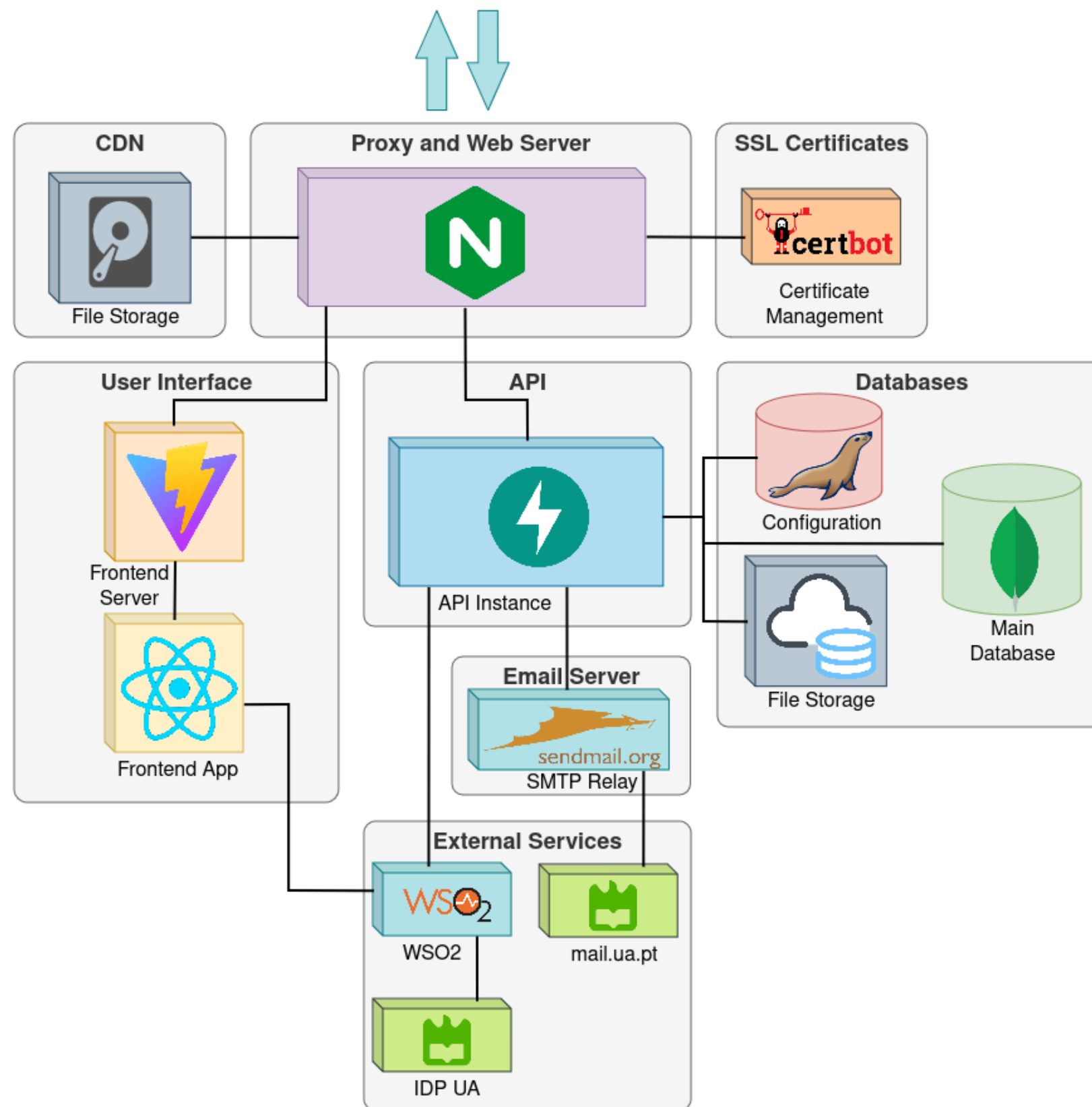
{ LISTA DE DISSERTAÇÕES }

Legenda:  -Escolhida

1 2 3 4 5 6 7 8 9

ID	Título	Curso(s)	Orientador	Co-Orientador	Empresa	Area		
226	Porcupine: Visualization and Analysis of Multimodal Interaction	MIECT/MECT	Samuel de Sousa Silva	-		I-Arquitectura dos Sistemas Computacionais	<input checked="" type="checkbox"/>	
224	Event management and announcer system for DBOX software	MEET	Miguel Augusto Mendes Oliveira e Silva	Mariana Campos	Voltalia Portugal SA	I-Genérico	<input type="checkbox"/>	
223	DESAFIOS NA ADAPTAÇÃO DO ITIL ÀS METODOLOGIAS ÁGEIS: CONTRIBUTOS PARA UMA IMPLEMENTAÇÃO PRÁTICA	MEI	Osvaldo Manuel da Rocha Pacheco	-		I-Sistemas de Informação	<input type="checkbox"/>	
222	HSI Solution for High Integrity Automotive E/E Systems	MIET	José Luis Costa Pinto Aguiar	Tiago Serra	Bosch Car Multimedia	E-Electrot. Geral	<input checked="" type="checkbox"/>	

ARCHITECTURE



- The system was developed using high-level recent frameworks and technologies, with code maintainability being one of the most important aspects of the project.

Architecture :

- Web Application (React + Vite)
- Reverse Proxy and Web Server (NGINX)
- Backend API (FastAPI + Python)
- Storage Layer (MongoDB + MariaDB + File Storage)
- Serviços Externos (IDP UA + Mail Server)

BUSINESS ECOSYSTEM

Software Licensing
agreement with
other educational
institutions



Maintenance of
the service and
adaptability to the
institution's
rules



Suppliers

- Infrastructure (local or remote servers)
- Storage solutions

Selling Point

- Competitive and reliable solution to manage the dissertation season for educational institutions

Regulatory Framework

- Dealing with personal and academic data
- Privacy and Security
- Intellectual Property
- Internal institution rules

INTELLECTUAL PROPERTY

- Intellectual property is a unique right that legally protects creations made from human knowledge and provides exclusive rights to their creators.
- Software is protected by copyright according to Directive 2009/24/EC and Decree-Law No. 252/94.
- Programs created under a work contract belong to the company, including those from the University of Aveiro.
- The logo serves to identify and differentiate in the market the entity (individual or legal person) that provides services or sells products.
- We have to search again in the INPI databases for checking if they are not identical or similar to another already registered.

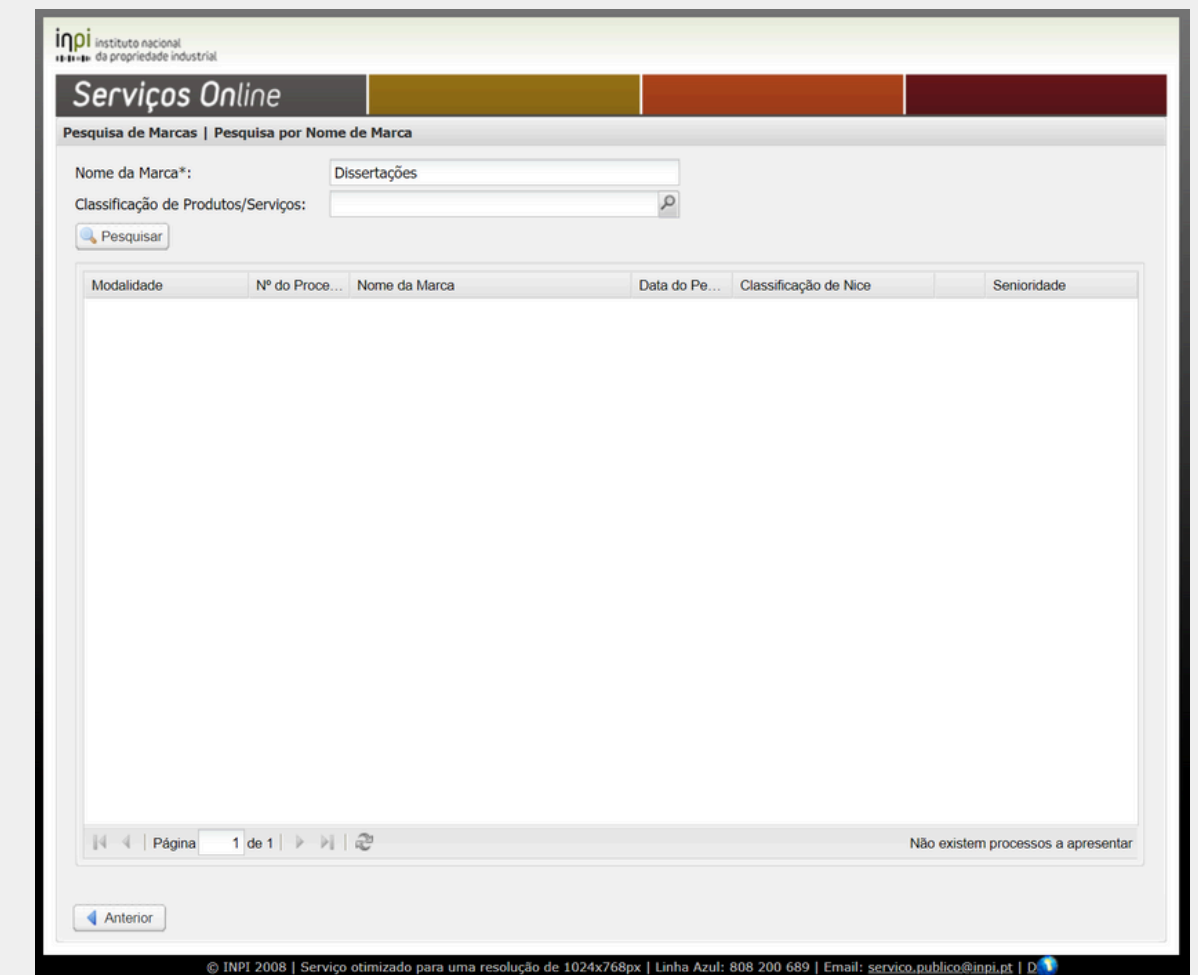


Figura 4: Logótipo com texto



Figura 5: Logótipo

OPEN SOURCE SOFTWARE

The term **open source** refers to something people can modify and share because its design is publicly accessible.

For our project, we chose to use the Apache License v2.0



The software's MongoDB and MariaDB might bring some conflicts, because of their license and only if they're considered derivative work, but we're only using them as a system to store data, without changes.

Some open source software that we used and respective licenses



BSD



MariaDB



SSPL



React



CYBERSECURITY

- Attacks: Mass Scale Phishing, Spear-Phishing, XSS, brute force attacks, DoS, rogue employees, and zero-day vulnerabilities
- Key defense measures include 2FA authentication, continuous monitoring, staff training and awareness, controlled admin access
- ISO27001 Certification and OWASP ASVS compliance
- Manage the system's and institution's reputation in case of attack
- Compliance with EU Cybersecurity directives (NIS 2) and GDPR, such as informed user consent and security principles by design



PRIVACY

Two types of data being used

Academic User Information:

- Provided by the client's IdP or manually inserted into our base IdP;
- Full name, internal university ID, number of ECTs, etc;
- Mostly private.

User actions performed on the platform:

- Logs and information generated while using the platform;
- Claims to dissertations, login times, data of the dissertation, etc;
- Mostly public.

All of this information might be private or public, depending on the specific university's regulations.

Techniques for implementation:

- Remain inside the client's network;
- Make use of implemented security features;
- Do not allow authentication from unverified or insecure identity providers;
- Cypher data on the application itself and never provide plain text elsewhere.

Usage of personal data from the academic members must follow the rules and regulations of the specific university. If these do not exist, they would need to be created, agree upon and documented.

In events of legal data requests, a Data Protection Specialist would need to evaluate the relevancy of the data for the specific circumstances.



ETHICAL ASPECTS

- **Ethical Aspects to Consider:** Ensuring privacy and data protection through consent mechanisms while upholding equality and transparency in the allocation process are vital ethical considerations for the project.
- **Regulations to Adhere to:** Compliance with regulations such as GDPR and Personal Data Protection Law is crucial for secure data handling, along with alignment with academic regulations to maintain integrity and ethical standards across universities.
- **Academic Ethical Aspects:** Each university has its own set of regulations and ethical aspects that need to be followed, so it's required to ensure that the platform is in compliance with all of them.



HYPERSCALERS

Separation between processing and storage

Cloud Processing:

- To be avoided, as it can cause integration problems with the client's other services;
- Can be used if the client does not possess the ability to safely host the service internally.

Cloud Storage:

- Intended to be used in most of the implementations;
- Does not pose serious data breach threats as the data itself is cyphered;
- Allows for more flexible and scalable storage aproach.

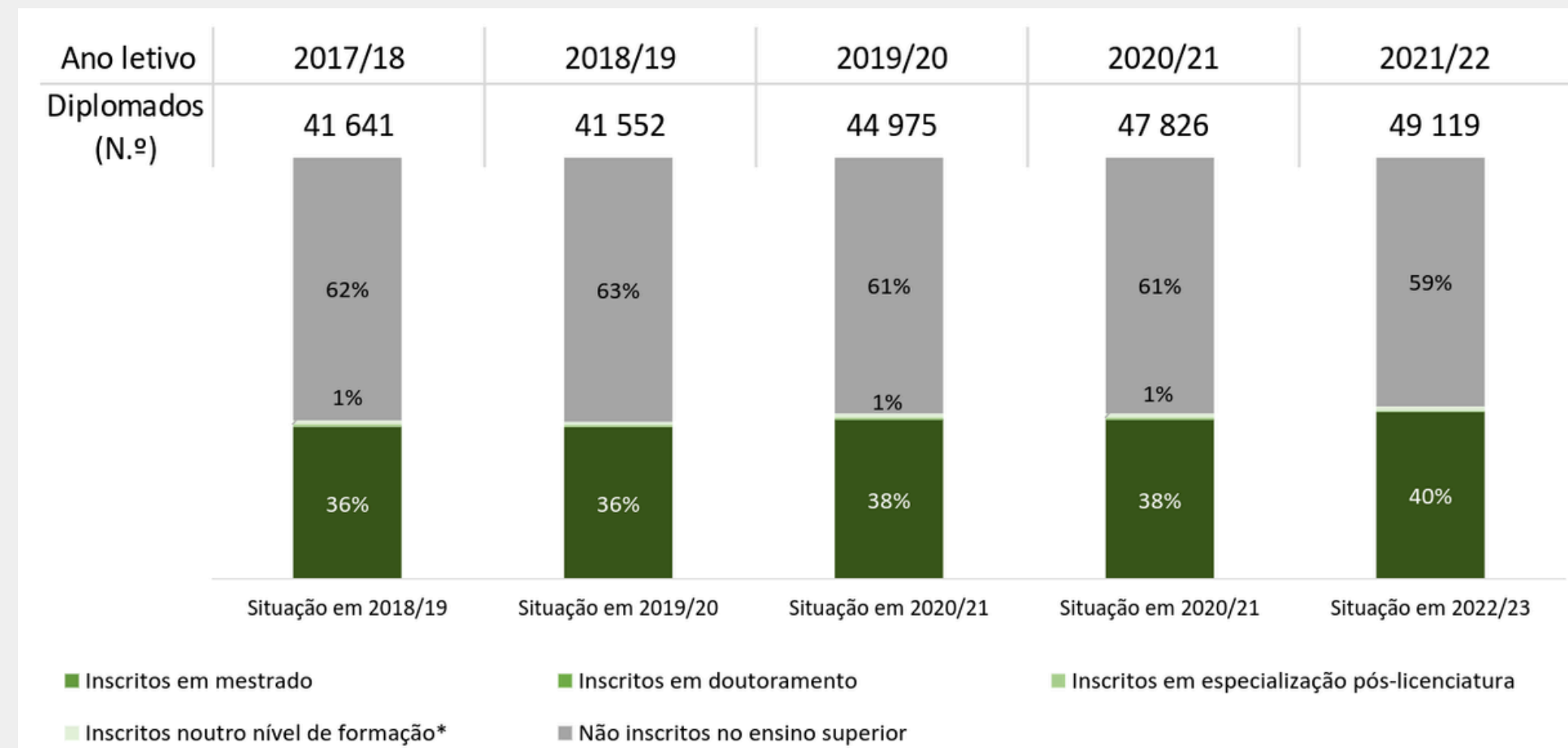
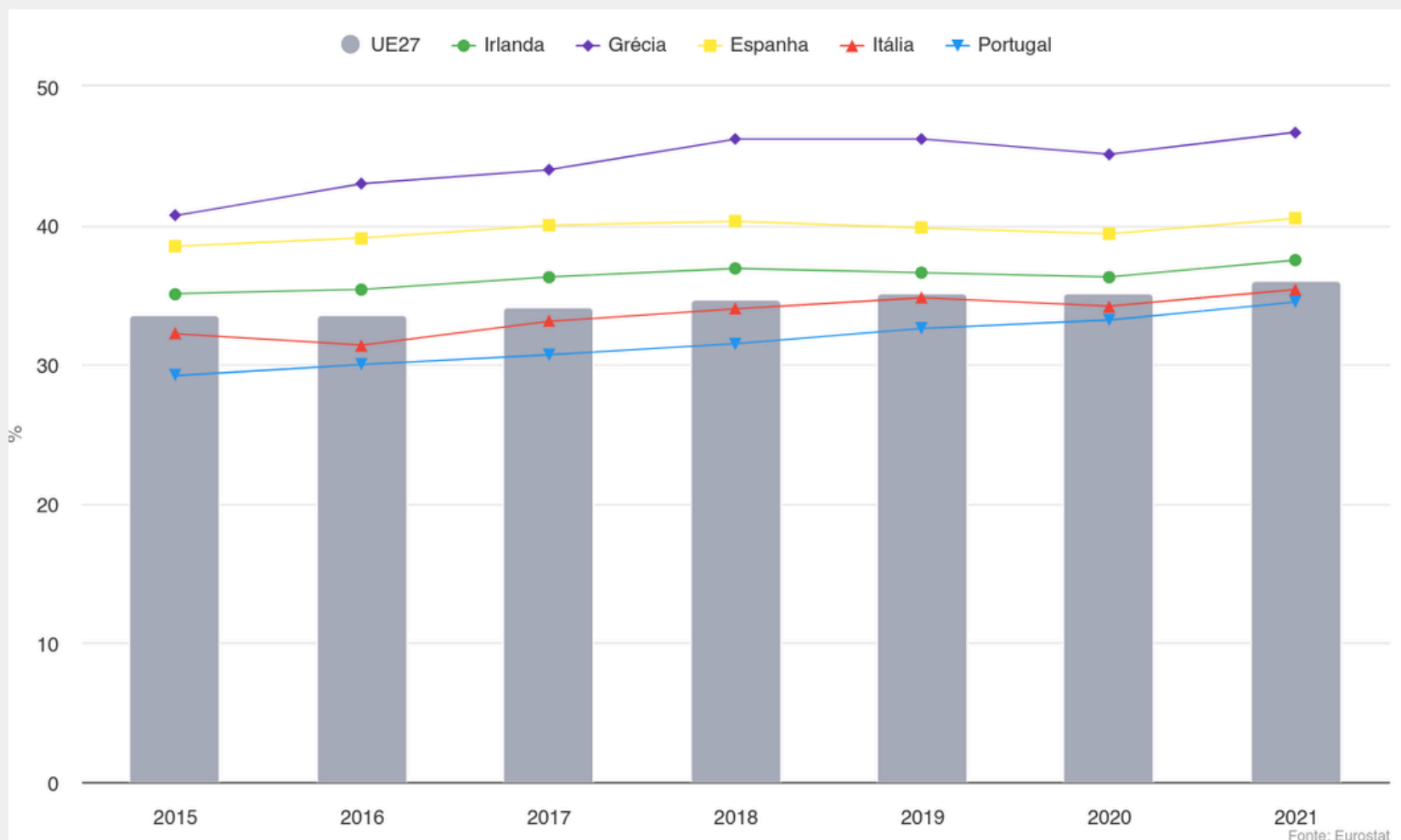
The European Legislation is optimized to allow companies to benefit from the usage of these types of services, but it the particular Hyperscaler must guarantee the same quality and security of the implementation when compared to a local alternative.



NETWORK EFFECTS

NETWORK VALUE

- As usage of a product grows, its value to each user also grows. -> As the **user** base grows, the network value **increases!**
- The user base is bound to increase



NETWORK EFFECTS

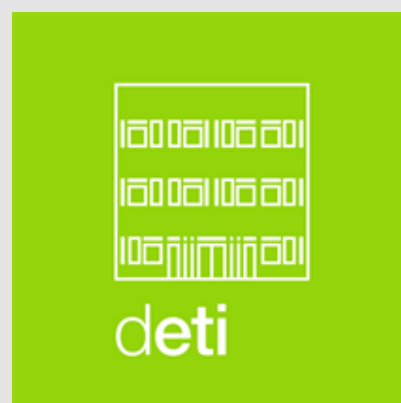
POSITIVE EFFECTS

- Operational efficiency and communication
- Standardization of processes
- Quality of research
- Acquisition of valuable data
- Inter-university impact

NEGATIVE EFFECTS

- Institutional isolation
- Inconsistencies between systems
- Technological dependence





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THANK YOU!



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