

A Work Project, presented as part of the requirements for the Award of a Master's degree in  
Management from the Nova School of Business and Economics.

**How can Center of Digital Inclusion and its  
technological educational program Apps for Good be  
evaluated from an expansion point of view?**

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## **Abstract**

The Center for Digital Inclusion is a non-profit organisation focused on increasing equitable access to digital resources and skills in Portugal. Apps for Good is one of the educational programs that operates as a business unit of CDI and has been operating in Portugal for eight years. Apps for Good is a program that creates the opportunity for young people to engage in solutions-oriented app designing around a social, environmental, political, or cultural issue of their choice. The endgame objective of the program is national expansion via government adoption. To achieve this objective, Apps for Good must continue to show that the project shows impressive impact reports as well as continue to increase their market share. Currently, the goal is to better understand where the organization is now to be able to develop a good and established plan for the future keeping in mind its sustainable growth.

## **Keywords**

CDI; Apps for Good; Education; Diagnostic; Sustainable Growth; Organisational Analysis.

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# **1. CONTEXTUALISATION: WHAT IS THE CURRENT ENVIRONMENT OF CENTRE OF DIGITAL INCLUSION?**

## **1.1. UE Perspectives for the Digital Society**

### **1.1.1. Europe's Digital Decade**

The permeation of technology in our day to day lives is ever growing. The number of internet users worldwide has increased by roughly 2.87 billion people in the last 10 years to reach 4.95 billion, over half of the world's population (Kemp 2022). The uniquely fast pace of technological evolution that has happened since the creation of the first computer systems in the early 1960s, has had incredible impacts on the ways we do business, the ways we participate in civil society as well as the ways share information (Salmela-Aro and Motti-Stefanidi 2022). Due to the ever-evolving nature of technological influence, different countries have dealt with this in different ways. The European Commission has used the language of "Digital Decade" to describe the context of their digital strategies until 2030 (Commission 2022). The goal of these strategies is to move European countries with the tide of digital revolution focusing on people, business, and the environment. The commission has highlighted that data, technology, and infrastructure are the three main pillars of their strategy, in which they aim ensure that technology is used to higher the standard of living for citizens (Commission 2022).

In terms of skills, the commission divides the needs into two categories. First, the need for skilled labour in the digital workforce, and second the need for basic digital skills amongst citizens. The need for greater digital citizenship is in conversation with the digitalization of social services. The digitization of public services is one of the most aggressive goals set out by the commission. On top of offering key public services 100% online, they also plan to increase e-health services as well as digital identity schemes. The private sector is not far behind

in their goals for digital transformation. As the commission and nation based governmental bodies look to create more attractive economic environments for business, by increase tax incentives for tech-based companies and educational streams, they are also looking to the public sector to co-invest in this digital transition through their own up-take in technical solutions, and innovative solutions.

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One of the uniting forces of all the previous initiatives presented is the investment in secure and sustainable infrastructures. For digital transformations to be effective, countries must have the necessary connectivity to fully make use of the digital opportunities. The commission makes clear that they intend to increase Europe's self-sufficiency when it comes to resources such as semi-conductors as well as data storage infrastructures. The greatest challenges faced by the commission with these pursuits is the lack of uniform needs across member states. Portugal sits just below the European average when looking across the components of human capital,

connectivity, integration of digital technology and digital public services (European Commission 2022). Although there is relatively high connectivity in the country compared to nations with similar profiles to Portugal such as Lithuania and Belgium, Portugal struggles with digital public services and integration of digital technology (European Commission 2022).

### ***A. Digital Citizenship***

The concept of digital citizenship is the identity based on participation in the digital world that privileges rights and responsibilities as well as liberties. Digital citizenship is unavoidable in societies where people connect and share information via the internet as well as who subscribe to digital identification platforms and services (Imanalieva 2021). The EU Commission acknowledged the need to create a framework around the factors that contribute to digital citizenship. A high priority of the Commission is to ensure that EU values are promoted, protected across the digital landscape (Commission 2022). Key aspect of this are the equitable access to internet, digital skills, digital public service and to fair working conditions. Agency on the part of the individual is also privileged. The commission states that the online environment should be fair and safe, and that technology should be used to empower and not oppress. Finally, sustainability is championed and the language of the ‘green transition’ is used to describe this digital transformation (Commission 2022).

### ***B. Digital Literacy***

Digital literacy is a foundational element to digital citizenship. In order to effectively use technology and participate in the digital society, it is imperative to understand how to operate devices, analyze and share information, as well as build community (Imanalieva 2021). The concept of digital literacy is also a pillar in the equitable growth of technologically influenced societies. The gatekeep of information has historically been used as a weapon of oppression

and digital revolution is no exception. Building a more digitally literate community is as important an investment as any other infrastructural project and there the educational systems across the EU have a large role to play in the digital decade (Commission 2022).

### *C. The Path to Digital Decade*

To enable these digital transitions to occur, the commission has put in place a plan of action which includes policies and metrics that will help enforce and monitor digitization initiatives (European Commission 2022). The Commission's strategy is first developing trajectories and goals with the member states. The member states then work on the national level to create a roadmap for the process of making the goals a reality. The key elements that will be needed to ensure success in this plan is a shared monitoring system, consistent reporting, evolving support structure that can help create equity across the member states (European Commission 2022).

The Digital Services Act is one from of governance policy the EU has instated to jump start the growth of the tech sector in the EU as well as to protect citizens from looming threats (European Commission 2022). On the level of the citizens, this act is supposed to protect rights, make sure that prices remain fair, and to gatekeep illegal content. For the providers of digital services, this act can increase ease of business and scaling up as well as to create an environment of certainty. For the society at large there will be increase transparency for the ways technology interacts with public and private services, there will be greater safeguards against malicious actors, and there will be a greater advancement in the connection between consumer and provider that is ethically aligned with European values (European Commission 2022).

#### **1.1.2. Teaching Profession Transition to Digitalisation**

CESI, the European Confederation of Independent Trade Unions, supports more social integration inside the EU and better working conditions for European employees (CESI Europe

Academy 2021). Concerning the education sector, a high-level focus especially regarding the development of the teaching career is conveyed, especially after 2018 when it was issued the Manifesto for the Teaching Profession.

While focusing on the analysis of the transformations that the practice of digital education will have on the teaching profession, CESI believes that to succeed, the eagerness to progress can not evolve without combining a set of recommendations and conceptions, since these will allow further understanding of the real-life implications of digitalizing this profession (Manifesto for the Teaching Profession: Horizon 2025 2018). To better enable the development of digital education and digital skills in schools there is the need to consider:

- A. From a general point of view, many countries from the EU need to find a way to provide better work conditions for teaching, mainly focused on “recruit and retain more talented young persons into this occupational field and to counter widespread teacher shortages” (Digital Education and Digital Skills 2022), since this would include increasing the value of the profession, guarantee decent salaries and overall recognition of their contribution to society.
- B. Using digital technologies in teaching should go further and, therefore, reach a curriculum standing where students would combine their school subjects to be more fulfilled citizens (CESI: European Confederation of Independent Trade Unions 2018)
- C. Training teachers should be one of the main solutions a country or school might adopt. It is believed by CESI (2022) that the general goal might not be reached if modern teaching is not secured by efficient training, thus “teachers must receive high-quality basic digital training and they must have opportunities to perfect their digital skills during their careers”.
- D. A requirement will also be to ensure that digital equipment is provided not only to students and schools but with the same level of importance to teachers since this will allow the closing of digital gaps without the need for investments from self-contained incomes.

E. Lastly, looking forward, the students will reap the future benefit as digital literacy “helps employees become more productive and allow them to develop professionally” (European Confederation of Independent Trade Unions 2022).

Additionally, to ensure the successful transition into a more digitalized era teachers and students cannot be the only ones participating in the change. Even though teachers and students are seen as integral parts of the digitization strategy, the government bodies that oversee education need to “create environments where digital technologies and media are used for learning, communication and cooperation between pupils, teachers, other staff members, parents and external partners” (Schola Europaea - Office of the Secretary 2018).

When given the appropriate resources, educational staff can provide the most effective educational experiences and guarantee that every student meets their educational targets (European Commission 2019).

#### ***A. Digital Education Action Plan***

“European countries need to continually review and develop new strategic policies and measures to meet the new demands for high-quality digital education” (Digital Education at School in Europe 2019).

- Early in the XXI century, the European Parliament organised recommendation on the Key Competences for Lifelong Learning (European Commission 2019) that digital would be an important component for the development of any citizen. Following this thought, digital competence was one of the eight essential competencies mentioned where it was stated that it “involves the confident and critical of Information Society Technology (IST) for work, leisure, and communication” (Official Journal of the

European Union 2006) which allows settling that digital, from an early stage, was already seen as a fragment to achieve a successful learning experience.

In light of the mission of the European Schools shared in April 2013 and trusting the idea that learning and digital technologies are no longer detachable (Digital Education Vision for the European Schools System (DEVES) 2018), the purpose and vision of European Schools' stated that "every pupil and student develops throughout his/her European School education the digital competence to foster the confident, critical, responsible and creative use of, and engagement with, digital technologies for learning, at work, and for participation in society" (Schola Europaea - Office of the Secretary 2018).

A decade later 30th December 2020, the European Commission issued and adopted the Digital Education Action Plan, a renewed European Union policy initiative (Digital Education Action Plan (2021-2027) 2020).

- This action plan was developed under two main strategic priorities. One focuses on "fostering the development of a high-performing digital education ecosystem" and the second one focuses on "enhancing digital skills and competencies for digital transformation". Both these topics combine themselves into a set of actions that try to reach the answer to the question "what will the European Commission do to achieve this?" (European Commission 2020).

The document came about as a result of stakeholder consultation and open public consultation to acquire what were the main topics to tackle (Dimitrov 2020). Following this process, they concluded that increasing digital competency is crucial while developing a more operational and intelligible approach to digital education (2020), and they focused on this in six of its thirteen actions, namely actions number 3, 5, 6, 7, 8 and 9.

Based on the official publication of these actions by the European Commission (Digital Education Action Plan (2021-2027) 2020), it is possible to further develop these six actions:

- Action 3: entitled *European Digital Education Content Framework* wishes to combine the acknowledgment of the continuous digital change on the relationships maintained between the supply side - industry and the public sector - and those on the demand side - teachers and students.

It should be noted that the tensions around privacy and data protection for educational materials are still unresolved. However, identifying the areas where EU action might add value and collaborating closely with stakeholders to identify the best solutions are thus the major objectives. (Digital Education Action Plan – Action 3 2020).

- Action 5: Following the purpose under the *Digital Transformation Plans for Education and Training Institutions* this achievement hopes to achieve several outcomes that include boosting digital capacity in educational establishments, providing opportunities for professional development to teachers, and enabling professionals to recognize strengths and weaknesses in their digital abilities (Digital Education Action Plan – Action 5 2020).
- Action 6: named *Ethical Guidelines on the use of AI and Data in Teaching and Learning for Educators* wants to increase awareness of potential hazards while assisting teachers and educators in comprehending the potential that applications of AI and data utilization in education may have.

A formal publication titled "Ethical Guidelines on the Use of Artificial Intelligence (AI) and Data in Teaching and Learning for Educators" (Directorate-General for Education, Youth, Sport and Culture (EU) 2022, Redecker 2017, Redecker 2017) was released by the Commission in

October 2022 to ensure the unveiling of this path. The publication seeks to teach, assist, and support teachers on the matter (Digital Education Action Plan – Action 6 2020).

- Action 7: labeled Common Guidelines for Teachers and Educators to Foster Digital Literacy and Tackle Disinformation through Education and Training kept its main initiatives start with the release of guidelines that offer helpful advice and lesson plans for various academic years and are intended to assist teachers and educators in promoting digital literacy – named “Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training” (Directorate-General for Education, Youth, Sport and Culture (EU)).

Additionally, they come with a final report that compiles the key conclusions and suggestions of the Expert Group. They are intended for primary and secondary teachers, regardless of whether they have a specialized understanding of digital education (Digital Education Action Plan – Action 7 2022).

- Action 8: aiming to give answers to the need of *Updating the European Digital Competence Framework to include AI and Data-Related Skills*, therefore the “DigComp 2.2: Digital Competence Framework” (Vuorikari, Kluzer e Punie 2022) was released to empower all individuals to become knowledgeable, ethical, and comfortable users of digital technology driven by artificial intelligence systems and impact on self (Digital Education Action Plan – Action 8 2022).
- Action 9: designated *European Digital Skills Certificate (EDSC)* The EU looked at the creation of EDSC, which is based on the DigComp, with the concept that a fast-evolving, technologically driven economy and society require everyone to have digital skills in consideration.

The major objectives are based on projections, such as guaranteeing that 80% of the population has minimum basic digital skills by 2030 and that 70% of those aged 16 to 74 have such competencies by 2025. (Digital Education Action Plan – Action 9 2022).

Several sources reinforce the idea that technology has invaded every aspect of a teacher's employment, including instruction and assessment, evaluation, engagement and cooperation with families and coworkers, and the development and transmission of information and resources (European Commission et al. 2019).

As a consequence of the situation, this act was released by the European Commission bearing in mind the need for adaptation of schools, teachers, and students to this new digital reality and therefore it reinforces this goal by compromising on “making better use of digital technology for teaching and learning; developing the digital competences and skills needed for living and working in an age of digital transformation; and improving education through better data analysis and foresight” (European Commission - Education Package 2018).

### ***B. Digital Competence Framework of Educators***

According to research, pedagogical breakthroughs seldom succeed if teachers are not granted the training and resources needed to bring them to reality (European Commission et al. 2019), consequently, the EU currently highlights digital competence across many frameworks and has provided details about it regarding the educational sector (Digital Education Vision for the European Schools System (DEVES) 2018) – as can be seen from the context previously provided.

In the specific analysis, it is important to highlight the development of DigCompEdu – Digital Competence Framework for Educators – that is described by the European Commission (EU Science Hub: Digital Competence Framework for Educators (DigCompEdu) 2020) as a

framework that defines what it means for educators to be digitally proficient and was a product of the teamwork of many who contributed to shaping (Redecker 2017).

The teaching and learning practices associated with teachers' digital literacy are also handled in other official documents (Digital Education at School in Europe 2019), such as the European Framework for Digitally Competent Educational Organisations where SELFIE – “a free, easy-to-use, customizable tool to help schools assess where they stand with learning in the digital age” (European Commission 2022) – is part of.

Briefly, the main goal behind the DigCompEdu official document is presenting an answer to the overall European need of guaranteeing a set of digital knowhows that are entirely related to the teaching profession since it will allow increasing the potential of the technologies while reinforcing the growth and dynamization of education (Redecker 2017). The performance of teachers is expressed through a framework that distinguishes six different areas in which educators' Digital Competence is expressed with a total of 22 competences, provided in [Appendix 1](#).

In sum, all the structure aims to provide a valid and easy to follow guideline that answers all lack of investment and understanding underlying in the topic.

This all supports the idea that teachers who want to set an example for the next generation must be digitally literate and capable of using technology in a self-assured, critical, and responsible manner (European Commission et al. 2019) while not forgetting that the “educational staff have a decisive impact on learners' achievements and motivations and consequently learners' competence development” (European Commission 2019).

### **1.1.3. The European Social Economy**

The social economy encompasses a variety of businesses, organizations, and different legal entities. The social economy business models aim at reinvesting most of the profits into the organization or a social cause. In Europe social economy enterprises are around 12.8 million: they represent 10% of all businesses and employ around 13.6 million people, which represent about 6.2% of the employees in the European Union (European Commission 2022). The social economy does not just rely on paid workforce but mobilizes volunteers whose activities are equivalent to 5.5 million full-time workers (European Commission 2022). In Europe, more than 160 million people are members of social economy enterprises that, for the majority, aim at social cohesion, rural development, environmental protection, and agricultural and third countries' development (European Commission 2022). Another characteristic commonly shared by European social economy organizations is their size since they are mostly micro, small, and medium-sized enterprises.

#### ***A. The vision of the European Commission on the importance of the social economy***

Since 2011, the European Commission has launched a large number of actions to support the development of the social economy to address societal challenges (European Commission 2021). Over the last decade, the social economy ecosystems have developed remarkably and yet much work remains to be done to unlock the full potential of this important sector (European Commission 2021). Therefore, in 2021 the president of the European Commission Ursula von der Leyen officially mandated the development of a European action plan for the social economy intended to enhance social investment, support social economy actors and social enterprises to start-up, scale-up, innovate and create jobs (European Commission 2021). To lay the groundwork, the EU started by collecting feedback and opening a constructive dialogue with European institutions, expert stakeholders, and citizens to provide input for the action plan.

## ***B. The vision of the European Commission on fostering digitalization for digital education***

Specifically, the input from social enterprises was that many of them are yet to undergo a digital transformation as they lack expertise in digitalization. Moreover, a lack of visibility of the role of the social economy sector in digital education was highlighted. Catalyst 2030, a fast-growing global movement of people and organizations committed to achieving the SDGs of the UN by 2030 (Catalyst 2030 2022), stressed the need of having social enterprises promoting digital education: a vital tool to empower the young generation for its precious future. Furthermore, Cooperatives Europe, the European regional office and voice of cooperative enterprises in Europe, which represents 84 member organizations (Cooperatives Europe 2022), stressed that the currently existing digital gap should be addressed from a gender perspective (European Commission 2021).

The Commission, upon analyzing inputs and feedback, agreed on the urgency of supporting social economy organizations in their digitalization efforts and recognized it as an area for further capacity building and mutual learning (European Commission 2021).

### **1.2. Digital Sector in Portugal**

#### **1.2.1. Digitalisation in Portugal**

Portugal's progress in digital transition has been notable in the past few years, however it is still far behind the ideal performance as a digital country. Usually, it is positioned under its peers, the 27 Member States of the EC (OECD 2021). To increase this position, the country has to leverage usage of digital technologies and improve the digital knowledge of its inhabitants, although there is a rising risk of escalating socio-economic inequalities that needs to be addressed (OECD 2021).

One of the main issues Portugal is facing regarding work performance is the low productivity rate: in 2021, Portugal was the 4<sup>th</sup> least labour productive country in the EU (Eurostat 2022). This indicator has been falling since the financial crisis in 2008, and in 2020 the Portuguese productivity by hour worked is almost half of the 27 Member States average (23.5€ vs. 42.1€) (Pordata 2022). Boosting digital skills could be one factor to rise these indexes, as productivity increases when workers are more skilled, as they are more willing to use digital technologies (Barros 2021).

One interesting aspect is that in 2020, 99.9% of total enterprises in Portugal were considered SMEs (Pordata 2022), and, according to CaixaBank, the level of productivity in these companies is less than half than in large companies, as the second ones invest more in intangible assets (CaixaBank Research 2022).

Furthermore, until 2030, 50% of time spent in labour activities will potentially be automated, and this number can increase up to 67%, if considering new technologies (Nova SBE | CIP 2019). Indeed, at least 20% of jobs risk automation in the next 20 years, as the Portuguese industry environment includes a lot of repeated tasks and low skill requirements in various sectors, mainly in the manufacturing industry, commerce and retail, and agriculture (Nova SBE | CIP 2019). This problem is even bigger in the rural areas than the urban areas – 54% for Lisbon Metropolitan Area and 62% for Alentejo. So, it is crucial to improve digital skills on the workforce, as a considerable number of people will either have to change its job position or upgrade their education level in order to follow these trends (Nova SBE | CIP 2019).

### ***A. Digital Economy and Society Index - Main Results***

In September 2022, Portugal was positioned as the 15<sup>th</sup> most digital country within the 27 Member States of the European Commission, according to the Digital Economy and Society

Index (DESI) (European Commission 2022). This index evaluates four dimensions: human capital (digital and internet skills of people), connectivity (supply and demand of mobile and fixed broadband), integration of digital technology (integration of new technologies in businesses and eCommerce) and, lastly, digital public services (usage of technology by the government in public services) (European Commission 2022).

Regarding the overall ranking, considering the four dimensions under analysis, Portugal is close to the Member States' average, with a score of 50.8 (European Commission 2022). This means that, in comparison, the country's performance still has some improvements to tackle (European Commission 2022). To better understand which dimensions need more attention, an analysis covering each of the four will be addressed.

1. First, the human capital score of Portugal is slightly higher than the EU average: 45.9 vs. 45.7. This indicator shows that 55% of Portuguese people have, at least, basic digital skills, but only 29% have them above the basic (European Commission 2022).
2. The second dimension, connectivity, is the one that requires more intervention, where Portugal scores 51.6 and the EU average is 59.9, so the country ranks 18<sup>th</sup> on the index (European Commission 2022). The results show that 81% of households have fixed broadband access, but only 1.9% have at least 1gbps take-up and there are no populated areas that have 5G coverage (at least one operator) (European Commission 2022). The last one is the most concerning due to the very limited 5G deployment – the main telecommunications operators appealed against the 5G Auction Regulation, so the conclusions are still unknown (European Commission 2022).
3. The dimension of integration of digital technology is the best one for Portugal, where it scores the best when comparing to the other Member States, occupying the 12<sup>th</sup> position on the ranking (European Commission 2022). The index concluded that 52% of SMEs

have at least a basic level of digital intensity, 11% use big data and only 16% are selling their products online (European Commission 2022).

4. Lastly, regarding digital public services, the country ranks slightly upper than the EU average (67.9 vs. 67.3) and occupies the 14<sup>th</sup> place (European Commission 2022). The percentage of e-Government users is 59%, lower than the EU average of 65%. The indicator that needs more intervention is the open data, where Portugal scored 66%, 15 points less than the average (European Commission 2022). However, there is the ambition to convert at least 95% of digital public services accessible online, so there is a long way to go (European Commission 2022).

### ***B. Actions to boost digitalization***

Over the past three years, Portugal's position on the DESI climbed from 19<sup>th</sup> to 15<sup>th</sup>, which shows that the country has been developing its digital performance (European Commission 2022). However, the country's commitment to become more digital is more and more noticeable, since the national government implemented several measures, by putting into practice different initiatives that will be now developed.

In 2021, the Portuguese Government created the project Portugal 2030, which materializes the agreement between the country and the European Commission of applying 23 thousand million euros from 2021 to 2027 (Portugal 2030 2021). In this strategy, there are twelve separate programs, ranging from education to innovation and climate action. There is a fund of 3905 million euros for the Innovation and Digital Transition program, which is extremely relevant to invest in the digitalization of the country, mainly in the less developed regions (Portugal 2030 2022).

In April of 2020, the Portuguese Ministry of Economy and Digital Transition launched Portugal Digital, an initiative to promote the country's digital transformation while ensuring competitive advantage in a digital world (Portugal Digital 2022). This program is responsible for the coordination of the Action Plan for the Digital Transition, which reflects the strategy to become a more digital nation, by accelerating the country's transformation (Portugal 2030 2020).

This plan includes three different pillars of action: i) capacity building and digital inclusion, ii) businesses' digital transformation and iii) public services' digitalization. Moreover, the catalysation of the plan acts along, to ensure the well-functioning of each pillar in the regulatory environment. There are also seven guiding principles stated: transversal focus, ambition, pragmatism, involvement, communication and promotion, monitoring and accountability and replication, reuse and sustainability (Portugal 2030 2020).

On the first pillar, it is important to highlight the need of empowering digital skills within the human resources of the country. This pillar includes three different sub pillars: i) Digital education, ii) Professional training and reskilling and iii) Digital inclusion and literacy. Here, INCoDe.2030, *Indústria 4.0* and UPskill are the main programs to help achieving the strategies proposed (Portugal 2030 2020).

INCoDe.2030 is a public policy initiative and its mission is to enhance digital skills, mainly by promoting Internet usage (Portugal INCoDe.2030 2022). The three main challenges covered by the program are citizenship, related to the generalization of digital access; employment, by boosting employability and professional training to satisfy the demand of the market; and knowledge, tied with participation in international Research and Development networks (Portugal INCoDe.2030 2022).

*Indústria 4.0* (Industry 4.0) is a program created by IAPMEI and COTEC Portugal to create favourable conditions for development of the industry and services in the new paradigm of Digital Economy and the Fourth Industrial Revolution, where companies rapidly change due to the rise in interconnectivity and smart automation (IAPMEI 2022) and (COTEC Portugal 2022). The three axes of action of the program are: i) accelerate the adoption of i4.0 in the Portuguese business landscape; ii) promote Portuguese technological suppliers, such as start-ups; and iii) turn Portugal into an attractive technological HUB and raising investment for this industry (IAPMEI 2022). Currently, the program is on its second phase “*Generalizar, Capacitar e Assimilar*”, where there are more than 600 million euros to be mobilized in the next two years. The goal is to include 20 thousand companies, 200 thousand workers and finance 350 innovative projects (IAPMEI 2020).

UPskill is a project created by APDC, IEFPP and three Portuguese universities to requalify unemployed and underemployed citizens, by promoting and teaching ICT skills (UPskill 2022). Portuguese companies identify their vacancies in the technological areas and the trainees have training lessons to better meet the needs of the companies and improve their knowledge on digital technologies. In only two editions, the program formed over 1000 people (UPskill 2022).

The second pillar of the plan (businesses’ digital transformation) focuses on boosting digitalization within the Portuguese companies, as a way of approximating them from the European and International business landscape (Portugal 2030 2020). The three sub pillars are: i) Entrepreneurship and investment attraction, ii) Companies, with a focus on SMEs and iii) Scientific and technological knowledge transfer to the country (Portugal 2030 2020). Besides *Indústria 4.0*, Simplex 2019 and +CO3SO Digital are some of the programs that help concretize these goals (Portugal 2030 2020).

Simplex is an administrative and legislative modernization project launched in 2006 by the Portuguese Government to simplify citizens and companies lives and their interaction with the public services (iSimplex 2022). iSimplex 2019 implemented 119 different measures, by putting citizens' and companies' suggestions into practice (Simplex 2022). Specifically, it was expected to implement a e-residency Programme to facilitate access to public services in an online version for residents out of the country (Simplex 2022).

+CO3SO Digital is another government project that stimulates scientific development and digital technologies implementation on businesses (Diário da República 2020). The main idea was to implement training for inland workers, to balance all areas in Portugal in terms of digital skills. By achieving this, the ICT talent would be spread throughout the country, making it more competitive (Diário da República 2020).

The last pillar (Public services' digitalization) targets Public Administration, in order to facilitate access and reduce bureaucratic procedures, while evolving in terms of both technology and communication and increasing efficiency (Portugal 2030 2020). The three sub-pillars include: i) Digital public services, ii) Agile and open Public Administration and iii) Connected and open local and regional administration (Portugal 2030 2020). Some of the measures include digitalization of the 25 most used public services and the creation of a cloud strategy for the Public Administration (Portugal 2030 2021). The entities involved include various Government Areas (Ministries), such as the State modernization and of Public Administration, the Environment, and the Justice. Also, AMA (Agency for the Administrative Modernization) takes part in the several measures as the coordinating entity (AMA 2016).

Many more initiatives have been introduced by the Portuguese Government, such as MUDA (Movement for Active Digital Use) (MUDA 2022), Digital Skills and Jobs Coalition (European Union 2022) and *Emprego Mais Digital* (CIP 2022).

Nonetheless, there is still much space to improve and mainly boost the digital skills to better face the challenges of the future and ensure the Portuguese are ready to follow the other Member States in terms of digitalization and not be left behind.

### **1.2.2. Education in Portugal**

In the last ten years, with the reinforcement of the population with higher education, and with secondary and post-secondary education, the level of education significantly increased in Portugal. “The 2021 Census shows that the population with higher education is 1 782 888 individuals, representing 19.8% of the population aged 15 or over (13.9% in 2011). The population with secondary and post-secondary education increased from 16.7% to 24.7%.” (Instituto Nacional de Estatística 2022)

The education system has four stages: pre-school education (3 to 6 years old); basic education (6 to 15) years old), where the 1<sup>st</sup> cycle is the first 4 years of primary school, the 2<sup>nd</sup> cycle is the 5<sup>th</sup> and 6<sup>th</sup> grades, and the 3<sup>rd</sup> cycle is from the 7<sup>th</sup> to the 9<sup>th</sup> grade; secondary education (15 to 18 years old) from the 10<sup>th</sup> to 12<sup>th</sup> grade; and higher education (18 years old and above). From 6 to 18 years old school is mandatory.

#### ***A. Public, Private and Cooperative Education***

In Portugal, there is both public and private education. There is also cooperative education - private schools that have an agreement with the Ministry of Education and enter the public education network, providing the teaching service free of charge to those who enrol.

In 2021, 20.4% of the total number of students enrolled in all levels of education were enrolled in private education. (PORDATA 2022)

Private education has a greater presence on the coast of the country and in large cities, there is little offer in the interior of Portugal. Public education is present in all the councils of the country. In recent years, due to the fall in the number of students, some schools have closed in more depopulated and particularly ageing areas. This means that pupils have to go to the nearest school, probably in the centre of the municipality.

Private education is recognised for a more demanding style and being closer to the students. It also has more specialised provision for pupils with special needs, something that public schools mostly do not offer with quality.

“The education minister has revealed that, on average, a student in public education costs taxpayers €6,200 per year, an increase of 30% since 2015. This is higher than the fees paid at any of the top 5 colleges in the country (considering the 2020 Schools Ranking).” (+Liberdade 2021).

Through both public and private education, students access higher education by taking a common national exam. One of the ways of obtaining the ranking of schools in the country is through the qualifications of that assessment.

### ***B. Being a Teacher in Portugal***

Being a teacher in Portugal has not been an attractive profession. There are several reasons for this, from salary to self-motivation, to various obstacles in the education system itself and the hiring system used. It is already difficult to guarantee that the number of teachers will fill all the necessary vacancies in schools. There are schools that do not have enough teachers for their pupils these days.

A team of researchers from Nova SBE did a study led by Luís Catela Nunes, asked by the Ministry of Education, in which the projections of retirements are interconnected with the projections of students, and with this, the number of new hirings to be carried out in the short and medium term is calculated (Nunes, et al. 2021). From this study we can see how critical the situation of the lack of teachers is to fill in the necessities for the next years.

<b>Comparison of teachers needed and available</b>			
<b>Subject Group</b>	<b>Teachers needed from 2022/23 to 2025/26 (on average, per year)</b>	<b>Teachers needed from 2026/27 to 2030/31 (on average, per year)</b>	<b>New teachers graduated from 2016 to 2020 (on average, per year)</b>
From Preschool to 2nd Cycle	474	752	783
Portuguese	284	345	72
Mathematics	155	187	27
Biology and Geology	125	146	20
Physics and Chemistry	97	172	9
History and Geography	254	249	54
English	141	149	34
Philosophy	90	81	13

Table 1: Teachers needed vs. Available teachers per subject - Source: (Loura 2022)

There is a large mass of teachers who are close to retirement age, so there is a high number of teachers who will leave without having someone to replace them, as there is not enough rejuvenation of the profession to ensure that pupils do not miss out on teachers. The big boom of teachers trained in the 1980s, is now starting to enter the decade of their retirement, so there will be an exit boom of teachers. Table 1 shows the seriousness of the situation regarding the need for teachers in the coming years, compared to the number of recently trained teachers.

The education system in Portugal is still outdated, not only in the way of teaching, which sometimes has compulsory models, not very appropriate to the present day, but also in the way

teachers are hired. The excessive bureaucracy felt in Portugal, especially in public services, is also particularly felt not only by schools but also by the teachers themselves.

The projections indicate that the number of students enrolled in public schools will decrease substantially over the next few years, reaching 960,919 students in 2030/31, a drop of 15% from the 1,131,733 observed in 2018/19 (Nunes, et al. 2021).

On the other hand, due to the marked ageing of the current teaching staff, a substantial reduction in their availability is also expected over the coming years due to reductions in their working hours and retirements. Of the 120,369 teachers observed in 2018/19, we estimate that only 73,401 are not yet available. Diagnostic study of teaching needs from 2021 to 2030 will have retired in the 2030/31 school year, which corresponds to a reduction of 39%. (Nunes, et al. 2021).

### ***C. Remaining Issues in Education in Portugal***

When Covid-19 pandemic started and the lockdown the Portuguese Government implemented several measures to allow online schooling due to schools' closure. However, 70% of parents were not satisfied with the actions taken, such as the video recorded classes and the homework (Deco 2020). Indeed, students began to lose interest on online lessons and become more and more tired. Evidence shows that the face-to-face presence is more effective when learning, especially for younger students (TPN/ Lusa 2021).

However, the dissatisfaction with the Portuguese education from its beneficiaries has been long lasting and will remain in the future, unless innovative measures are implemented. Teachers are getting saturated of the weak working conditions, as the salaries are not increasing, and the tasks are more demanding – they are spending bigger amounts of time out-of-schedule to do the tasks needed (prepare contents for classes and grade tests and exams). It is becoming a tiring

job: professors do not feel that they valued in society, the salaries are not enough to fulfil their needs and the stress levels are increasing (Financial Times 2022).

Besides that, 40% of teachers that were lecturing in public schools in 2018 will be retired by 2030 (Luís Catela Nunes 2022). Over the next decade, the Ministry of Education should hire 34.500 new teachers to fight this gap (Expresso 2021).

In the attempt of appealing for changes and bigger investments in education, several national strikes have been happening in the country over the past years to claim better working conditions. For example, during the month of November 2022, two strikes were undertaken in the country, in the 2<sup>nd</sup> (CGTP 2022) and in the 18<sup>th</sup> (Eco Sapo 2022). These strikes harm not only the learning pace of students, but also the school environment and education as a whole.

#### ***D. Digital Transition in Education - Recovery and Resilience Plan***

In April 2021, the Ministry of Planning created the *Plano de Recuperação e Resiliência* (PRR) (Recovery and Resilience Plan (RRP)) for Portugal, as a way of rebuilding the country by changing the future of the country (Ministry of Planning 2021). Also, the Mission Structure to Recover Portugal was created to put this plan into practice, by making a set of improvements and reforms in three dimensions: Resilience, Climate Transition and Digital Transition (Recuperar Portugal 2022).

In the Digital Transition area, one of its components is the Digital School, that aims to invest 500 million euros on digitalization education in Portugal, by creating conditions to innovative education through development of digital skills (Ministry of Planning 2021).

Some of the measures include the acquirement of 600.000 computers for individual use (both for students and teachers) and the ensure at least 90% of schools have Wi-Fi connectivity (Ministry of Planning 2021).

### **1.3. Key influences to keep in mind as an NGO**

#### **1.3.1. The trade-off between partnering with the government or not**

CDI Portugal is not funded by the government. Obtaining governmental funds would imply the loss of some autonomy. There is an excess of bureaucracy that demands too much time and resources. The required cost reporting model is still not efficient or easy, it is outdated and inadequate to current needs. Most of the time it happens that the organisation has already made some expenses or investment and it is only refunded after 3 years of reporting: a scenario that many NGOs or social organizations cannot survive.

The organization, though, gets funds from Portugal Social Innovation: a Portuguese government initiative aimed at promoting social innovation and stimulating the social investment market in Portugal (Portugal Social Innovation 2022) and CDI Portugal aims at keeping these funds, in percentage, below fifty (Baracho and Buisel 2022). The remaining half is composed of private funding companies: national companies like Galp which aim at supporting a project they admire as well as showing their social commitment, and international companies like Microsoft that want Apps for Good's users to utilize their tools.

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supporting a project they admire as well as showing their social commitment, and international companies like Microsoft that want Apps for Good's users to utilize their tools.

### **1.3.2. Being a (social) non-governmental organization**

Being a player in a dynamic and competitive environment is challenging for every type of organization. Nonetheless, non-governmental ones must face specific challenges related to their particular nature and the environment and market they operate in. NGOs usually do not have many resources at their disposal and non-profit organizations have cash inflow maximization and efficient revenue models as not their number one priority, since social impact must be the number one. For this reason, relying on funders and donors is often vital for NGOs to run their operations properly. Nowadays, the number of NGOs does not stop growing, and it is estimated to have reached ten million organizations worldwide (Ba 2018). A study conducted by the OECD reveals that 20% of the NGOs concentrate 80 to 90% of all the resources available for NGOs (Ba 2018), opening a scenario for fierce competition between them to attract donations and funds. For-profit companies compete to gain clients, whereas NGOs compete to get donors in what can be defined as the donations market: a very competitive market that expects its players to have a mindset that contrasts the more humane spirit that is peculiar of a non-governmental organization (Ba 2018).

### **1.3.3. Funds: a hard-to-obtain vital source in a competitive market**

The major difficulty concerns getting enough and continuous flows of funds to perform their activities and do their work. Attracting donors is a challenging task for non-governmental organizations and enterprises in the social economy. These challenges can become harder when the organization is not a start-up, which is more attractive in the eyes of possible sponsors and funders, and when the project is a mature one. Furthermore, if an organization like CDI, which

is not a start-up, manages to obtain funds for one “mature” project like Apps for Good, which arrived at its 9<sup>th</sup> edition, second obstacles might appear on the way. Funding conditions can be hard to deal with and can, in certain cases, compromise the goal of the enterprise. CDI’s program Apps for Good already managed to bring on board several sponsors, from private foundations to large private international enterprises operating in different industries. The main challenge posed by these big enterprises is to, not only get them on board, but especially to retain them for long periods of time (Baracho and Buisel 2022). Interviewing the team of Apps for Good, we could have confirmation of this, as one year has been the average permanence of sponsors on board the Apps for Good project. When we talk about compromising the goal of the program, we refer to the demanding requests made by sponsors for constant updates on the scope of the project. Sponsors crave to observe changes in the projects, in their scope, as well as new projects ideated by the company. To satisfy these demanding requests can take the organization off-track as they would need to allocate their efforts and their resources to something that is not focused on the impact they strive to make with the current project, with the current business model, and with the current strategies. A trade-off between retaining the sponsors and making the desired impact by keeping the current operations eventually arises. Most times, social enterprises and NGOs are forced to choose the second option, and hence, they must start looking for new donors since these organizations usually lack the resources and personnel to break this trade-off.

#### ***A. Efficient networking: more donors and partners***

The lack of efficient networking can be another major problem for non-governmental organizations. This can be an issue not only when referring to a network of donors or funding partners, but also a network of peer organizations. NGOs tend not to be very strong communicators, and if an organization does not clearly communicate its core activities and

objectives, it is consequently hard to find similar organizations to potentially partner with or somehow collaborate with to reach, together, the goal of every NGO: putting people first, producing a positive impact on local communities and pursuing a social cause. CDI Portugal is considered a strong communicator in the social economy, and relative to other non-governmental, non-profit organizations or social enterprises (Baracho and Buisel 2022).

Having a solid network of peer organizations can also assist one with bureaucracy or with financial or legal problems that might have to be dealt with.

#### **1.3.4. Understanding the importance of governance**

The lack of governance is another problem that a non-governmental organization usually faces. In fact, many NGOs do not have a board of directors mainly due to a lack of resources to attract potential members and pay them a fair salary. In other cases, these organizations do not even aim at having a board of directors since they do not see it as a priority, not understanding its importance. Effective governance improves operational efficiency, and business and investment risk are lowered, it facilitates effective communication with stakeholders, and prevent malpractices, among many other benefits (Funds for NGOs 2020). Weaknesses in governance also result in lack of transparency, which might place the NGO in an undesired and unfavorable position when looking for funds. Furthermore, the lack of governance can lead a company to be more exposed to legal, regulatory, and reputational risks (Analyst Prep 2021).

#### **1.4. Centre of Digital Inclusion**

CDI (Center of Digital Inclusion) is an international non-governmental organization of social and digital inclusion. The company is part of the global network Recode, a Brazilian civil society organization for digital empowerment (CDI Portugal 2022). CDI firmly believes in the vital role that technology can play when used as a means, and not an end, for social

transformation. To achieve this, CDI exploits projects and programs that promote digital literacy, active citizenship, and the use of technologies to solve problems in the very environment that surrounds the users, in their communities, and in the whole world. CDI arrived in Portugal in May 2013 thanks to large private corporate sponsors and private foundations (CDI Portugal 2022).

The organizational understanding of CDI must be done by analyzing the different business units and program that compose the company. The four business units are Digital Citizenship Center, with the Switch to Innovation project, House of Knowledge, Recode, and Apps for Good (CDI Portugal 2022).

#### **1.4.1. Organizations in the Portuguese social economy**

In Portugal, the social economy sector is represented by more than 60,000 organizations and the sector employs around 200,000 people (PLMJ 2022). In the country, more than 600,000 people volunteer but the hours of volunteer work represent only 2.9% of the total hours worked in the Portuguese economy placing Portugal as the third to last country in the European Union for volunteer contribution (Pereira 2019). Traditionally, the main actors forming the Portuguese social economy were charitable institutions, foundations, cooperatives, professional, and civic associations (PLMJ 2022). Nonetheless, nowadays, this sector touches a broad range of areas including social support, health, education, sport, environmental sustainability, and so on (PLMJ 2022).

Many of these organizations struggle to attract qualified professionals, and the average salary of a worker employed in the social economy is eighty-three percent of the Portuguese national average (The Guardian 2018). Furthermore, the Portuguese social economy is no exception when analyzing the organizational structures of its organizations: the roles inside the company

often overlap and it is not unusual to see the role of boards of directors and executive directors mixed. This can lead to a failure in providing a long-term strategic plan.

#### **1.4.2. CDI's Breakdown: 4 Business Units**

**1. *Digital Citizenship Center*** aims at using technologies to improve the life of communities with the goal of having their people live, one day, in what are called “smart cities”: cities where accessing services and facilities is made faster, easier, and more inclusive by exploiting technology (CDI Portugal 2022). This project started in 2018 as a result of the partnership between Valongo City Council and CDI Portugal. Two years later the Digital Citizenship Center started the Switch to Innovation program: a pioneering initiative that develops a digital ecosystem, in Valongo, to promote the diffusion, on a larger scale, of different technologies (CDI Portugal 2022). The program allows people to meet and discuss the challenges and opportunities of technology, sustainability, inclusion, education, and humanization.

**2. *The House of Knowledge*** was inaugurated in the first edition of the Switch to Innovation summit. It is a physical space equipped with technological tools and facilities to engage citizens in challenges related to innovation, learning, and creativity (CDI Portugal 2022). Moreover, the center allows the local community to come together, build stronger ties, and boost economic development while creating opportunities for local entrepreneurship (CDI Portugal 2022).

**3. *Recode*** is a digital platform for courses with certification from major companies such as Microsoft and the Project Management Institute. The platform has free courses tailored to a Portuguese audience that range from digital marketing to cloud computing. CDI Portugal is the issuing center of the diplomas (CDI Portugal 2022).

**4. *Apps for Good*** is a technological education program that challenges 5<sup>th</sup> to 12<sup>th</sup> grade public and private schools' students and teachers in Portugal, the UK, where the program came to life

originally, Angola, and Timor-Leste, to develop smartphone or tablet applications, showing them the potential of digital technologies (CDI Portugal 2022). Every professor can join the program regardless of the subject she or he teaches. Professors and students can count on the precious support of volunteer experts from all around the globe with the most diverse topics.

Through Apps for Good, CDI aims to transform old-fashioned teaching methods into cutting edge methodologies by exploiting technology as a means, and not an end. Apps for Good visualizes a world where the new generations are confident active citizens equipped with skills to make a real impact by solving real problems of the real world. The applications developed by Apps for Good users must contribute to reaching the seventeen Sustainable Development Goals of the United Nations. To reach this noble goal they count on five vital players: schools, students, professors, municipalities, and private sponsoring enterprises, whose journey will be analyzed in a specific chapter. Students and professors have access to the Apps for Good platform where innovative and diverse pedagogical content can be found in English and Portuguese. Furthermore, all the participating schools are invited to the regional competition and, if qualifying, to the final competition where the group with the best and most impactful application developed will be the winner.

### **1.4.3. Apps for Good – The Social Problem Tree**

With the advances of a digital society, the traditional education system is increasingly ill-suited to the needs of students, and consequently, to the skills that are required in the job search. Figure 1 shows in detail the causes and effects of this problem.

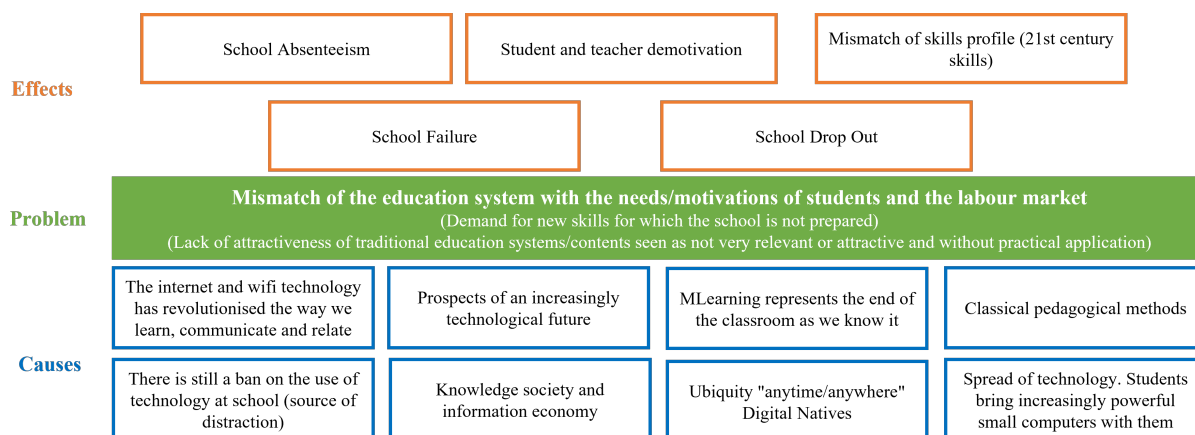


Figure 1 – Social Problem Tree (Source: (CDI Portugal 2022))

#### 1.4.4. Our goal – why we were brought on board

After a thorough evaluation of the different programs, projects, and social initiatives from CDI, and preliminary sessions of interviews with the CDI team, the decision was to focus on this particular program (refer [Appendix 2](#) to [Appendix 5](#) to further questions). The characteristics of the product, its adaptability to different segments and scenarios, the constantly growing impact of the project throughout the first eight editions, and the PESTLE analysis of the Portuguese context, lead us to make this decision. We strongly believe this project has the potential to make a larger and larger impact in the years to come.

Our objective is to provide, through a clear internal and external analysis, precious recommendations to be put into practice to scale the Apps for Good programme and enlarge its social impact.

## CHAPTER TWO: DIAGNOSTIC

The previous chapter aimed to give an overall context about the ecosystem of where Apps for Good is part. From a broader point of view where it is possible to understand the influences that might compromise the effectiveness and reach of the project, to the understanding of its direct environment which held it until its 8<sup>th</sup> edition.

The goal of chapter: perform an in-depth analysis to understand how the situation of the Centre of Digital Inclusion is now and more specifically start funnelling to Apps for Good performance to provide a better understanding of its value and commitment to offer a better future.

CHAPTER KEY QUESTION	
How can Center of Digital Inclusion and its technological educational program Apps for Good be evaluated from an expansion point of view?	
SECTION AND RESEARCH QUESTIONS	METHODOLOGY
<p><b>How can the core of the business be assessed considering a triangle diagnostic?</b></p> <p>2.1.1. Organization Analysis: Human Resources &amp; Work Environment.</p> <p>2.1.2. Financial Analysis: Sustainability <i>versus</i> Growth Paradox in Apps for Good.</p> <p>2.1.3. Impact Analysis: Apps for Good as leverage for CDI.</p>	<p>Organogram          Human Resources</p> <p>Costs      and      Revenues Analysis</p> <p>Impact Infographics</p>
<p><b>What should be the main variables under consideration when evaluating the status quo of both the organisation and the educational program?</b></p> <p>2.2.1. Social Enterprise Diagnostic Tool</p> <p>2.2.2. Business Model: Apps for Good</p>	<p>Social Enterprise Diagnostic Tool</p> <p>Customer Cycle</p> <p>Social    Business    Model Canvas</p>
<p><b>Aiming to scale Apps for Good, what points of leverage should be considered?</b></p> <p>2.3.1. Apps for Good: Prevention of the Future of Education</p> <p>2.3.2. Apps for Good: Challenges for Scaling</p> <p>2.3.3. Apps for Good within CDI: Portugal and UK</p>	<p>SWOT Analysis</p> <p>Secondary Research</p> <p>Internal Data</p>

## **2. DIAGNOSTIC: HOW CAN CENTER OF DIGITAL INCLUSION AND ITS TECHNOLOGICAL EDUCATIONAL PROGRAM APPS FOR GOOD BE EVALUATED FROM AN EXPANSION POINT OF VIEW?**

### **2.1. How can the core of the business be assessed considering a triangle diagnostic?**

#### **2.1.1. Organization Analysis: Human Resources & Work Environment**

Organizational analysis is “the process of appraising the growth, personnel, operations, and work environment of an entity” (Corporate Financial Institute Team 2022), and relies on the understanding of the environment from inside the Centre of Digital Inclusion through the lens of the current human resources framework and the work environment driven by its members. This analysis allows for the identification and better understand of areas that might be compromised over time.

Being a project that is being developed strictly for a non-governmental organization there are matters in which there is a need to develop a comprehension considering the unambiguous environment. Zaid Alshaalan (The Role of Human Resource Management in Development of NGOs 2021) highlights that human resource management can have positive impacts on the sustainable growth of a non-governmental corporation. Since it is a way to strengthen the whole organization upon employee’s strategies, processes, and operations a further inquiry is necessary to understand and consider the resources and challenges that are faced by these organizations – opinion previously revealed and reinforced by CDI’s CEO (Baracho and Buisel 2022).

Reviewing the diagnosis made by Nova Junior Consulting (Sousa, et al. 2022) the main problems related to human resources are above all associated with two topics: lack of a defined recruitment strategy and lack of defined learning sessions and, as in any other non-

governmental association, there is the constant necessity of considering the impact that low wages may lead in the future, especially increasing the turnover rate (Sousa, et al. 2022). All these aspects, when considering a scalability projection of an organization, must be put forward but above all, must be understood from the perspective of the type of business being dealt with.

There are 13 challenges (Batti 2014) that CDI may struggle with because it is a social enterprise. These range from the challenge of attracting and keeping qualified workers, to the difficulty of maintaining the interests of both the individual and the corporation, or even the inability to provide and deliver competitive pay incentives and benefits (I., et al. 2021). Bearing in mind all these aspects, there is growing evidence that HRM impacts the overall performance of the organization (Bartram, Cavanagh e Hoye 2017) and further analysis needs to be performed in order to assess the ways CDI manages these functions.

Focusing on the first stage of the outline of the human resources, it is important to state that the Centre of Digital Inclusion works under the development of five separate panels that work closely (CDI Portugal 2022): the board, general assembly, fiscal council, consulting board, and the team. From the weekly meetings with the team throughout the timeframe in which this work was developed, it was possible to conclude that all teams work together under the same goal: evolve society via technology, leveraging it to foster entrepreneurship, education, and civic engagement while also fostering social and digital inclusion and innovation in the areas where it serves (CDI 2021). This can be understood with further in detail analysis.

- The consulting board consists of four people (CDI Portugal 2022), namely Rodrigo Baggio, Margarida Ferreirinha, Pedro Norton de Matos, and Guilherme Collares Pereira, who generally represent a panel to which works as an outside advisory board and advises managers and executives about steps that should be made to move the company forward (Laranja e Monteiro 2009). Concerning the board, general assembly,

and fiscal council these are social entities meaning that the connection that is maintained between the various bodies of an association is based according to how they carry out their responsibilities without interfering with each other's scope of action since it works democratically (Fernandes e Castro 2005).

- The board is composed of Rodrigo Baggio (board director), João Pedro Tavares, and Margarida Ferreirinha. In its place, the general assembly has the purpose of being in charge of all decisions regarding major issues about the association's existence, including those regarding the dismissal of members, the approval of the accounting records, the amendment of the laws and regulations, the dissolution of the association, and the approval for the association to bring legal action against the leaders for actions taken while in office (Funcionamento de uma Associação 2015) and in this context, MAG – *Mesa da Assembleia Geral* - is composed of two people, namely Pedro Rebelo de Sousa and Maria José Santana, where the first one is entitled of MAG's President and the second one is MAG's secretary. Finally, the fiscal council, constituted by Luís Mendes (president of fiscal council), Luísa Campos Lopes e Marco Afonso, to whom tasks like expressing an opinion on the annual report and financial statements, the action plan, and any other materials that the associative organization provides for review while ensuring adherence to the law, the statutes, and the rules (Diário da República 2022) are associated.
- Coming to the team, there are 11 people distributed by seven lineups: Chief Executive Officer; Project Management; Communication, Marketing, and Events; Impact; Community Management; Financial Department; and Business Development. In detail, it can be seen through [Appendix 6](#) how the distribution is made.

Overall, considering the difficulties an organization may face and the feedback gathered along the development of this field lab, CDI's performance can be stated as an outperformer,

regarding their growth and structure presented, nonetheless there is high-level counseling from our part to open doors to new people through more stratified recruitment processes, or invest seriously in volunteers, that as a starting point to increase reliability and safety, can be alumni and other ecosystem participants that are already familiar with the projects since this reinforces a possibility of creating a strong human reliance for the growth of the organization while bringing renewed insights from new people, in a further foresight even outside of Portugal by reaching trustworthy volunteer's associations like *Associação SPIN* (Associação SPIN 2022).

In conclusion, when considering the human resources on which CDI depends to be able to put its objectives into practice, there are some relevant aspects to mention. It is worth ensuring that even though might be a difficult assessment of career progression, there are professionals who are committed and highly dedicated to the projects that have been held by the organization, and given that organizations are already under pressure from the increasing globalization to prioritize the career development of its workforce (Batti 2014), the community can and should be enlarged throughout the development of scalability.

### **2.1.2. Financial Analysis: Sustainability versus Growth Paradox in Apps for Good**

A financial analysis relies upon two fundamental purposes: “to determine a firm’s present market value and to delineate ways of improving its future market value” (Lee, Lee e Lee 2009). Deliberating an overview of revenues and costs related to CDI’s main project AfG, it is possible to state some patterns that can compromise the effectiveness of a scalability approach due to the paradox closely related to growing and being self-sustainable.

Starting with a revenue analysis (refer to [Appendix 7](#)), AfG’s situation currently is characterized by the number of donations that are taking place, not by the exact number of sponsors they have now – thing that will be further developed ahead – but by how it represents up to 99.7% of

revenues resulting from seven private sponsors, namely GALP, .PT, synopsis, BNP Paribas, IBM, REN, and AfG Colleges ([Appendix 8](#)).

These sponsors are considered high-level from our end since are well-thought-out and tremendously relevant in the industries where they are part of, primarily in the tech industry which connects idyllically with the purposefulness of the organization. Furthermore, it is seen that there is a heavy reliance on outside funding since these sponsors come back year after year and donate impactful sums of wealth that are allowing CDI to keep on providing elevated project performance to its subsidiaries.

Nonetheless, ONGD - *Plataforma Portuguesa das Organizações Não-Governamentais para o Desenvolvimento* – works with 64 Portuguese organizations with the mission to contribute to improve and enhance their work at the institutional, political, legislative, financial, and social levels (Plataforma Portuguesa das ONGD 2022) and through a study conducted by them, the average of financing was divided by three main factors: public financing (45,73%), private financing (22,09%) and internal financing (32,18%). By comparison, we can straightforwardly see that against a range of other non-governmental organizations there is also a clear necessity for CDI to be able to increase their public financing while reducing their private income, especially because the limited number and lack of diversity of sponsors' nature put AfG at risk of being unable to sustain sponsorships in different scenarios, for example in the case of existing problems in one of these sectors there is a higher probability of being negatively impacted by it through a decrease in funds and donations with no possibility of foreseeing it.

Working towards a more distributed source of income will allow having a higher capability of growing and becoming self-sustainable, and this is a projectable idea since the product provided by AfG represents a top-notch performance which allows trust in its ability to be marketable to diverse types of sponsors and different types of expertise for the business.

- Going into a cost analysis (refer to [Appendix 9](#)), regarding the last year timeframe in which access was provided, it is possible to settle that revenues only cover about 43% of the costs, which once talking about scaling sustainably this cannot be the scenario since all performance is in a position of vulnerability. Therefore, as this analysis will be developed throughout the paper, one of the main focuses in which focuses will be held is related to the need of creating a solid atmosphere in which the organization can grow without compromising its basic financial needs ([Appendix 10](#)).
- From the cost structure, it is seen that it is built on a point of view of promoting the loyalty of the business considering the subsidiaries are already part of the AfG ecosystem, since the investments are related to the Ninjas community, data, and impact, and training of subsidiaries, but there is a lacking investment in recruiting and marketing, which was supported by CDI's team that as a social enterprise these are not the main spotlights (Baracho and Buisel 2022), but that ends up being a crucial asset as far as we are concerned to be able to scale the business in proper conducts.

In sum, to end the contradictory relationship between growing and being self-sustainable, there is a need to allocate more resources to the earlier stages of business and of the consumer decision journey, specifically recruiting and marketing, to get an open door to reach a higher number of people and move them to be part of the already existing CDI's community, which would allow to explore and convey opportunities to increase the number of paid users of the platform, which would mean increase the economies of scale of the platform, which is the second biggest cost in the records during the past year. Following that consideration, it is advised to explore potential sponsors from different sectors since this, as already developed beforehand, would allow for a diversified knowledge base, and generate more visibility for the project.

### 2.1.3. Impact Analysis: Apps for Good as leverage for CDI

CDI *per se* had its overall impact (CDI - Portugal 2021) considering different projects, allocation of resources, and diverse innovative ideas. Nonetheless, it is important to undertake that, as João Baracho (Baracho and Buisel 2022) stated, scaling AfG is scaling CDI, and therefore there is a need to understand where this impact that is being projected is coming from and how it has been assessed.

Internationally between Portugal, the United Kingdom, and Angola, in a summary, this project has impacted 26247 students, 1114 professors, 710 schools, and 316 experts (CDI Portugal 2022) which provided a kind of experience for the students that helped them broaden their horizons and go beyond the spectrum of the curriculum.

The last edition of AfG – 8<sup>th</sup> Edition 2021/2022 – marked an 8-year journey of contributing to the transition and digital inclusion of the educational community that achieved highly noteworthy results (CDI Portugal 2021/2022). Overall, being its subsidiaries, most of AfG's impact is acknowledged closely to the students and teachers involved (see [Appendix 11](#)), but it is also important to look at it from the broad perspective where there are impactful benefits from society.

- a) Starting with the students, the last edition counted 180 schools, which represent 3415 students evenly distributed by gender, by which 3,9% are from 1<sup>st</sup> cycle, 12,6% from 2<sup>nd</sup> cycle, 35,9% from 3<sup>rd</sup> cycle, and 47,6% from high school (CDI Portugal 2021/2022). Besides registering a percentage in which more than 7 out of 10 students were highly satisfied with the project, these children not only improved their soft skills and were able to evolve their open mindset, but had an above-average impact related to the increasing motivation to learn since their overall performance was superior after AfG

than the students that haven't been part of the program (CDI Portugal 2021/2022). Alongside, it was also a space where students increased their creativity and, thanks to the diverse community involved, were able to reach different career paths for their future, which reinforces the long-term impact the project has.

- b) Into the teacher segment, thanks to the project, it was possible also to see (CDI Portugal 2021/2022) that skills overall, but specifically digital, were improved, the relationship built with the students was strengthened, and while exploring new teaching methodologies they ended up having higher job satisfaction, engagement, and confidence.
- c) Looking to society a lot of positive outcomes are instigated by this project such as the connection with sustainability and social responsibility, through the 17 Sustainable Development Goals ([Appendix 12](#)), where there was high representativeness regarding SDG (Sustainable Development Goals) number 4 which is related to the providence of quality education (United Nations 2015), and also related to stated topics in the infographic (2021/2022) in which besides promoting innovative education only, the participation of girls in this type of environment ends up contributing to a gender equality reinforcement while creating awareness and working on social problems in different areas. Furthermore, this project ends up not only providing digital skills, but also creating awareness about social problems in different communities which allows us to foresee a more inclusive, informed, and welcoming civilization.

Given this set of inputs, it is important to conclude then that the biggest challenge faced regarding this aspect ends up being the possibility of relying on this top-performer product. As AfG looks to grow, focus should be put on increasing the impact made on teachers. This investment should be in providing more training opportunities for teachers, increasing their ease in using the platform and accessing resources. The impact made on their self-esteem and

wellbeing will also be increased. These factors make AfG an attractive project for their endgame objective of government adoption.

## **2.2. What should be the main variables under consideration when evaluating the status quo of both the organisation and the educational program?**

### **2.2.1. Social Enterprise Diagnostic Tool**

Social Enterprise Diagnostic Tool is a framework that “has been developed by Social Enterprise London (SEL) with funding from Capacity builders Income Generation work-stream, for use by second tier support advisers of social enterprises, and voluntary and community sector organizations across England” (K. Sousa 2016). The goal of using it is to gain more knowledge and insight to evaluate the viability and sustainability of the execution of the scaling project throughout ten main chains to the success of the organization.

Concerning CDI’s strategy ([Appendix 13](#)), it is fast settled that the organization has a defined vision, mission, and objectives, which allows it to understand better its value near the population while simultaneously having the ability to when developing new concepts compare them to the overall strategy since all projects end up following different goals but under the same purpose. Furthermore, regarding aspects like developing strategies where strengths, weaknesses, opportunities are considered and all the aspects concerning an effective business plan end up being less optimistic since there is no clear guidance on these topics. Gathering all that information, the average weighted score of strategy is 3,6 out of 5.

- Governance, further in detail in [Appendix 14](#), was evaluated with 3,8 out of 5 since although the organization has an appropriate legal structure and documentation, there are some grey spots related to feedback mechanisms and analysis related to its stakeholders. The board's level of awareness of whatever operational and financial

difficulties might influence the organization's direction is also subject to some limitations.

- With 4,0 out of 5, the customers and users block, developed under [Appendix 15](#), it is believed that although CDI's ability to reach variety in their segments is being achieved, the organization needs more research to understand who the key customers are and how much is their willingness to pay – since this will help develop its future strategy with self-sustainability in mind.
- Social and Environmental point of view, with 4 out of 5 (see [Appendix 16](#)), where the main concern is related to the impact assessment and the communication of the social value of the organization that besides realizing that exists, the statement of it is underdeveloped.
- Operations, where the foremost apprehension points are the planning of strategies and procedures to achieve operational efficiency and monitoring of the allocation of resources in the finest method possible ([Appendix 17](#)). Therefore, in this parameter, CDI obtained 3,1 out of 5. Related to IT and Data, evaluated with 3,9 out of 5 on [Appendix 18](#), the biggest apprehension relies on the backup procedure to avoid the failure of the system and its management of it.
- Coming to Finances ([Appendix 19](#)), with 3 out of 5 but strictly considering the experience and data accessed, CDI is lacking in policies and information regarding effective financial management, which ends up also compromises the quality and consistency of evidence. Besides, the biggest concern from this side resides in the understanding of break-even points and financial sustainability. Therefore, when evaluating income generation ([Appendix 20](#)), there are difficult assessments also since the lacking sources of income and difficulty of reaching self-sustainability is compromised which led to a 2,8 out of 5.

- Evaluating Marketing and Communications ([Appendix 21](#)), which has 2,6 out of 5, CDI's does not have a committed strategy implemented which reveals a lack of resources allocation, no marketing plan in place, and no mechanism measurement to reveal its effectiveness.
- Finally, Human Resources and Organizational Development ([Appendix 22](#)), which has 3,6 out of 5, since although the basic needs of employees are reached, there are some concerns related to staff appraisal system and most of all the ability to revise the business plan to fill gaps.

In this way and considering all the aspects above mentioned, the weighted score attributed to CDI is 3,4 out of 5 which not only shows the need and room for improvement but also provides an already steady place to start from.

### **2.2.2. Business Model: Apps for Good**

The business model of AfG is conceived under the new Social Business Model Canvas due to its characteristics. The SBMC provides the identification of the actions required to plan a sustainable company, assisting in maintaining the social purpose as the organization's primary aim (Mural 2022), where the main goal is to allow anybody to comprehend the foundation and essential elements of AfG's business model, without losing the focus on the impact and its beneficiaries (Social Business Design 2022).

By looking into [Appendix 23](#) where the tool is provided, the emphasis is to be able to look at AfG as a whole and understand that all the adjustments that might be made in the meantime, will influence all these components – whether talk about scaling the business or changing its beneficiaries. To understand correctly the core of the business and how everything connects it is advised that the graph is read pursuing the following steps (Social Business Design 2022):

starting by the value creation and consider in here the impact mission, the segment beneficiaries, core intervention, the social value proposition, and then moving to the customer's segment and its value proposition. Finally moving to the other side of the board, the value delivered section is reached by understanding its channels and understanding the key activities, key resources and key partners and stakeholders. Afterward, it is advice to move to the value captured and therefore consider the cost structure, revenues, and surplus division. Following this guideline, it is possible to reach a global view of the AfG project.

Related to the customer cycle of the project graphically developed under the [Appendix 24](#), the main setbacks detected are related to the number of times that the journey ends with no following step of becoming part of the community in a long-term, therefore, to assure the viability of the scalability this becomes a precondition to be considered.

### **2.3. Aiming to scale Apps for Good, what points of leverage should be considered?**

#### **2.3.1. Apps for Good: Prevention of the Future of Education**

The United Nations believes that not only an investment in digitalization and literacy is needed, but also a shift toward educating students how to learn, a renewal of continuous learning, and expanded linkages between formal and informal education are all required (Guterres 2020). This is important remarkably since AfG not only tackles on a 360 degrees perspective all these points, but also presents itself as a prevention, and not as a solution for an already existing problem embodying therefore a high-level investment in the future of its subsidiaries.

Apps for Good makes education and its methodologies up to date, while creating an environment where students are more involved, and cooperative while gaining the development of digital skills and active citizenship, which results in an impact on their present-day and everybody's prospect. There are several applicable anticipations possible to consider in this

scenario, but the truth is one of the biggest fights against negative outcomes that come from a society lacking commitment to the development and maintenance of school learning system is the level of impact that having varied teaching styles addressing a range factor (Chakravorty 2016).

By being a part of AfG teachers can provide not only a course where students have a different dynamic that represents a broader spectrum but also provides diverse and stimulating content from which teachers and students can grow – personally, academically, and socially – which goes along with the shared vision of OECD that states to be devoted to facilitating each learner's holistic development to the creation of a shared future based on the welfare of people, society, and the planet (Secretary-General of the OECD 2018).

Considering this perspective, AfG can rely on proven groundwork to present themselves as a problem solver to a setback that is seen by society, which from a consulting point of view, is an advantage. This should be seen eventually as a conviction for impactful communications and a point of leverage to its stakeholders once the impact can be perceived continuously by observing in a comparative frame the before and after being part of the program.

### **2.3.2. Apps for Good: Challenges for Scaling**

To better understand the challenges faced by developing the prospect of scaling the project AfG, under the development of a swot analysis – fully built-in [Appendix 25](#) – the main purpose was to identify and evaluate both internal and external variables that might result in opportunities or threats for a company (Peterdy 2022).

From this framework, some conclusions arose that are relevant to consider when developing the project. When focusing on scaling there are two threats that more than ever should be considered, specifically the trade-off between losing quality or losing the place in the market,

since on one hand astonishing growth might reflect the lack of resources to improve the market, and the scalability might put AfG in a market where the competitiveness is even higher which might end up harming its percentual performance in it. The great motivations come from the product being held under many European Union and even Portugal new action plans, which not only proves value but also proves necessity.

Besides, the greatest reliance to scale would be the certainty of having an above the average product and a community that not only believes in AfG's project, but also understands its value, either due to the approach made by the AfG's team, or through the impact settled in their lives.

Therefore, keeping in mind the difficulty in penetrating the NGO ecosystem in Portugal's economy, the focus of this analysis is to rely on the strengths already available, the impact thus far generated and the strong network that has been built up, while using it as a point of leverage to scalability.

### **2.3.3. Apps for Good within CDI: Portugal and UK**

The worldwide initiative called Apps for Good originated in London in 2010 and has been operating in Portugal since 2014 at the request of the Directorate-General for Education (CDI Portugal 2022).

Although these two strands work independently, both focus on making the future better by relying on technology skills (Apps for Good UK 2022), but in practice, there are some differences worth exploiting from which it is possible to take into consideration.

In a study conducted by EY, where the main conclusions are in [Appendix 26](#), specific points on which the development of this analysis can be structured are stated here:

- a) For example, a gap between Portugal and UK is the teacher recruitment since while in the UK is ongoing, in Portugal there is a timeline that might harm the opportunity of grabbing new members for the community in a more effective way, which is also endangered by the conclusion that UK's partnerships not only help them financially but also give support to bring more schools to the project which shows how important would be building more and effective sponsor's strategies in Portugal.
- b) Moving to volunteers and fundraising, as seen in the appendix stated above, there are similar approaches when it comes to connection but, the UK market also goes further through the embracing of volunteering partnerships and providing content co-creation to ensure fundraising – these are, for example, some paths that easily could be adopted by Portugal's side.
- c) All this commitment to the development of the Portuguese strand is tremendously justified by how good their platform already is since even in comparison it offers a more complex and feature-rich offering that can be overall supported by these developments mentioned beforehand along with trying to have data on how to reach the schools in a method that can be inspired by the UK's performance.

In sum, both slopes have their strengths and weaknesses, the goal would be to be able to absorb the worthy from one another and develop an even more top-notch service to evolve the education system.

## CHAPTER THREE: MARKET

AfG's impact is made on several beneficiaries and the consumer journey testifies how all the "actors" involved are part of it. Reinforcing strengths and soothing pain points along their journey is fundamental to have a good impactful product. The 5 forces framework will be used and an overview of the two most similar players in the market, competitors, or partners, will be shown. Currently targeted segments and potential new segments will be analyzed to choose what growth strategy AfG should adopt to enlarge its impact.

CHAPTER KEY QUESTION	
What should Apps for Good do to keep its consumers satisfied, maintain its uniqueness, and enlarge its impact?	
SECTION AND RESEARCH QUESTIONS	METHODOLOGY
<p><b>Consumer decision journey: can the Apps for Good project run more smoothly for its current stakeholders</b></p> <p>3.1.1. Importance of the consumer decision journey</p> <p>3.1.2. Public segment</p> <p>3.1.3. Private segment</p>	<p>Consumer decision journey</p> <p>Interviews</p>
<p><b>What level of competition will Apps for Good have to face in the market?</b></p> <p>3.2.1. Intensity of the competition in the market: Porter's 5 forces</p> <p>3.2.2. Main competitors: overview</p> <p>3.2.3 Apps for Good's uniqueness: prevention, and investment in a better society of tomorrow</p> <p>3.2.4. Market analysis: Apps for Good and the competition</p>	<p>Porter's 5 forces</p> <p>Competitor analysis</p> <p>Benchmarking</p>
<p><b>What segments should Apps for Good target and what growth strategy should be adopted</b></p> <p>3.3.1. Current segments to target which ensure growth and a larger impact</p> <p>3.3.2. Exploration of new segments and choice of the growth strategy</p> <p>3.3.3. The choice: market penetration growth strategy</p> <p>3.3.4. The reasons why</p>	<p>Market analysis</p> <p>Product+Market growth strategy</p>

## CHAPTER FOUR: VALUE PROPOSITION

On the third chapter, the market penetration strategy was the most suitable one for Apps for Good to enlarge its impact. The customer journeys of the current stakeholders were analysed, as well as the market and the competitors of the project.

**The goal of chapter 4:** analyse both public and private segments, in terms of schools and sponsors (municipalities and companies), in order to enhance points of leverage that CDI Portugal can use to boost the performance of Apps for Good in Portugal.

CHAPTER KEY QUESTION	
How can CDI Portugal improve Apps for Good value proposition by enhancing points of leverage to better suit the target market?	
SECTION AND RESEARCH QUESTIONS	METHODOLOGY
<p><b>What are the most important public entities to further penetrate the market and how can AfG reach them?</b></p> <p>4.1.1. Marketing mix for public schools</p> <p>4.1.2. Value proposition for public schools</p> <p>4.1.3. Benefits for public sponsors (municipalities)</p>	<p>4 Ps Analysis (Marketing mix)</p> <p>Value Proposition Canvas</p>
<p><b>How can private entities be addressed?</b></p> <p>4.2.1. Marketing mix for private schools</p> <p>4.2.2. Value proposition for private schools</p> <p>4.2.3. Benefits for private sponsors (companies)</p>	<p>4 Ps Analysis (Marketing mix)</p> <p>Value Proposition Canvas</p>
<p><b>What are the final recommendations and next steps to follow?</b></p> <p>4.3.1 Final Recommendations and Next Steps</p>	

## CHAPTER FIVE: GO TO MARKET

In the fourth chapter the different targets were studied, defining the marketing mix and value propositions for the public and private segments. The benefits for both were also analyzed.

**The goal of chapter 5:** Present strategies to exploit the market where Apps for Good does not yet have much traction. To ensure there is some financial sustainability, a strategy to get more public schools is presented, focusing on international schools in the Lisbon area. On the sponsorships side, a strategy to get more private sponsors is developed.

CHAPTER KEY QUESTION	
WHAT ARE THE GO-TO MARKET STRATEGIES APPS FOR GOOD NEEDS TO APPLY TO INCREASE ITS PRESENCE IN PORTUGAL?	
Section and Research Questions	Methodology
<p><b>How can AfG efficiently reach the private school's sector?</b></p> <p><b>5.1 Private &amp; International Schools</b></p> <p>5.1.1. What are the challenges felt by private schools with AfG?</p> <p>5.1.2. International Schools Characteristics</p> <p>5.1.3. What is the impact of AfG in International Schools?</p> <p>5.1.4. Strategy to go to International Schools</p>	<p>Internal CDI Portugal Documents</p> <p>Secondary Research</p> <p>Go to Market Analysis</p> <p>Impact Infographic</p>
<p><b>How can AfG benefit from wider sponsor's cluster &amp; number?</b></p> <p><b>5.2 Private Sponsors</b></p> <p>5.2.1. The importance of the private sector for the development goals and community development</p> <p>5.2.2. Strategy to have sponsors per region – DELTA Cafés</p> <p>5.2.3. Impact on the company and its employees</p>	<p>Internal CDI Portugal Documents</p> <p>Secondary Research</p> <p>Go to Market Analysis</p>
<p><b>5.3 Final conclusions and next steps</b></p>	

## CHAPTER SIX: FINANCIAL ANALYSIS

This section develops the financial implications of our recommended strategies. The first strategy aims to increase Apps for Good’s own revenues by increasing the number of paying customers (private schools). The second strategy aims to increase the overall revenues of the program to gather more funds to invest in the growth of AfG online identity and online community building infrastructure. After five years, our recommendations aim to achieve 25% market share in international schools in Lisbon, which would increase AfG own revenue by €3,400. Total new revenues earned from our recommendations will cover 63% of their total costs, an increase of 6% from AfG’s current situation.

CHAPTER KEY QUESTION	
<b>What impacts will our suggested market penetration strategies have on the financial sustainability of Apps for Good?</b>	
SECTION AND RESEARCH QUESTIONS	METHODOLOGY
6.1 – Private Schools – International Schools  6.1.1. What are the financial impact of Strategy 1?  6.1.2. What is the payback period and implied market share?  6.1.3. How are revenues impacted by our new pricing strategy?	<i>Scenario Analysis</i>  <i>Sensitivity analysis</i>  <i>Internal documents</i>
6.2 – Private Sponsors  6.2.1. What are the expected costs for this strategy?  6.2.2. What are the new sponsorship tiers we propose?  6.2.3 How should AfG reinvesting newly acquired funds?	<i>Scenario Analysis</i>  <i>Sensitivity analysis</i>  <i>Internal documents</i>
6.3 – End Game  6.3.1. How do the defined go to market strategies impact the organisation’s long-term goals for scaling AfG?	<i>Implementation Roadmap</i>

## **7. CONCLUSION AND FINAL RECOMMENDATIONS**

### **2. How can Center of Digital Inclusion and its technological educational program Apps for Good be evaluated from an expansion point of view?**

#### **2.1. How can the core of the business be assessed considering a triangle diagnostic?**

- Accessing the human resources management should improve based on two axes: the investment in recruitment, whether by relying on volunteers or by acquiring official members from the community that already see the value and importance of the project and keeping its focus on maintaining a low turnover rate against the odds associated with being an NGO and providing low salaries and harder career progression.
- The paradox between growth and scalability must be decreased as much as possible when projecting the expansion of AfG. If on one hand, there is a high necessity of investing in marketing and recruitment in an earlier stage, in the long-term this cost would be covered by the creation of economies of scale associated with the dynamic of the program.
- The impact generated by AfG is already significant (CDI Portugal 2021/2022) meaning that the biggest breakdown related to this measurement is connected to how it is projected to society and how the community is not at the moment able to understand the power and influence this can have in the future of the students and the education system.

#### **2.2. What should be the main variables under consideration when evaluating the status quo of both the organisation and the educational program?**

- CDI presents itself as a worthwhile organization to develop a new scalability point of view, if departments like marketing, human resources, and financial sustainability are progressed under the evaluation made by the diagnostic tool (K. Sousa 2016).

- By overviewing the Social Business Model Canvas (Social Business Design 2022) we can obtain a greater image of the project while understanding that the cost structure is related to the key activities, while the revenue streams are fully interrelated with key partners and resources.

### **2.3. Aiming to scale Apps for Good, what points of leverage should be considered?**

- AfG is a project focused on the prevention of a problem that not only adds value to its mission but also becomes a point of leverage for its shareholders with the ability to have a clear vision of the improvements made after joining the platform.
- There are a lot of influences coming not only from the inside but also from the environment which AfG is part of meaning that to achieve success the biggest reliance should be on the strengths of having a good product and a network that understands its value.
- AfG originated from the UK in 2010 but works independently per nation. In this framework, there are some aspects from which both countries would benefit from sharing expertise. Besides that, it is important to keep in mind that the level of support from the government, the data from which individuals are based, and how each reaches funding opportunities are from wholly different foundations.

### **3. What should Apps for Good do to keep its consumers satisfied, maintain its uniqueness, and enlarge its impact?**

#### **3.1. Can the Apps for Good project run more smoothly for its current stakeholders?**

- Public segment: municipalities boost their reputation by supporting Apps for Good and get positively impacted by the projects developed by the students. They could be more present in the conversion phase of the journey. Public schools are excited to try the program, even if not immediately understanding its real value, as it is free. In the end,

the public customers (public schools) are satisfied with the product, and this leads to positive word of mouth in the advocacy phase. Users (teachers and students) are supported by Apps for Good along the journey, yet additional support to make the program fit in the curriculum is wished. Students are excited and committed but struggle with travel expenses to participate in the competitions.

- Private segment: private sponsors are vital for Apps for Good. Convincing them to support the program and retaining them for long has been hard so far, as well as having two enterprises that are direct competitors both on board. Private customers feel a lack of exclusivity by having to pay for a product that public ones receive for free. Students and teachers enjoy a program that is extra-curricular.

### **3.2. What level of competition will Apps for Good have to face in the market?**

- “Competitors” are not likely to implement aggressive tactics, and possibilities for partnerships are not remote. Outsystems, the main supplier, has a high bargaining power due to its size. Public schools have low bargaining power whereas a higher power is in the hands of private schools: the only sources of financial independence from donors. A medium threat of substitute product is the result of a quite unique product that has low market share, whereas several elements make the threat of new entrants high.
- The two most similar players in the market identified are Teach for Portugal, an NGO with similarities in the targeted segments, even if focused exclusively on the public sector, and in the reliance on donors and a lower market share and Ubbu, a social organization with a close similarity in targets, tools, and scope, but with a higher market share as well as a more financially sustainable business model.

### **3.3. What segments should Apps for Good target and what growth strategy should be adopted?**

- Expanding the public and private schools, and the private sponsors is key for enlarging Apps for Good's impact. The first one represents the segment where Apps for Good's impact is needed the most and 73.5% of Portuguese schools are public and cannot be overlooked. The two private segments represent the main ways to fund the impact making process.
- Three segments were considered as possible new targets: ATLS, mainly because of the already known school environment, companies that want to boost their employees' digital skills, mostly for their budget, and the elderly-fragile population, because of the large social impact and demographics of Portugal. Some organizations already serve part of these markets and partnerships could be created. Targeting these segments would mean changing the product and some of the characteristics that users love, with the risk of losing some quality. Diversification was excluded as a growth strategy.
- The current users' high levels of satisfaction, testified by a high retention rate and interviews, a recent boost in digitalization in the Portuguese school system, as well as a large potential market gap in both the public and private sector were the main elements pointing towards the choice of market penetration as the growth strategy to adopt.

#### **4. How can CDI Portugal improve Apps for Good value proposition by enhancing points of leverage to better suit the target market?**

##### **4.1. What are the most important public entities to further penetrate the market and how can AfG reach them?**

- Public schools are the most important public entity when it comes to Apps for Good, as they represent 99% of the current customers. To further acquire more public schools to the AfG ecosystem, deeper connections with the Ministry of Education should be

created, promotion should be boosted (to increase brand awareness) and the engagement with the beneficiaries should be reinforced.

- Regarding the value proposition, Apps for Good represents an innovative approach to digital education and the advantages vary from students to teachers, but the outcomes have been truly positive (CDI Portugal 2022).
- Public sponsors are represented as municipalities and these can benefit from partnering with Apps for Good to benefit from mutual benefits, such as increase their connection with the community and solving local problems of their regions.

#### **4.2. How can private entities be addressed?**

- Approaching private schools is a remaining challenge for the Apps for Good team due to their unwillingness to pay for the project. However, by enhancing its benefits and making more effective and strict communications, it is possible to acquire new clients to join the ecosystem. Parents associations can play a relevant role as promoters of the project.
- The value proposition for private schools is established based on the impact of providing a differentiator factor in the competitive universe of private schools. Students and teachers benefit from this new learning method and develop mainly digital skills, crucial to face the current challenges.
- Companies are the private sponsors, and they can find an added value for donating to Apps for Good, by helping a technological project to grow and increasing their CSR in the community. Furthermore, they can gain brand awareness and broad the AfG ecosystem, as their employees might become Experts.

#### **4.3. What are the final recommendations and next steps to follow?**

- After assessing recommendations for the main public and private entities, the next steps should be to focus on private schools due to their importance for the financial sustainability of Apps for Good. Although public schools continue to be extremely relevant in terms of impact, CDI Portugal needs to improve its financial situation to be able to last more and more years.

## **5. What are the go-to market strategies apps for good needs to apply to penetrate the market?**

### **5.1. How can AfG efficiently reach the private school's sector?**

- Apps for Good should invest in being self-sustaining by increasing its revenues. For this, it is important to invest in the strategy of getting more private schools, trying to overcome the challenges of having a simultaneous presence of the project both in public schools, for free, and in public schools, for a fee.
- There is an opportunity for Apps for Good to have a presence in international schools. For the most part, they have the same concerns and ambitions. They differ by different factors, such as fees, if teachers are native, curriculum, schools transport availability, extracurricular activities, class sizes, students' nationalities, the technology used, and locations. Of particular relevance to AfG's work is the use of technology, which is usually advanced, and the curriculum, which is mostly based on the English or American model.
- AfG will have a strong impact on the lives of students from international schools, in particular by working on the development of applications that solve real-world problems, working towards the 17 SDGs.
- The strategy involves activating International Schools in the Lisbon region, approaching them with good content, including testimonials from alumni. Activating the network of

parents' associations, as it is through them that we can put pressure on the school to offer this programme to students.

- To differentiate schools, with or without AfG, i.e. with or without students developing real solutions, aiming at the SDGs and through digitalisation, the creation of a label for the school, something like "Digital Social School", should be analysed.

## **5.2. How can AfG benefit from wider sponsor's cluster & number?**

- The private sector is very relevant for the achievement of the SDGs and to act on the wellbeing of the local community. Nowadays, a company's CSR goes through much more than it used to. Focusing more on the empowerment of its people, more sustainable concern and action and value creation. In order to attract the best sponsors, it is necessary to look for companies that have similar values to those of the AfG, and that place particular value on investing in the education sector in the region. For *Alentejo* region, it is advisable to go to Delta Cafés.
- It is proposed to activate regional sponsors so that they can be active members of the development of the region in which they are involved. They can therefore opt for different models of sponsorship, choosing or not to make their members also an active part of the collaboration. For example, as volunteers who share their experience and know-how, the so-called Experts, with teachers and students.
- The impact for the company is special, it is not only by financing a social organization, but an investment in the young people of today, who can become the future of their companies. In the end, it impacts the lives of the families to which the students belong, most of whom work in the company. The students may co-create solutions to problems felt by the company or its employees.

## **6. What impacts will our suggested market penetration strategies have on the financial sustainability of Apps for Good?**

### **6.1.1. What are the financial impacts of Strategy 1?**

- Increase in the number of paid users will increase own revenues and lessen dependency on donations. This is imperative when looking to grow, as there need to have available funds to invest in growth capacity. The increase in paid users will not cover costs (even at 100% market share), as the actual price per school is too high compared to the willingness of the customer to pay. For this reason, the new pricing strategy recommends that the fee is lowered in the first year in order to attract more private users to the platform.

### **6.1.2. What is the payback period and implied market share?**

- Analysis shows there is a quick rate of return given that the new strategy asks for the same price as the current strategy, meaning there are only potential losses in the first year. As AfG currently has 0% market share in the International school market in Lisbon, the scenario analysis performed to estimate the financial impact of increasing market share of international schools by 25% (7 schools) in five years. Our analysis shows that with the new pricing strategy, revenues would be increased by €300 in five years compared to the current price strategy.

### **6.1.3. How are revenues impacted by our new pricing strategy?**

- The more attractive price point is designed to attract more users in a short period of time. The new price strategy requires the acquisition of 2 schools to cover the cost of one school with the current strategy, however in the second year and onward, the revenues are the same.
- The increase in available funds from acquiring new revenues (own and donations) should be reinvested into the ninja and fellows community, in order to maintain the quality of the product as well as maintain close connection with the educational branches of government. This is an investment into the long-term sustainability of the

program as it directly impact the key stakeholders that connect the program with the schools.

- The major cost saving aspect of the growth of AfG's program is their platform costs. As they currently pay a fixed three-year rate with the capacity of 10,000 users, there is growth potential and the opportunity to lower the cost per school

### **6.2.1. What are the expected costs for Strategy 2?**

- As social media marketing is not accessible due to it being costly and not incredibly effective for business like AfG, our recommendations encourage focusing on organic engagement. Using private sponsors to post on their social media accounts is a suggestion to create more online identity and connect with more potential clients. The current budget for AfG's content creation is high, therefore it is advisable for AfG to use the content they have been producing over their eight years of operations to create story-oriented content that bolsters their online identity and shows them to the digitally forward program they are.

### **6.2.2. What are the new sponsorship tiers we propose?**

- There are three new sponsorship tiers that have been developed by the team to provide as a framework when approaching private sponsors in the future. Across all tier, analysis shows that there is capacity for the sponsor to cover two schools at every level.

### **6.2.3 How should AfG reinvesting newly acquired funds?**

- The ninja teacher community and the fellow communities are the areas that should be invested in moving forward. These communities offer a lot of resources for very little cost. Teachers provide insights into how to keep the quality of the program high as well as provide as a bridge to the public school educational system.

**6.3.1. How do the defined go to market strategies impact the organisation's long-term goals for scaling AfG?**

- Sustainability in the long-term is only achieved through government adoption (with the current cost structures and mission). The investments made by governments has stable durations as they are typically investments made with the intension of using the program for a long time. Government adoption is attractive for AfG's financial sustainability because it is not easy to continue to grow relying on a small portfolio of private sponsors.

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## **9. GLOSSARY**

Experts – Volunteer experts that support students at various phases of their product development by providing their technical knowledge (CDI Portugal 2022).

Ninjas – community of teachers that work as advisors to support the Apps for Good team improving their project, by meeting with them regularly and suggesting changes that could be done to create better and bigger outputs (Baracho and Buisel 2022).

## 10. ACRONYMS

4 Ps – Product, Place, Price, Promotion

AfG – Apps for Good

AMA – Agency for the Administrative Modernization

APDC – Digital Business Community

CD – Community Development

CDI – Center of Digital Inclusion

CFAEs – Centres of Training of Associations of Schools (*“Centros de Formação de Associação de Escolas”*)

COTEC Portugal – Business Association for Innovation (*“Associação Empresarial para a Inovação”*)

CSR – Corporate Social Responsibility

DGE – Directorate-General for Education

EC – European Commission

EU – European Union

IAPMEI – Agency for Competitiveness and Innovation (*“Agência para a Competitividade e Inovação”*)

ICT – Information and Communications Technology

IEFP – Institute for Employment and Vocational Training (*“Instituto de Emprego e Formação Profissional”*)

MVP – Minimum Viable Product

NGO – Non-Governmental Organization

OCDE – Organization for Economic Co-operation and Development

SBMC – Social Business Model Canvas

SDGs – Sustainable Development Goals

SMEs – Small and Medium-sized Enterprises

STEM – Science, Technology, Engineering and Mathematics

TFP – Teach for Portugal

UN – United Nations

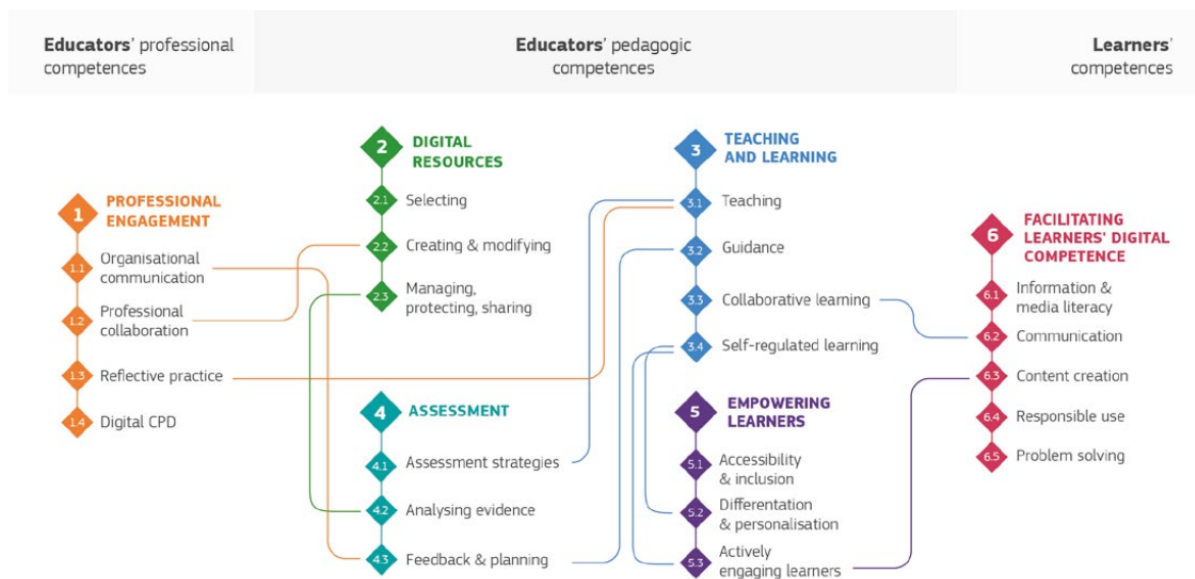
VP – Value Proposition

## 11. APPENDIX

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## Appendix 1. 22 Digital Competences (Digital Education Vision for the European Schools System (DEVES) 2018)



**Appendix 2. Interview Script João Baracho (CEO of CDI Portugal) and Matilde Buisel (Project Manager of Apps for Good)**

1. How does Apps for Good work?
2. What was the progress of Apps for Good in the UK? And in Portugal?
3. How is the relationship between Apps for Good and public schools? What about private schools?
4. What are the main challenges CDI faces regarding Apps for Good?
5. Do schools continue on AfG after one year/ edition?
6. How many schools are currently using AfG?
7. Would you consider having volunteers working with CDI in AfG?
8. How does the funding of the different projects from CDI works? Are the Business Units dependent on each other?
9. How does the pricing/cost strategy work?
10. When looking for sponsorships and state funds, what are the main challenges (competition, lack of opportunities, lack of money, lack of human resources)?
11. Where would you like to see Apps for Good in the future? What is the main goal?
12. How do you recruit new employees for the team?

Observation: additional questions were made throughout the flow of the interviews.

**Appendix 3. Interview Script Priscila Andrade (Head of Communication and Events department)**

1. How is promotion currently done for CDI? And Apps for Good?
2. What strategies have you tried to do but did not work out?
3. What are the key communication avenues used to market Apps for Good (website, social media)?
4. Who is the target audience for AfG marketing strategy?
5. How often do you update/ change your website content?
6. How does communication with the current beneficiaries work?
7. What are the main limitations when promoting the project?

Observation: additional questions were made throughout the flow of the interviews.

**Appendix 4. Interview Script Paula Fernandes (Impact Assessment Manager)**

1. How is the impact of AfG measured?
2. What are the main challenges in evaluating the impact of Apps for Good?
3. What actors are involved in the evaluation of the project?
4. How does the impact assessment change over the years?

Observation: additional questions were made throughout the flow of the interviews.

**Appendix 5. Interview Script Maria Silva (Public School Teacher)**

1. How would you describe the project Apps for Good? And its impact?
2. How is the feedback from students regarding the project?
3. What are the main differences between the approach in public and in private schools?  
And the outcomes?
4. What do you think could be improved in AfG?
5. How long have you participated with AfG?
6. Has it impacted your confidence with technology?
7. Does AfG fill a gap in the current educational program?
8. What is the most impactful aspect of AfG?
9. What is the most memorable App students have produced?
10. What is the greatest selling point for AfG?
11. What happens to the Apps students create once they are finished?
12. Why is it worth it to join the project?
13. Do you feel that you had enough preparation to lead a group of students through a  
technological contest?
14. If you could change something, what it would be?
15. How do you evaluate your motivation with the program during the year?
16. Did you ever want to give up?
17. Did you want to have all your colleagues doing the same as you?

Observation: additional questions were made throughout the flow of the interviews.

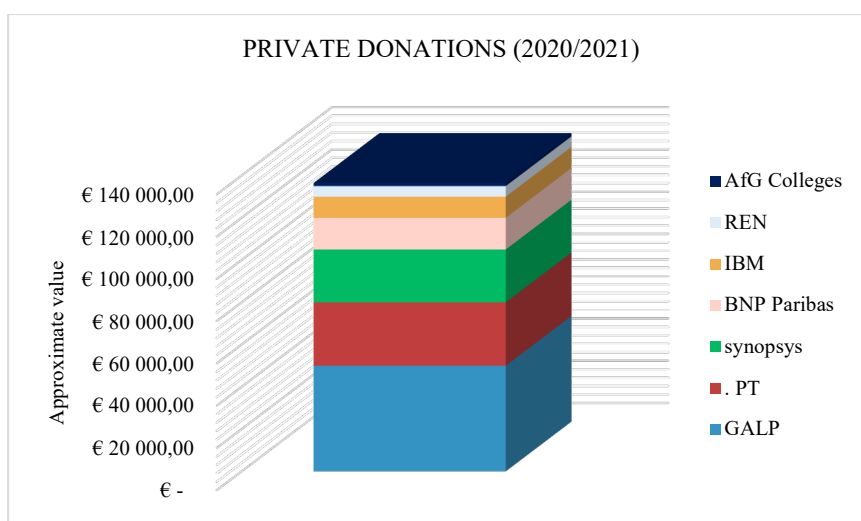
## Appendix 6. Human Resources Organogram



## Appendix 7. Donations breakdown 2020/2021 (CDI Portugal 2022)

ENTITY	APPROXIMATE VALUE
Private Donations (2020/2021)	
GALP	50000
.PT	€ 30 000,00
synopsys	€ 25 000,00
BNP Paribas	€ 15 000,00
IBM	€ 10 000,00
REN	€ 5 000,00
AfG Colleges	€ 1 500,00
Public Entities Donations (2020/2021)	
City Council ... (TBD)	€ 10 000,00
CM Valongo	€ 10 000,00
Public-Funding	
Lisbon 2020 – Apps for Good Lisbon	€ 144 000,00

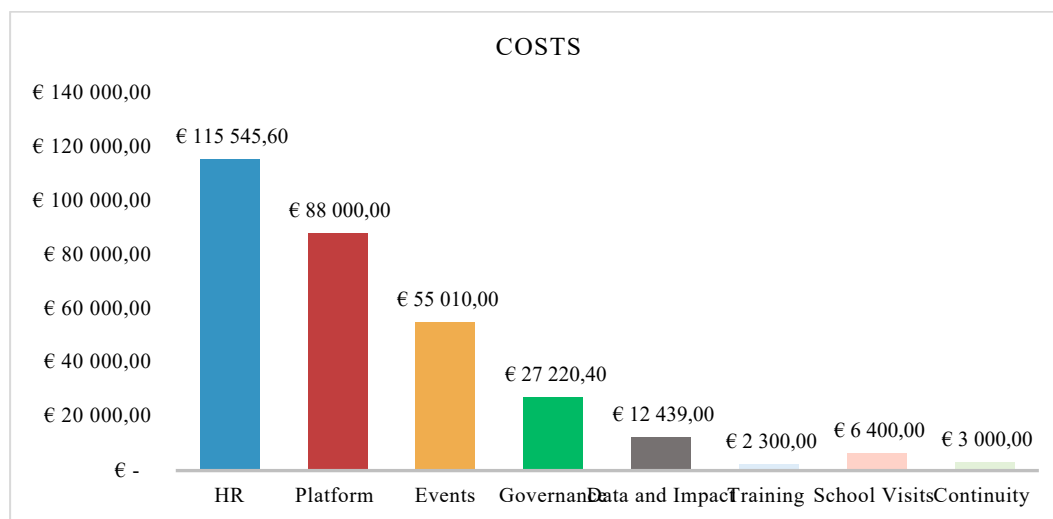
### Appendix 8. Private Donations breakdown 2020/2021 (CDI Portugal 2022)



### Appendix 9. Cost Analysis breakdown 2020/2021 (CDI Portugal 2022)

	Current Cost AfG 2021/2022	
Fixed Costs:		
HR	€	115 545,60
Platform	€	88 000,00
Governance	€	27 220,40
Training	€	9 300,00
Variable Cost:		
Local Events	€	6 600,00
Regional Events	€	25 660,00
Final Event	€	17 850,00
Start-Up Event	€	4 900,00
Total Events	€	55 010,00
Data and Impact	€	12 439,00
School Visits	€	6 400,00
Continuity	€	3 000,00
<b>Total</b>	€	<b>371 925,00</b>

## Appendix 10. Cost Analysis Visual Representation 2020/2021 (CDI Portugal 2022)



## Appendix 11. Overall Apps for Good Impact Considerations (CDI Portugal 2021/2022)

IMPACT ON STUDENTS' SOFT SKILLS	IMPACT ON STUDENT'S MOTIVATION AND CONFIDENCE	IMPACT ON TEACHERS' SKILLS	GENERAL IMPACT
85% Teamwork skills	96% Increased motivation to learn	97% increased their job satisfaction	Students from STEM areas who participate in AfG have, in average, 7% higher grades than the ones who do not participate (study done with 215 students).
77% Idea communication skills	76% Increased confidence	91% feel more professionally involved with the school	
77% Problem solving skills	77% Creativity	86% explores new teaching methodologies	
75% Programming skills		83% have more confidence in teaching	
72% Product design skills		75% work collaboratively	
This numbers are done considering 323 schools, 836 professors and 9705 students that have been impacted by the project.			

**Appendix 12. 17 Sustainable Development Goals (United Nations 2015)**



### Appendix 13. Social Enterprise Diagnostic Tool: Strategy (K. Sousa 2016)

Strategy		
	Score	Weight
The organization has a strategy that defines its vision, mission, and objectives.	5	20%
Where a strategy exists, it has been developed in collaboration with key stakeholders and takes into account the organization's strengths, weaknesses, opportunities, and threats.	3	20%
There is a business plan in place that is directly related to the organization's strategy and identifies the activities to be undertaken to achieve the objectives.	3	20%
A person or team has been appointed to take responsibility for developing, monitoring, and reviewing the business plan on at least a yearly basis.	3	20%
New business development or project ideas are assessed against the overall strategy and the organization's objectives.	4	20%
<b>Average Weighted Score</b>	<b>3,6</b>	<b>100%</b>

### Appendix 14. Social Enterprise Diagnostic Tool: Governance (K. Sousa 2016)

Governance		
	Score	Weight
The organization has an appropriate legal structure in place for its activities, and relevant legal documentation	5	15%
A board of at least 3 people has been appointed to guide the direction of the organization. The board will meet on regular basis to discuss the organization's progress and strategic direction.	4	20%
The board will meet with or receives regular updates from the management team of the organization to ensure that it is aware of any operational and financial issues that could impact the direction of the organization.	3	15%
Board members are recruited based on their relevant expertise, influence, and knowledge. The organization provides capacity building for board members.	4	15%
An organizational chart is in place with clear lines of accountability and authority.	4	15%
The organization has undertaken a stakeholder analysis to understand which parties have a particular interest in it and influence over it.	3	10%
The organization will establish feedback mechanisms to ensure it is meeting the needs of stakeholders,	3	10%
<b>Average Weighted Score</b>	<b>3,8</b>	<b>100%</b>

**Appendix 15. Social Enterprise Diagnostic Tool: Customers & Users (K. Sousa 2016)**

<b>Customers &amp; Users</b>		
	<b>Score</b>	<b>Weight</b>
The organization knows who its key customers are and has undertaken research to understand what customers want and how much they are willing to pay for products or services.	3	20%
There is sufficient demand for the services to make an economic case to stay in the market.	4	30%
The organization understands the needs of its service users/beneficiaries and has developed its activities to meet those needs.	4	20%
Feedback from customers and service users will be collected on a systematic basis and taken into consideration to improve the services and products supplied.	4	15%
Customers range from a variety of segments.	5	15%
<b>Average Weighted Score</b>	<b>4,0</b>	<b>100%</b>

**Appendix 16. Social Enterprise Diagnostic Tool: Social / Environmental (K. Sousa 2016)**

<b>Social / Environmental</b>		
	<b>Score</b>	<b>Weight</b>
The organization understands the outcomes of its activities and the wider impact it seeks to achieve.	5	25%
The organization integrates and appreciates the people and the region that it has set its business.	4	20%
The organization has established/planned for an environmentally sustainable management plan (recycling, clean energy, lighting, etc..)	4	30%
The organization will use data from outcomes and impact assessment marketing materials, funding ids, board reports, and other organizational documents, to articulate and demonstrate the social value of the organization.	3	25%
<b>Average Weighted Score</b>	<b>4,0</b>	<b>100%</b>

**APPENDIX 17. Social Enterprise Diagnostic Tool: Operations (K. Sousa 2016)**

<b>Operations</b>		
	<b>Score</b>	<b>Weight</b>
The organization will plan its activities and resources to achieve operational efficiency.	2	20%
Project and contract delivery will be monitored to ensure resources are correctly allocated and spent and deliverables are achieved.	3	20%
Useful data will be collected by the organization and managed according to appropriate requirements and the Data Protection Act.	4	15%
Data collected will be analyzed and shared with the Management Team and the Board, for strategic decision-making, reporting, and marketing.	4	15%
The organization has undertaken an analysis of risks and has put in place strategies to deal with those which could have a significant negative effect on the organization.	3	15%
The organization has quality assurance procedures in place that help the organization to improve its operational effectiveness.	3	15%
<b>Average Weighted Score</b>	<b>3,1</b>	<b>100%</b>

**Appendix 18. Social Enterprise Diagnostic Tool: IT & Data**

<b>IT and Data</b>		
	<b>Score</b>	<b>Weight</b>
The organization has Information Communication Technology (ICT) systems in place that meet their needs, are reliable, and fit for purpose.	4	20%
There is suitable and easily accessible ICT support in place (in-house or externally) to manage the system.	3	15%
All users of ICT in the organization are trained and able to use the equipment and software in line with their roles and responsibilities.	4	20%
An IT backup procedure will be undertaken regularly should the system fail.	3	15%
The organization has/will have administrative procedures and filing systems (paper or online) in place, and proportionate staff time is designated to undertake its work	4	15%
All staff understands what is required of them in terms of systems, processes, and data management.	5	15%
<b>Average Weighted Score</b>	<b>3,9</b>	<b>100%</b>

## Appendix 19. Social Enterprise Diagnostic Tool: Finances

Finances		
	Score	Weight
The organization has a designated person responsible for strategic and operational financial matters. This person is supported by the board to effectively manage the finances of the organization.	5	15%
The organization has written financial policies and procedures, approved by the Board, which relevant staff is aware of and action as necessary. The organization has policies including a reserves policy, an accounting policy, and a risk register, to ensure the effective financial management of the organization.	2	10%
Financial information will be produced regularly and includes income and expenditure accounts with actual compared to budget; balance sheet; cash-flow forecasts; and reports on significant financial risks.	3	15%
Financial management information will be presented in a consistent format, accessible and easy to understand; also based on robust data management systems and data quality is assured.	2	10%
Break-even points for the organization's services are understood.	2	10%
The organization is managed proactively to ensure its financial sustainability (profitability, liquidity, and solvency).	2	15%
The organization understands and meets all its legal and statutory financial requirements.	4	15%
The Board will receive regular reports on the financial management of the organization, including significant financial risks and how these are being managed.	3	10%
<b>Average Weighted Score</b>	<b>3,0</b>	<b>100%</b>

## Appendix 20. Social Enterprise Diagnostic Tool: Income Generation

Income Generation		
	Score	Weight
The organization has diverse sources of income.	2	20%
The organization has business development plans in place to minimize dependency on grants and move towards self-sustainability.	3	20%
The organization is aware of and knows how to identify funding and tender to opportunities using a wide variety of sources (networks, internet portals, and publications), and how to prioritize them.	3	20%
The organization focuses on winnable opportunities and has a high success rate for contracts or business won.	3	20%
The company doesn't have a single service that constitutes more than 20% of its turnover.	3	20%
<b>Average Weighted Score</b>	<b>2,8</b>	<b>100%</b>

## Appendix 21. Social Enterprise Diagnostic Tool: Marketing & Communications

Marketing and Communications		
	Score	Weight
The organization has a marketing plan in place to promote its services and products.	2	20%
The organization will designate resources (staff, time, and money) for sales and marketing activities.	2	20%
The organization has developed a Unique Selling Point and will exploit this to attract customers.	4	20%
The organization will have a mechanism to measure the effectiveness of its marketing activity.	2	20%
The organization has a communication plan to articulate its value and activities to key stakeholders. Communication materials are sensitive to the needs of and access to user groups.	3	20%
<b>Average Weighted Score</b>	<b>2,6</b>	<b>100%</b>

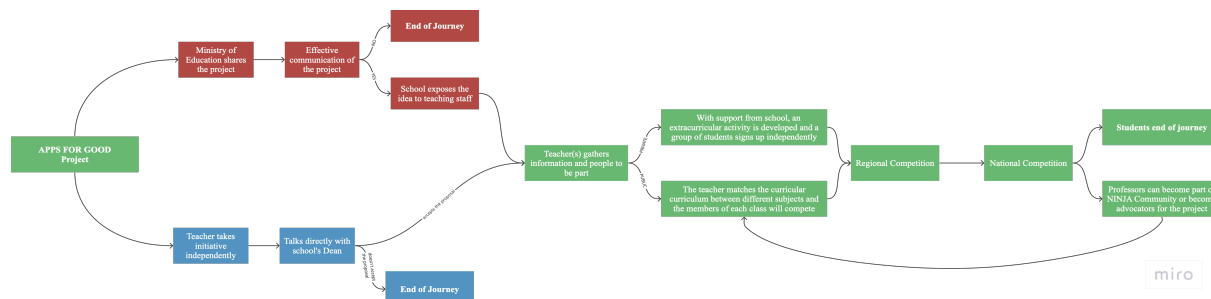
## Appendix 22. Social Enterprise Diagnostic Tool: HR & Organisational Development

HR & Organisational Development		
	Score	Weight
All staff members have an employment contract and relevant job description.	5	15%
The organization has a staff handbook that covers all HR and organizational policies which staff is to be aware of and is responsible for adhering to.	3	20%
A staff appraisal system will be in place and all staff will have a development plan. The organization will actively support the training of staff concerning their development plans.	3	15%
Good staff performance will be recognized and rewarded.	4	15%
The organization has health and safety, diversity, and equal opportunity policies which are reviewed at least once a year to ensure they are in line with new legislation and monitored to ensure that the organization operates in compliance with its policies.	3	15%
The organization has clear communications, grievance, and staff complaints procedures in place, and any staff issues are dealt with following the policies.	4	10%
The organization will undertake a regular review of its business plan to identify and fill any gaps in its resources, knowledge, or skills that could prevent it from effectively delivering its services.	3	10%
<b>Average Weighted Score</b>	<b>3,6</b>	<b>100%</b>

## Appendix 23. Social Business Model Canvas

<b>KEY RESOURCES</b> <ul style="list-style-type: none"> <li>• Teachers</li> <li>• Experts</li> <li>• Digital Platform</li> <li>• Funding</li> </ul>	<b>KEY ACTIVITIES</b> <ul style="list-style-type: none"> <li>• Community engagement</li> <li>• Promotion of the program</li> <li>• Resource allocation</li> <li>• Competition requirements (regionals and final event)</li> </ul>	<b>CORE INTERVENTION</b> <ol style="list-style-type: none"> <li>1. To develop schools that are accessible to the community and have a link to the real world.</li> <li>2. To combine technology and active citizenship.</li> <li>3. To empower young people for the future.</li> <li>4. To alter and reinvent teaching techniques.</li> </ol>	<b>SEGMENTS</b> <ul style="list-style-type: none"> <li>• Students</li> <li>• Teachers</li> <li>• Experts</li> <li>• Partners / Sponsors</li> </ul>	<b>VALUE PROPOSITION</b> <i>social value proposition</i> Being part of a holistic project where the focus is on developing better citizens, developing educational techniques, opening horizons to social causes and, above all, improving digital literacy in Portugal.
<b>KEY PARTNERS</b> <ul style="list-style-type: none"> <li>• Galp</li> <li>• .PT</li> <li>• synopsis</li> <li>• BNP Paribas</li> <li>• IBM</li> <li>• REN</li> </ul>		<b>CHANNELS</b> <ul style="list-style-type: none"> <li>• Ministry of Education</li> <li>• Members of Community</li> <li>• B2B direct communications</li> </ul>	<i>beneficiaries</i> <b>customers</b> <ul style="list-style-type: none"> <li>• Private Schools</li> </ul>	<i>impact mission</i> By altering educational methods through digital technology, create a new generation of young people who are more collaborative, self-assured, and ready to make a difference in the world. <i>customer value proposition</i> To provide an extracurricular experience focused on the personal and technological development of each of those involved, with the intention of making an impact on the future.
<b>COST STRUCTURE</b> <ul style="list-style-type: none"> <li>• Human Resources</li> <li>• platform</li> <li>• Events</li> <li>• Governance</li> <li>• Data and Impact</li> <li>• School Visits</li> </ul>		<b>SURPLUS</b> When generated, reinvesting it to further increase the reach of impact.	<b>REVENUE</b> <ul style="list-style-type: none"> <li>• Sponsorships</li> <li>• donation-bases streams</li> <li>• private schools subscription</li> </ul>	
Source: Social Business Design. 2022. <i>Social Business Model Canvas: What it is and how to use it</i> . Accessed December 2022. <a href="https://socialbusinessdesign.org/what-is-a-social-business-model-canvas/">https://socialbusinessdesign.org/what-is-a-social-business-model-canvas/</a> CDI Portugal. 2022. CDI Portugal: Infográfico Apps for Good: 8ª Edição. Accessed November 2022. <a href="https://cdi.org.pt/infografico-apps-for-good-8-edicao-2021-2022/">https://cdi.org.pt/infografico-apps-for-good-8-edicao-2021-2022/</a> .				

## Appendix 24. Subsidiaries Customer Cycle



## Appendix 25. SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>Promotes discipline and rigor in work.</li> <li>Gives learning opportunities for teachers and students.</li> <li>Facilitates the implementation of new content independently.</li> <li>Promotes digital knowledge on the learning process in different ambiances.</li> <li>The platform is strong and developed.</li> <li>Promotes entrepreneurship and autonomy.</li> </ul>	<ul style="list-style-type: none"> <li>The high workload for teachers.</li> <li>Absence of didactic return that project might give back.</li> <li>The program is not sufficiently disseminated.</li> <li>Very bureaucratic.</li> <li>Difficulty to manage the work done and solving problems as they arise.</li> <li>Marketing strategy underdeveloped.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>The development of society towards a more technological ambience.</li> <li>Digital Education Action Plan (European Union).</li> <li>Portugal Digital and Action Plan for Digital Transition reinforces the need for projects like this to be implemented.</li> <li>Trends to abolish digital illiteracy.</li> <li>State incorporating the program into the regular curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of support from municipalities might represent a higher cost in mobilization.</li> <li>Lack of support from schools means fewer teachers getting involved.</li> <li>The project is easier to implement in private schools, but the number of partners is reduced.</li> <li>Difficulties in dealing with the Government.</li> <li>Not being able to attract talent as an NGO and hence not being able to sustain growth.</li> <li>Losing market share due to lack of support from subsidiaries.</li> <li>The trade-off between the growth of the project and the development of the platform.</li> </ul>

## Appendix 26. Portugal and UK Mapping: Summary & Analysis (EY) (CDI Portugal 2022)

	PORTUGAL	UK	KEY DIFFERENCES
<b>Teacher Recruitment</b>	<ul style="list-style-type: none"> <li>Annual email from education team to Schools Baseline (all schools in Portugal).</li> <li>Ministry of Education invitation.</li> <li>Other: channel partners (especially teachers' association), social media, word of mouth (Ninja teachers), conferences, press.</li> </ul>	<ul style="list-style-type: none"> <li>Channel partners (e.g., CAS).</li> <li>Word of mouth.</li> <li>Social media.</li> <li>Corporate and other partnerships (e.g., GBIC, Vodafone).</li> <li>Website content available pre-sign.</li> </ul>	<ul style="list-style-type: none"> <li>Portugal works more to a timeline while UK recruitment is ongoing (although the PT survey opens all year).</li> <li>Portugal has the Ministry of Education backing and direct access to schools while the UK has no direct access to schools.</li> <li>UK partnerships sometimes bring additional schools.</li> <li>The UK gives access to a significant amount of content pre-sign-up.</li> </ul>
<b>Teacher Onboarding</b>	<ul style="list-style-type: none"> <li>Set timing every year (e.g., recruitment and onboarding in September/October).</li> <li>Enrollment survey sent via email.</li> <li>Platform sign-up and account creation.</li> <li>Welcome email with first steps and guidance, plus a get-started guide.</li> <li>Ask questions - email and call.</li> </ul>	<ul style="list-style-type: none"> <li>Create an account.</li> <li>Optional sign-up survey.</li> <li>Customized emails offering support and highlighting resources (ad hoc).</li> <li>Educator newsletter.</li> <li>Webinars (trial).</li> </ul>	<ul style="list-style-type: none"> <li>Portugal has a more structured process than the UK.</li> </ul>
<b>Teacher Training</b>	<ul style="list-style-type: none"> <li>Intensive teacher training program: 1 full-day in-person session based on UK's earlier training methodology; 5x remote 1-hour sessions on each AFG Module. Each session: 1 expert talking about the topics (business model for example), then Ninja best practice.</li> <li>Welcome session: AFG overview + guidance on the platform.</li> <li>Platform (content, tools, industry engagement, collaborative work between teachers &amp; students).</li> <li>Teachers support each other within a school.</li> <li>Ask questions (email, phone).</li> </ul>	<ul style="list-style-type: none"> <li>Course content.</li> <li>Webinars.</li> <li>Educator support area (get started guide, curriculum mapping, guidance on tools, Awards entry example, workbook example, industry engagement).</li> <li>Teachers support each other within a school.</li> <li>Ask questions (email and chat).</li> </ul>	<ul style="list-style-type: none"> <li>Portugal offers an intensive, structured training program.</li> <li>AFG training largely through online content and teacher-led, though now trialing webinars.</li> </ul>
<b>Teacher Support</b>	<ul style="list-style-type: none"> <li>Ask questions (email, phone, quick online meetings).</li> <li>Support phone calls from the education team (Jan to March, when most teachers are likely to drop out).</li> <li>School visits (1 at beginning of the year, 1 end): educator support, speaking to students and explaining the program, impact evaluation, corporate partners join.</li> <li>Email from team offering ideas to unblock students' creativity (pain-point for teachers).</li> <li>Platform demonstration videos.</li> <li>Experts.</li> <li>Ninja Teachers.</li> </ul>	<ul style="list-style-type: none"> <li>Direct-to-student video content to supplement teacher (optional).</li> <li>Educator support area.</li> <li>Ask questions (chat and email).</li> <li>Emails from the education team offering support and highlighting resources.</li> </ul>	<ul style="list-style-type: none"> <li>Portugal is more proactive and can align support to the timeline.</li> <li>Portugal visits all new schools in person.</li> <li>UK relies on teachers reaching out when they need help (due to the more flexible nature of UK delivery and online model, the UK team currently does not have enough data to offer targeted support).</li> </ul>
<b>Industry mentoring for students &amp; teachers</b>	<ul style="list-style-type: none"> <li>Teacher training remote sessions.</li> <li>School visits.</li> <li>Expert sessions.</li> <li>Regional and final judging.</li> <li>App Start-up (judging and potential 'investors').</li> <li>Pitch Accelerator.</li> </ul>	<ul style="list-style-type: none"> <li>Expert sessions</li> <li>In-person/remoteworkshops</li> <li>Expert Feedback Tool</li> <li>Shortlisting Awards entries</li> <li>Awards judging</li> <li>Thought leadership/blog pieces (in plans, not implemented)</li> <li>Host student visits</li> </ul>	<ul style="list-style-type: none"> <li>Portugal uses volunteers for teacher training.</li> <li>The UK has an Expert Feedback Tool and remote shortlisting process.</li> </ul>
<b>Volunteer support and recruitment</b>	<ul style="list-style-type: none"> <li>A customized email with an invitation to be an Expert was sent to volunteer baseline at each company.</li> <li>Half-yearly partner meeting (call to action to volunteer).</li> <li>Online sign-up.</li> <li>Expert requests through the platform, Experts receive requests by email as well.</li> <li>Expert dashboard with session sign-ups and stats on activity.</li> </ul>	<ul style="list-style-type: none"> <li>Expert sign-up on the website.</li> <li>Presentations to staff (call to action to volunteer).</li> <li>Emails/customized recruiting materials via CSR/HR contact.</li> <li>'Be the Student' sessions.</li> <li>Expert requests through the platform, Experts receive requests by email as well.</li> <li>Expert dashboard for Expert session sign-ups.</li> <li>Expert stats compiled and sent manually.</li> </ul>	<ul style="list-style-type: none"> <li>Very similar approach.</li> </ul>
<b>Annual Competition</b>	<ul style="list-style-type: none"> <li>All schools are invited to participate.</li> <li>Regional: entries online directly by students via the platform (April to May); educator approval needed.</li> <li>Regional: secondary and primary division and grouped according to SDG.</li> <li>4 regionals: North, South, Madeira, and Azores Islands.</li> <li>At regional: 6 rooms, 10 teams &amp; 5 judges per room.</li> <li>If more than 60 entries at each regional, then shortlisting is conducted (but has not yet been needed).</li> <li>Regional shortlisting via 10 criteria, winners selected according to best score (online Excel).</li> <li>Partners pre-evaluate entries 2 weeks before Regional and submit the final evaluation on the day, through the platform (Jury Dashboard).</li> <li>22 Finalists selected from regionals -direct to Final event.</li> <li>Final Awards: Podium (1st, 2nd, 3rd primary &amp; secondary, Girls Award, Tech Award, Public Award, paid categories award).</li> <li>Final: 1-panel jury with 20 people, 1 jury for Tech Award.</li> <li>All competition processes integrated on the platform: entries, jury evaluation (pre and final), results, etc</li> </ul>	<ul style="list-style-type: none"> <li>Global competition with open online entry by students with no sign-up required, but teacher/parent email must be provided.</li> <li>Expert Feedback Tool submissions converted to entries.</li> <li>Purpose-built shortlisting platform to select finalists.</li> <li>Staff at funders and volunteers rate entries in their own time, followed by an internal review of top-rated entries and then categorizing.</li> <li>The website showcases finalists.</li> <li>Finalist teams pitch to judges in categories (5-6 judges), and judges pick a winner.</li> <li>People's Choice Award online vote.</li> <li>Categories by age range, and then additional categories depending on the partner.</li> </ul>	<ul style="list-style-type: none"> <li>Portugal has regional 'heats' process with large, in-person events in each region.</li> <li>Portugal does not have an Expert Feedback Tool.</li> </ul>
<b>Other events</b>	<ul style="list-style-type: none"> <li>App Start-Up event open to all past students, normally held at a large public-facing tech conference</li> </ul>	<ul style="list-style-type: none"> <li>Regional 'celebration' events.</li> </ul>	<ul style="list-style-type: none"> <li>Portugal has App Start-Up event.</li> </ul>
<b>Direct to Student Offer</b>	<ul style="list-style-type: none"> <li>Fellows group.</li> <li>Students' volunteers at events and external/partner events.</li> <li>Awards entry.</li> <li>Platform video.</li> <li>Student Dashboard (access to content, educator collaboration, and gamification)</li> </ul>	<ul style="list-style-type: none"> <li>The home study course is self-paced, and no sign up required.</li> <li>Awards entry.</li> <li>Workshops.</li> <li>Expert Feedback Tool.</li> <li>Youth Advisory Board (in planning phase).</li> <li>Student workbook.</li> <li>Students volunteer at AFG events.</li> <li>QR code quizzes (trial).</li> </ul>	<ul style="list-style-type: none"> <li>Portugal has a Fellows group.</li> <li>Portugal has Student Dashboard with multiple features.</li> <li>The UK has an Expert Feedback Tool.</li> <li>UK planning Youth Advisory Board</li> </ul>
<b>Fundraising</b>	<ul style="list-style-type: none"> <li>Funding from: corporate and corporate foundations, prizes (e.g., UNESCO, European funds (Portugal 2020), City Councils (regional events), and Private schools fee (very little).</li> <li>Digital inclusion and literacy.</li> <li>Disadvantaged young people and gender diversity.</li> <li>Achieving the Sustainable Development Goals.</li> <li>Place-based.</li> <li>Skills-based volunteering opportunities.</li> <li>Apps for Good/CDI brand awareness.</li> </ul>	<ul style="list-style-type: none"> <li>Funding from: corporate and corporate foundations, trusts &amp; foundations, government contracts (England), social franchise partner income, and private schools fee (very little to none).</li> <li>Skills-based volunteering opportunities and company culture.</li> <li>Content co-creation.</li> <li>Digital inclusion and literacy/digital skills gap.</li> <li>Disadvantaged young people and gender diversity.</li> <li>Place-based.</li> <li>Empowering young people through technology</li> </ul>	<ul style="list-style-type: none"> <li>A very similar approach to fundraising in terms of funding sources and why partnerships get involved.</li> <li>The UK relies more on 'App in a Day' volunteering partnerships (Portugal does not deliver these) and does content co-creation.</li> </ul>

	<ul style="list-style-type: none"> <li>Transforming the education system.</li> </ul>		
<b>Platform</b>	<ul style="list-style-type: none"> <li>Outsystems low-code platform, multi-language capability.</li> <li>Cloud-based solution without the need for infrastructure and 3 environments (development, quality, production) together, making development and maintenance ch Dashboard on Outsystems.</li> <li>CDI website on WordPress + Youtube videos.</li> <li>Admin Dashboard: to view data.</li> <li>Competition, surveys, etc all through the platform.</li> <li>Educator Dashboard: content and support, teacher/student interaction, can invite other teachers.</li> <li>Student Dashboard: content, competition, gamification.</li> <li>E-Goi for email marketing.</li> <li>Competition entries and evaluation on the platform.</li> <li>Platform hosting via AWS cheaper and easier.</li> <li>Educator, Student, Expert, and Admin</li> </ul>	<ul style="list-style-type: none"> <li>Best-in-class SaaS on RoR framework: Contentful, Github, Heroku, AWS, Zappier + others. Third-party development agency plus Product Manager on AFG team.</li> <li>English-only.</li> <li>Public-facing website with seamless UX between log-in and log-out state for the educator, plus 'My Account' Educator Area.</li> <li>Expert Dashboard for session sign-ups; separate access to Expert Feedback Tool (via email invite) and Shortlisting (via email invite).</li> <li>Expert Feedback Tool via Typeform, access via QR code in workbook or educator provides a link.</li> <li>Awards via Typeform, access via the public website (also in course content).</li> <li>Admin area to view sign-ups.</li> <li>Intercom, Mixpanel, and G-analytics for tracking educator activity.</li> <li>Custom-built RoR shortlisting and EFT platforms.</li> <li>Mailchimp for newsletters</li> </ul>	<ul style="list-style-type: none"> <li>Very different technology stacks and approaches.</li> <li>Portugal is custom-built, with less use of off-the-shelf SaaS than the UK.</li> <li>Very different UX and presentation of courses and support.</li> <li>Portugal has a more complex and feature-rich offering, seeking to increase teacher usage of the platform vs VLEs.</li> <li>UK assumes educators use VLE therefore ensure materials are in-sync and adaptable to those.</li> </ul>
<b>Educator &amp; School profile data</b>	<ul style="list-style-type: none"> <li>Data from federation:</li> <li>57% Non-IT teachers.</li> <li>67% Female Teachers (Students: 43% girls).</li> <li>60% Secondary Schools (Students: 15 years old average age).</li> <li>47% Curricular delivery; 36% Extracurricular; 19% Mix.</li> <li>61% Mainstream Courses/teaching; 39% Professional Schools.</li> <li>Since the beginning: 738 teachers trained on Apps for Good Methodology.</li> <li>10% of Portugal schools are TEIP schools (Schools that are part of the Priority Intervention Educational Territories Programme).</li> <li>From 2020/21, Portugal will ask teachers to report on students receiving School Social Action (support for families with lower incomes) -data available in the summer</li> </ul>	<ul style="list-style-type: none"> <li>Majority computing teachers.</li> <li>60% of schools are in challenging circumstances.</li> <li>50% girls.</li> <li>50/50 club/curriculum split for delivery</li> </ul>	<ul style="list-style-type: none"> <li>Portugal has more detailed/reliable data on teachers and delivery models.</li> <li>Portugal has a large proportion of non-IT teachers.</li> <li>The UK has data on the reach of schools in challenging circumstances</li> </ul>
<b>Impact Evaluation</b>	<ul style="list-style-type: none"> <li>Initial and end-of-year surveys for teachers.</li> <li>End-of-year survey for students.</li> <li>Surveys after teachers' training.</li> <li>Survey for the jury after a competition.</li> <li>Survey for parents.</li> <li>Interviews on School visits.</li> <li>Case Studies.</li> </ul> <p>Outputs: Impact Report (by Instituto de Educaçao de Lisboa -Lisbon University - external entity) and Infographic (Pt &amp; EN).</p>	<ul style="list-style-type: none"> <li>End-of-year survey for students and teachers.</li> <li>Survey links embedded into course content.</li> <li>Student surveys after workshops.</li> <li>Student interviews (ad hoc).</li> <li>Teacher interviews are conducted throughout the year.</li> <li>Part of the 'Gender Balance in Computing' program: 4-year study to understand how to engage more girls in computing</li> </ul> <p>Outputs: Infographic.</p>	<ul style="list-style-type: none"> <li>Portugal has a pre-survey for teachers (the UK dropped this after a poor response rate).</li> <li>Portugal has much higher response rates for teacher surveys (but also student surveys) due to close relationships with educators and structured processes (and possibly DfE backing?).</li> <li>Portugal has been conducting trials beyond the surveys.</li> <li>UK part of a national study on computing education.</li> </ul>