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HOW CAN CDI PORTUGAL IMPROVE APPS FOR GOOD VALUE PROPOSITION BY ENHANCING POINTS OF LEVERAGE TO BETTER SUIT THE TARGET MARKET?

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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 the 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. Enhancing the qualities and best features of the project are crucial aspects to highlight when sharing the real value project, as well as enhancing communication and marketing strategies. Following the community sense that has been shared since the beginning of the project, the CDI Portugal team should rely on teachers and students to better promote the benefits from taking part in Apps for Good.

Keywords

Apps for Good; CDI Portugal; Digitalization; Education; Inclusion; Marketing Mix; Value Proposition.

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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 delt with this in different ways. The European Commissioned 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 labor in the digital workforce, and second the need for basic digital skills amongst citizens to participate in an ever more digital society (Commission 2022). 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 (Commission 2022). 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 (Commission 2022).

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. 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 Comission 2022). The Commissions 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 Comission 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 Comission 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 Comission 2022).

1.1.2. Teaching Profession Transition to Digitalization

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 cannot 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 organized 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 because 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 Organizations 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 fourth 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 15th 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 18th 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 12th 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 14th 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 19th to 15th, 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 do 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, IEFP 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 1st cycle is the first 4 years of primary school, the 2nd cycle is the 5th and 6th grades, and the 3rd cycle is from the 7th to the 9th grade; secondary education (15 to 18 years old) from the 10th to 12th 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.

Comparison of teachers needed and available			
Subject Group	**Teachers needed from 2022/23 to 2025/26** (on average, per year)	**Teachers needed from 2026/27 to 2030/31** (on average, per year)	**New teachers graduated from 2016 to 2020** (on average, per year)
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

B. Being a Teacher in Portugal

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

Being a teacher in Portugal has not been an attractive job. 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.

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 Portugues 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 2nd (CGTP 2022) and in the 18th (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 for current needs. Most of the time it happens that the organization 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.

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 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 9th 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 programs 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^{th} to 12^{th} 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.

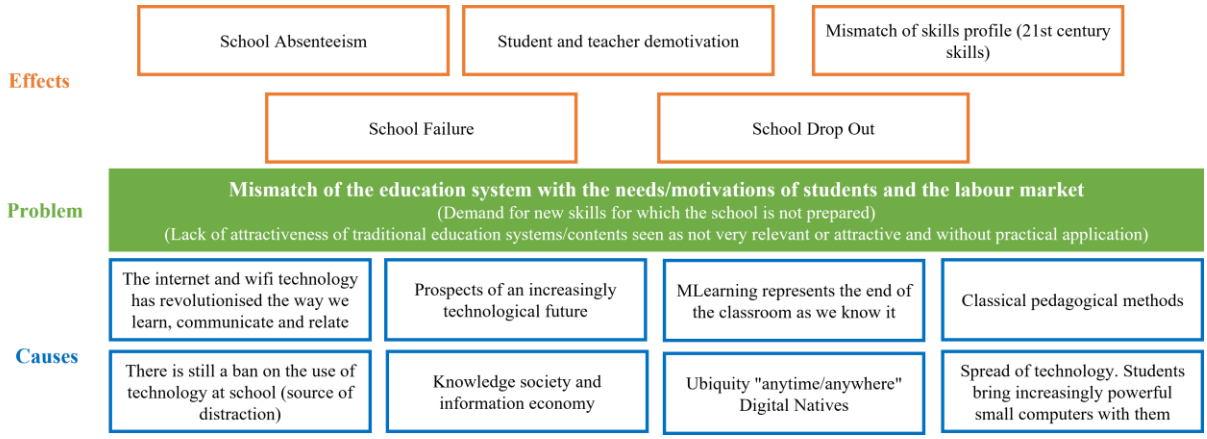

Figure 1 – Social Problem Tree (Source: (CDI Portugal 2022))

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 8th 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
How can the core of the business be assessed considering a triangle diagnostic? 2.1.1. Organization Analysis: Human Resources & Work Environment. 2.1.2. Financial Analysis: Sustainability *versus* Growth Paradox in Apps for Good. 2.1.3. Impact Analysis: Apps for Good as leverage for CDI.	Organogram Human Resources Costs and Revenues Analysis Impact Infographics
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 2.2.2. Business Model: Apps for Good	Social Enterprise Diagnostic Tool Customer Cycle Social Business Model Canvas
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 2.3.2. Apps for Good: Challenges for Scaling 2.3.3. Apps for Good within CDI: Portugal and UK	SWOT Analysis Secondary Research Internal Data

CHAPTER THREE: MARKET

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

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.

<table>
<tr><td colspan="2">CHAPTER KEY QUESTION

How can CDI Portugal improve Apps for Good value proposition by enhancing points of leverage to better suit the target market?</td></tr>
<tr><td>SECTION AND RESEARCH QUESTIONS</td><td>METHODOLOGY</td></tr>
<tr><td>What are the most important public entities to further penetrate the market and how can Apps for Good reach them?

4.1.1. Marketing mix for public schools

4.1.2. Value proposition for public schools

4.1.3. Benefits for public sponsors (municipalities)</td><td>4 Ps Analysis (Marketing mix)

Value Proposition Canvas</td></tr>
<tr><td>How can private entities be addressed?

4.2.1. Marketing mix for private schools

4.2.2. Value proposition for private schools

4.2.3. Benefits for private sponsors (companies)</td><td>4 Ps Analysis (Marketing mix)

Value Proposition Canvas</td></tr>
<tr><td>What are the final recommendations and next steps to follow?

4.3.1 Final Recommendations and Next Steps</td><td></td></tr>
</table>

4. VALUE PROPOSITION: HOW CAN CDI PORTUGAL IMPROVE APPS FOR GOOD'S VALUE PROPOSITION BY ENHANCING POINTS OF LEVERAGE TO BETTER SUIT THE TARGET MARKET?

Currently, Apps for Good is facing difficulties in attracting more schools and sponsors. This happens mainly due to the misunderstood value proposition in these entities, as there are promoting issues that affect the perception of the project. If one does not realize the power and impact Apps for Good can have, it will not be interested in joining the program. So far, the market penetration strategy is stated as the best one, as the segments where Apps for Good is currently working with, and the current product are the ones that best fit. To better understand how CDI can use the benefits of Apps for Good to further penetrate the public and private sectors, while working with public and private schools, companies and municipalities, the Marketing Mix Analysis (4 Ps) (Perreault and McCarthy 2002) and the Value Proposition Canvas (Osterwalder, et al. 2014) will be addressed.

4.1 Public Entities

4.1.1 Marketing mix for public schools

According to Perreault and McCarthy (2002), the marketing mix is composed of the controllable variables the company puts together to satisfy the target market – public schools.

A. Product

Apps for Good is the product itself – it is the project that is offered to the client (Perreault and McCarthy 2002). The current strengths of the project in public schools are mainly related with the satisfaction and impact it has on its beneficiaries and the impact. Regarding teachers, all of them develop teaching skills, by doing the training sessions provided and 20% of them even

become certified trainers of the project. Indeed, CDI Portugal is a recognised Issuing Centre for "*Diploma de Competências Básicas"* (Basic Competences Diploma) in ICT by the Portuguese Foundation for Science and Technology (CDI Portugal 2022). Furthermore, satisfaction and retention rates are very positive, rounding 90% and 70%, respectively. Grades also improve when students take part in the program (see Appendix 6 for more rates) (CDI Portugal 2022). It was also stated during interviews that 60% of teachers repeat the project (in more than one year) and 70% of schools also take part twice or more (Baracho and Buisel 2022).

Sustainability also plays a significant role in the development of the Apps, as there are connected to one of the 17 SDGs of UN for 2030 (United Nations 2015). In the 8th Edition, from the 150 solutions developed, the most common the SDGs involved were the 3rd, the 4th and 13th (refer to Appendix 7 to further detail) (CDI Portugal 2022).

Regarding the Work Platform (see Appendix 8), it is where students and teachers follow the progression during the project, access the different courses (Appendix 9), and communicate with the Experts, to learn from them. This is especially relevant for students who follow professional tracks on their education, as they will probably start their career straightforward.

Communication among teachers is flowing well, as the Apps for Good team visits public schools twice a year, to ensure the program is working accordingly. These meetings are crucial for teachers, as they reinforce the trustful, close relationship with the Apps for Good team and increase the willing to continue on the project years on a row (Silva 2022).

To fortify the connection with teachers, Apps for Good has a group of teachers called *Ninjas*, which work as Advisors for the project, by giving constant feedback to the Apps for Good team, who is always open to improve, which is valued too. Teachers play a crucial role in managing the community and moving more and more students to join the program (Silva 2022). Even

when they move from one school to another – usually from public to private schools –, they try to bring it with them.

However, the main struggle remaining for public schools' teachers is the lack of time to apply the Apps for Good content during the classes (include them in the curriculum), as there is already heavy mandatory from the DGE, and sometimes the tasks have to be done at home, as a homework – which students do not enjoy. Sometimes, even teachers end up doing the project in unpaid extra hours, which becomes demotivating and tiring. Teachers from other lectures and the schools' principals are usually unaware of Apps for Good, and these could be more supportive when it comes to facilitating time for applying the Apps for Good courses.

To solve these issues, it is fundamental to establish a better relationship with the Ministry of Education, the Secretary of State for Economy and Digital Transition and other public entities, like DGE, that can have a word on better promoting and applying the project according to the schedules of both teachers and students, so there is no need to do the tasks in extra hours.

Other challenges are related with the Work Platform's capacity, which is currently supplied by Outsystems and holds a limit of 10,000 users. As CDI wants to further penetrate the market, and later scale nationally, there is the need to expand the platform's capacity, as more users are expected to join. To do this, the Apps for Good team should try to expand the current coverage or explore other suppliers, such as Microsoft or Synopsys, who already sponsor Apps for Good.

Lastly, it is clear that the product itself does not need to be changed, as the results from previous editions are positive. This confirms that market penetration is the strategy that best addresses CDI, by proceeding with the existing product although slight improvements can be considered.

B. Price

Theoretically, the price established considers competition, costs, and reactions to oscillations in prices (Perreault and McCarthy 2002). However, for Apps for Good, price is the only variable that has no space to change for public schools – currently, they do not pay anything for having the program going. They can have as many teachers and students as they want and there is no subscription fee (CDI Portugal 2021).

C. Place

The place represents all the decisions involved to deliver the product to the client itself (Perreault and McCarthy 2002). In this case, public schools represent 99% of Apps for Good client in the education field (CDI Portugal 2021). Public schools remain deeply important for the project – although they do not fund it, they are its main boosters, in terms of impact (number of students) to achieve the goal of including Apps for Good in the National Curriculum (CDI Portugal 2022). Market penetration is, again, the most suitable strategy, as retaining current schools is crucial, but it is even more important to attract more schools.

D. Promotion

Promotion refers to telling and selling the product to the customer (Perreault and McCarthy 2002), and Apps for Good is still lacking effective strategies to better communicate the project and its results. Currently, the communication is done through social media – Facebook, Instagram, YouTube, Twitter, and LinkedIn –, CDI's website and face-to-face events. In addition, word of mouth plays a major role for the project's promotion, as teachers are the main drivers when it comes to attracting other teachers and students to join Apps for Good (Andrade 2022). First, it is important to state that CDI team struggles to increase brand awareness of Apps

for Good, as there are limited human and monetary resources. Then, the online promotion is done in the name of "CDI Portugal" and not "Apps for Good," as the second one is the name used by Apps for Good UK. So, besides Apps for Good, all CDI projects are promoted in these channels.

Social media promotion is one of the key improvements to do, as current promotion is based on non-segmented posting, similar in Facebook, Instagram and LinkedIn (see Appendix 10). For YouTube, the promotion is mainly related with interviews, teasers, after movies and "call to action" (Appendix 10). The like-to-follow rates in the different networks are low (Appendix 11), as the engagement from the followers is not representative and needs to be boosted. Twitter is not used with regularity, with an average of 1 tweet (post) per month, in the last 12 months (Apps for Good Portugal 2022). To start, the Communication and Events team should try to establish segment-oriented strategies for the different social media networks.

Firstly, Instagram should be the bridge between CDI and the community: this is where they could use storytelling to show the impact of Apps for Good and to engage with the current beneficiaries. Storytelling can be effective, as the audience understands the VP of the project and creates an emotional bond with the organization, by sharing the mission and vision (NGOs Communication Camp 2013). Adding a captivating *biography* where the user understands the value of the project and sees that it won a UNESCO prize (Direção-Geral da Educação 2022) is also crucial to catch more attention from users (Appendix 12). Then, communication could be based on community engagement, by interviewing Alumni and showing the impact they currently have on the society and how Apps for Good impacted them (see Appendix 13 for more).

Regarding LinkedIn, the strategy should be more B2B oriented, where CDI posts about the new sponsors, comments and shares their posts and asks them to do this too, in order to retain more attention from possible partners for the future.

Communication on Facebook should not be the focus for promotion, as this social media network is increasingly losing users (Forbes 2022) and the target segments will not be so active here. On YouTube, the Communication and Events team should continue the current promotion, as it shows the real impact of Apps for Good, and Twitter should increase the number of posts (tweets). This can be done by posting the same content from Instagram, to keep engagement with the follower. Furthermore, constantly updating the website of CDI Portugal is crucial to spread awareness of the most recent events happening with the project.

Face-to-face events are currently happening in two ways: regional competitions, and the national competition, once a year. The last one usually happens in *Fundação Calouste Gulbenkian*, where teams pitch their App ideas and the winners receive prizes from sponsors and partners of the program (see Appendix 14 for more information on the last edition) (CDI Portugal 2022). This moment is truly relevant to share with the community how Apps for Good impacts students and teachers and helps them creating fruitful solutions. Also, it allows sponsors to realize where their investment is going and how it impacts the beneficiaries. In order to reach even more sponsors, one effective measure is to invite interesting companies and municipalities representatives to these events, to spread awareness of the project.

Another relevant promotion actors that could be better used are the DGE, the Ministry of Education and the CFAEs (Directorate-General for Education, Youth, Sport and Culture (EU) 2022). Although Apps for Good is a recognised program, these government institutions could improve the way they communicate it, in order to attract more public schools. Similar to the

importance of adapting teachers and students' schedules to implement Apps for Good, it is also important to boost its promotion closer to schools. To achieve this, it is also important to schedule meetings with representatives from these institutions.

Lastly, the current community of Apps for Good is extremely important, as the beneficiaries' engagement is very proponent to continue the positive outcomes and to attract external entities. To last this engagement, there are some recommendations that could be considered (developed in more detail in Appendix 15), such as continuing the regular contact with Ninja teachers, interacting with Fellows regularly, creating a one-page Newsletter for all beneficiaries and create an Ambassadors network with previous participants to boost promotion.

To conclude, the 4 Ps Analysis for public schools enhanced improvement points that should be taken into consideration when further penetrating the public education sector.

4.1.2 Value proposition for public schools

The value proposition describes the benefits the benefits that customers can expect from our service (Osterwalder, et al. 2014). This concept includes two interacting sides: the Customer Profile and the Value Map. On the first one, there is a description of the customer jobs, the gains, and the pains; on the second one, there is a list of the products and services we deliver, the gain creators and the pain relievers (Osterwalder, et al. 2014). Refer to Appendix 16 for the visual representation of the Customer Profile and Value Proposition Map for Apps for Good and public schools.

In this case, Apps for Good is the product delivered and the public schools are the customer. Public schools' main jobs are teaching and educating kids and young people, complying with the DGE and Ministry of Education regulations and promoting the values of inclusion,

knowledge, humanism, flexibility, and sustainability (Ministry of Education 2017). The gains of public schools are positive results of students (grades), development of soft and hard skills, satisfaction of students and parents, external representativity when students participate in competitions and outside events and engagement with the community and society. Lastly, the pains are lack of funding to support external activities, lack of time to implement new projects within the established schedule, ageing teachers who might become demotivated and lack of interest from students (disengagement due to compulsory education until 18 years old).

Moving to the Value Proposition Map, Apps for Good products and services are promoting social responsibility and sustainability among children (17 SDGs), developing soft and hard skills in students and teachers, mainly ICT, providing the experience of product development cycle and increasing technological and digital awareness in schools. The gain creators are providing certified and accredited training to teachers, allowing students to participate in regional and national competitions, establishing a real-world connection by putting students and them and the Experts in contact. Finally, the pain relievers are the fact that it is a free project, so there is no need to spend money on it, the innovative approach to education by using new technologies and developing interest in students and the didactic and dynamic classes, with materials provided, saving time and work for teachers.

Overall, Apps for Good constitutes a learning opportunity for both students and teachers, so it is essential that its quality reaches the people that can actually make changes and implement the project.

4.1.3 Benefits for public sponsors (municipalities)

Other public entities that are also beneficial for Apps for Good to partner with are the municipalities that would work as public sponsors. This is already happening with the

Municipality of Valongo, which donates 10.000€ per year to CDI, as the outcomes of this relationship are very positive (Baracho and Buisel 2022). For municipalities and city councils, the benefits of sponsoring Apps for Good are highly valued, such as solving local problems: most technological solutions (Apps) created are directly connected with real problems that their residential area is facing. So, it is favorable for municipalities to support this type of project, to develop the region itself. Furthermore, the municipality would increase connections with the community, by promoting digital innovation in their schools and involving students, teachers, and parents. Hosting the regional competitions is another advantage, as it would bring recognition and notoriety to the city.

For CDI, these synergies are highly beneficial, as one of the main constraints is the lack of funding for further investments. By sharing the real value of the project and enhancing mutual benefits, Apps for Good would be able to scale its footprint through more beneficiaries and increase its engagement with the communities. On Appendix 17 it is possible to find a list of possible municipalities to contact, as the starting point to these synergies boosting. The municipalities to partner with should show some kind of attitude towards a more technological future for its inhabitants. The contact should be made via email.

To do this and to sum up all the conclusions for public entities, the main recommendations are the following:

1. Deepen connections with DGE, Ministry of Education to attract more schools;
2. Increase brand awareness by boosting promotion and marketing strategies (social media and events);
3. Implement new community management strategies to fortify engagement (Ambassadors Network, Fellows, and Newsletter);

4. Increase the Work Platform's capacity to face new users;
5. Establish new contacts with municipalities that develop the ecosystem of Apps for Good.

4.2 Private Entities

The Marketing Mix and Value Proposition analyses for public entities will now be addressed to private entities (schools and companies as sponsors). To avoid repetition, some theoretical concepts and recommendations will not be mentioned again, as they are already stated in 4.1.

4.2.1 Marketing mix for private schools

Private schools are the ones where CDI finds most difficulty in attracting. Not only because they have to pay a fee, but also because they do not understand the real value proposition of the project until they experiment it.

A. Product

Although the initial approach to private schools is usually denied for the reasons before mentioned (monetary constraints), once Apps for Good is launched, the outcomes are very positive, similarly to public schools. Both students and teachers develop soft and hard skills by experiencing the benefits of the project and the technological development of the apps. In private schools, Apps for Good usually plays a role out of curriculum, as an extracurricular activity, where students only participate if they want too, so their motivation and interest levels are usually higher. Another key difference from public schools is that the Apps for Good team visits private schools three times per year (instead of two), providing additional support and proximity. Overall, private schools are highly valued as they provide revenues for CDI Portugal, helping the project to become more self-sustainable.

B. Price

The willingness to pay of private schools is indeed the main challenge CDI faces regarding revenues generation – they do not understand why they have to pay for something that public schools can have for free, neither the value itself (750€ in the first year of contract and 500€ in the following years) (Baracho and Buisel 2022). Currently, there is no concrete pricing strategy established, since these values were previously established by Apps for Good UK and function as symbolic values, with no direct relation to costs.

To overcome this challenge, the main recommendation is to create a pricing strategy based on value, subscription based with a discount upfront, as the willingness to pay from private schools is very low (Baracho and Buisel 2022). This means that a private school could start with a smaller fee of 450€, and this value would increase on the following year to 500€. By doing this, the price to pay is lower, so more attractive, and once the school realizes the impact and positive outcomes of Apps for Good, they will want to continue the project, so they will be willing to pay an extra 50€, which represents a symbolic increase of 11% on Year 2. At the same time, CDI would not lose revenues in the long run, as the price for the "following" years remains the same (500€).

By doing this, schools do not have to invest so much in the beginning, and they can create a pilot/ smaller group of students to launch the project and later understand the value it creates for them, and on the following years rise the number of participants. Then, it is essential to establish a yearly contract with the private school, as this recurring revenue is highly important to CDI's financial sustainability.

C. Place

Private schools represent less than 1% of Apps for Good current clients in the education ecosystem. Again, it is extremely hard for the Apps for Good team to attract more private schools due to the lack of willingness to pay derived from the misunderstood value proposition of the project. However, private schools are still a great match as customers for the project and can bring more financial sustainability to the project as whole, by leveraging revenues.

D. Promotion

To overcome the current monetary issues of attracting more private schools, it is essential than the principals/ directors of these schools understand the value proposition of Apps for Good. As stated for the public schools, word of mouth still plays a huge role on communicating the project – and that is valuable, as the beneficiaries enjoy participating and share their experiences with others.

However, other techniques should be implemented to gather new private schools. The approach should be personalised to each school, by covering specific elements: instead of promoting for a broad audience, such as social media in public schools, here there is the urge to personalise the pitch done to each private school, as it is much harder to attract them. Another important aspect is that Apps for Good should be seen as a differentiator and valuable asset in private schools, as students develop several skills and improve their grades – the qualities of the project need to be shared in order to make the principals realize the impact it can have. Making the connection between Apps for Good and the mission of the school is extremely important to highlight the benefits of implementing the project, when establishing the contact (refer to Appendix 18 for an example). Private schools want to satisfy parents and students, and to be

the first movers on innovative projects, so it is important to enhance common points between them and Apps for Good.

Experts can act as efficient ways of spreading the Apps for Good mission within their networks, through family and friends who have children in private schools and push the implementation in these schools through parents' associations. These entities have an impact on school decisions, as they are paying to have their children there and want the best learning methods for them. Moreover, inviting parents for the face-to-face events might be valuable if they want to join as Experts from their companies, as they will understand the real value and impact of Apps for Good.

4.2.2 Value proposition for private schools

Increasing the perception of value for private schools is one key enabler to boost the spread of Apps for Good within that universe. Access Appendix 19 for a visual representation of the VP Map.

First, for the Customer Profile, the jobs of private schools are delivering a prompt and distinguished education, ensuring that students have the best resources and developing soft and hard skills. The gains are the recognition, reputation, and notoriety (high positions in school rankings), satisfaction from students and parents by achieving educational goals (good results) and creating added differentiators from competitors. Last, the pains are the unwillingness to spend money on extra projects, the overbusyness of students with extracurricular activities that fulfill their curriculum and the difficulty in creating differentiators.

Moving to the Value Map of Apps for Good, the products and services are promoting social responsibility and sustainability among children (17 SDGs), develop crucial skills, mainly

related with ICT competences, experience the product development cycle and increasing technological and digital awareness in schools. The gain creators are the fact that is constitutes a differentiation factor in improving technological and digital awareness of students, for all the benefits inherent (present in very few private schools), boosting competitiveness by providing the opportunity to participate in regional and national competition, enhancing the reputation of the school and promoting a deeper connection with real-life professionals (Experts), an added value, especially for secondary students. Lastly, pain relievers are the break from traditional education, the innovative approach to education by using new technologies, developing interest in students and the didactic and dynamic classes providing a differentiation factor among other schools.

To sum up, Apps for Good constitutes a great learning opportunity for students in private schools, as an innovative and differentiator approach to education, by putting together technology and sustainability towards a more digital inclusive world.

4.2.3 Benefits for private sponsors (companies)

Similarly to municipalities, companies can benefit from joining Apps for Good as private sponsors, by contributing with a yearly donation and improving their social responsibility reputation. This represents an added value to the brand, as supporter of such an impactful project. The workers from these companies could become Experts, and others might have kids in the schools of the region, increasing the community sense ecosystem of Apps for Good. Moreover, the name of the company could become the name of one team/ school directly sponsored by them (for example, “team Microsoft”). All strategies would increase brand awareness in the young communities, which is something generally hard to achieve. Companies

would also benefit from hosting, for example, the regional events in their headquarters, boosting visibility and reputation.

For Apps for Good, the advantages are like the ones from municipalities, mainly related to increasing financial sustainability, by earning more donations and expanding the network of Experts. To find new joiners, the main criteria should be the dimension of the company and the concern about social responsibility. There is a list of suggested companies to partner with in Appendix 20. The contact should be made via e-mail or through the contact person stated.

Summing up all the conclusions for private entities, the main recommendations are:

1. Establish relationships with schools' principals to promote Apps for Good as a differentiator factor;
2. Redefine the pricing strategy, with a discount upfront to better attract private schools;
3. Increase brand awareness by boosting promotion and marketing strategies;
4. Boost the Apps for Good ecosystem, including the parents (parents' associations) and Experts;
5. Connect and create partnerships with private companies to sponsor Apps for Good.

4.3 Final Recommendations and Next Steps

Currently, public schools are Apps for Good's main client and the ones where it has a greater impact, due to the attractive benefits that the project implies for free. Despite this, these schools do not facilitate its financial sustainability, as there are no revenues from there. On the contrary, private schools contribute monetarily to the project, by paying a recurring yearly fee, as well as sponsors by donating. All beneficiaries are important in the Apps for Good ecosystem, mainly due to their individual roles in contributing to the project quality. However, within public and

private schools, the focus should be private schools, as they fund the project, although their impact is not as big as in public schools. This can be done by boosting communication with private schools and enhancing the differentiation factor that the project offers.

The following priority should be the sponsors, main the private ones – companies, as they have the resources and methods to help Apps for Good grow by subsiding the project and increasing their social responsibility awareness. After that, municipalities should also be a target, as they will benefit from the resolution of local problems and increase their engagement with the community, while they offer monetary value added. Public schools will certainly remain one of the main priorities of the Apps for Good team, as they need to continue the contact with all schools, teachers, and students to ensure the results of the project are the expected. In terms of where Apps for Good should go, it is suggested that the new target locations for private schools are close to the CDI headquarters (to reduce transportation costs) and have a high number of schools in the region (to create conglomerate costs). By doing this, the differentiative approach of Apps for Good will be highlighted throughout the region and the word of mouth will ease brand awareness within different schools.

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**
How can Apps for Good efficiently reach the private school's sector? **5.1 Private & International Schools** 5.1.1. What are the challenges felt by private schools with Apps for Good? 5.1.2. International Schools Characteristics 5.1.3. What is the impact of Apps for Good in International Schools? 5.1.4. Strategy to go to International Schools	Internal CDI Portugal Documents Secondary Research Go to Market Analysis Impact Infographic
How can Apps for Good benefit from wider sponsor's cluster & number? **5.2 Private Sponsors** 5.2.1. The importance of the private sector for the development goals and community development 5.2.2. Strategy to have sponsors per region – DELTA Cafés 5.2.3. Impact on the company and its employees	Internal CDI Portugal Documents Secondary Research Go to Market Analysis
5.3 Final conclusions and next steps	

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 Apps for Good 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 Apps for Good own revenue by €3,400. Total new revenues earned from our recommendations will cover 63% of their total costs, an increase of 6% from Apps for Good's current situation.

CHAPTER KEY QUESTION **What impacts will our suggested market penetration strategies have on the financial sustainability of Apps for Good?**	
SECTION AND RESEARCH QUESTIONS	METHODOLOGY
6.1 – Private Schools – International Schools 6.1.1. What is 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?	*Scenario Analysis* *Sensitivity analysis* *Internal documents*
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 Apps for Good reinvesting newly acquired funds?	*Scenario Analysis* *Sensitivity analysis* *Internal documents*
6.3 – End Game 6.3.1. How do the defined go to market strategies impact the organisation's long-term goals for scaling Apps for Good?	*Implementation Roadmap*

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 Apps for Good. If on one hand, there is a high necessity of investing in marketing and recruitment at 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 Apps for Good 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?

- Apps for Good 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 Apps for Good 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.
- Apps for Good 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. The 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 Apps for Good 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 Apps for Good 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 Apps for Good 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 Apps for Good 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 Apps for Good's work is the use of technology,

which is usually advanced, and the curriculum, which is mostly based on the English or American model.

- Apps for Good 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 program to students.
- To differentiate schools, with or without Apps for Good, i.e., with or without students developing real solutions, aiming at the SDGs and through digitalization, the creation of a label for the school, something like "Digital Social School", should be analyzed.

5.2. How can Apps for Good 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 Apps for Good, 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 the 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 Apps for Good 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 increase 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 impacts the key stakeholders that connect the program with the schools.
- The major cost saving aspect of the growth of Apps for Good'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 Apps for Good, 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 Apps for Good's content creation is high, therefore it is advisable for Apps for Good 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 tiers, analysis shows that there is capacity for the sponsor to cover two schools at every level.

6.2.3 How should Apps for Good 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 a bridge to the public school educational system.

6.3.1. How do the defined go to market strategies impact the organization's long-term goals for scaling Apps for Good?

- Sustainability in the long-term is only achieved through government adoption (with the current cost structures and mission). The investments made by governments have stable durations as they are typically investments made with the intension of using the program for a long time. Government adoption is attractive for Apps for Good'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

Apps for Good – Apps for Good

AMA – Agency for the Administrative Modernization

APDC – Digital Business Community

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

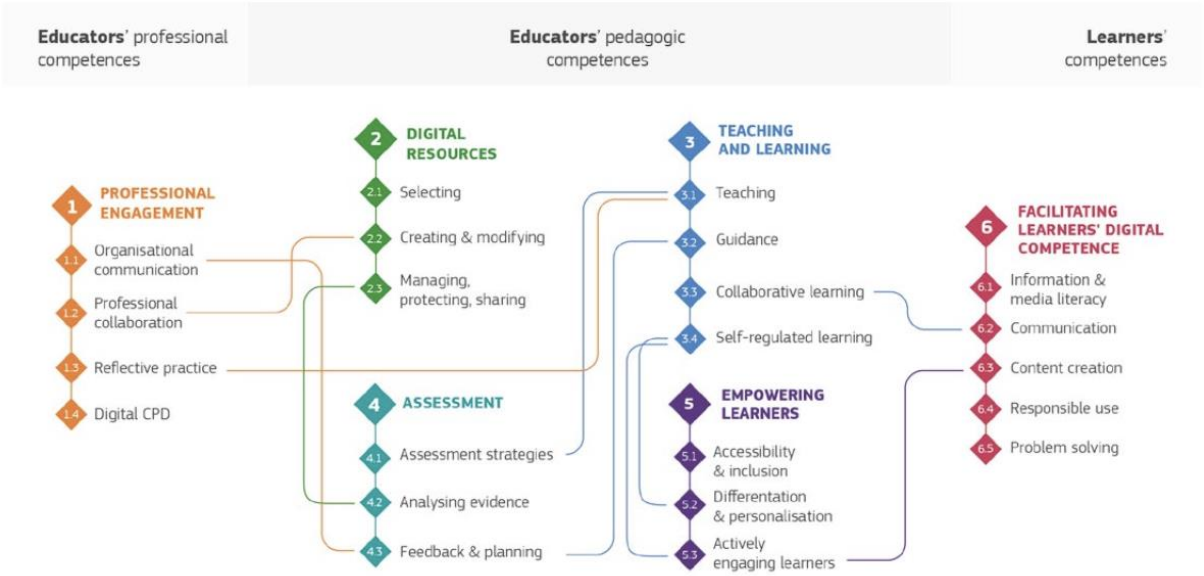
TFP – Teach for Portugal

UN – United Nations

VP – Value Proposition

11. APPENDIX

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 Apps for Good after one year/ edition?
6. How many schools are currently using Apps for Good?
7. Would you consider having volunteers working with CDI in Apps for Good?
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 Apps for Good 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 Apps for Good 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 Apps for Good?
5. How long have you participated with Apps for Good?
6. Has it impacted your confidence with technology?
7. Does Apps for Good fill a gap in the current educational program?
8. What is the most impactful aspect of Apps for Good?
9. What is the most memorable App students have produced?
10. What is the greatest selling point for Apps for Good?
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?

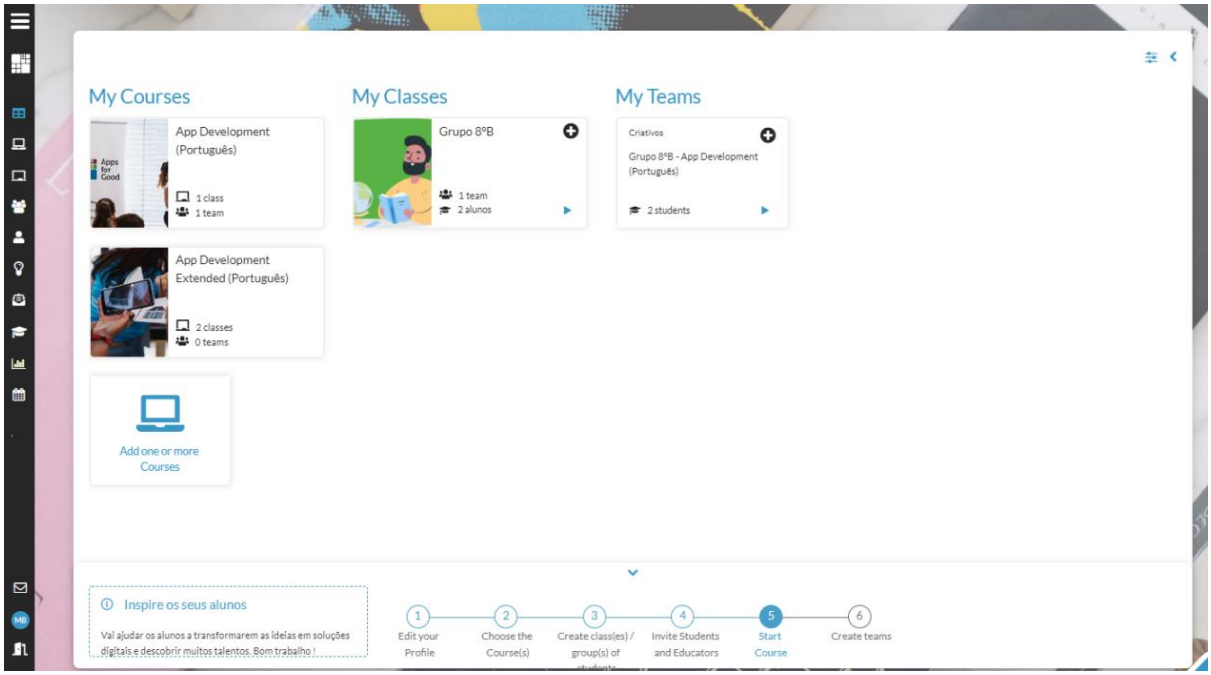
Observation: additional questions were made throughout the flow of the interview.

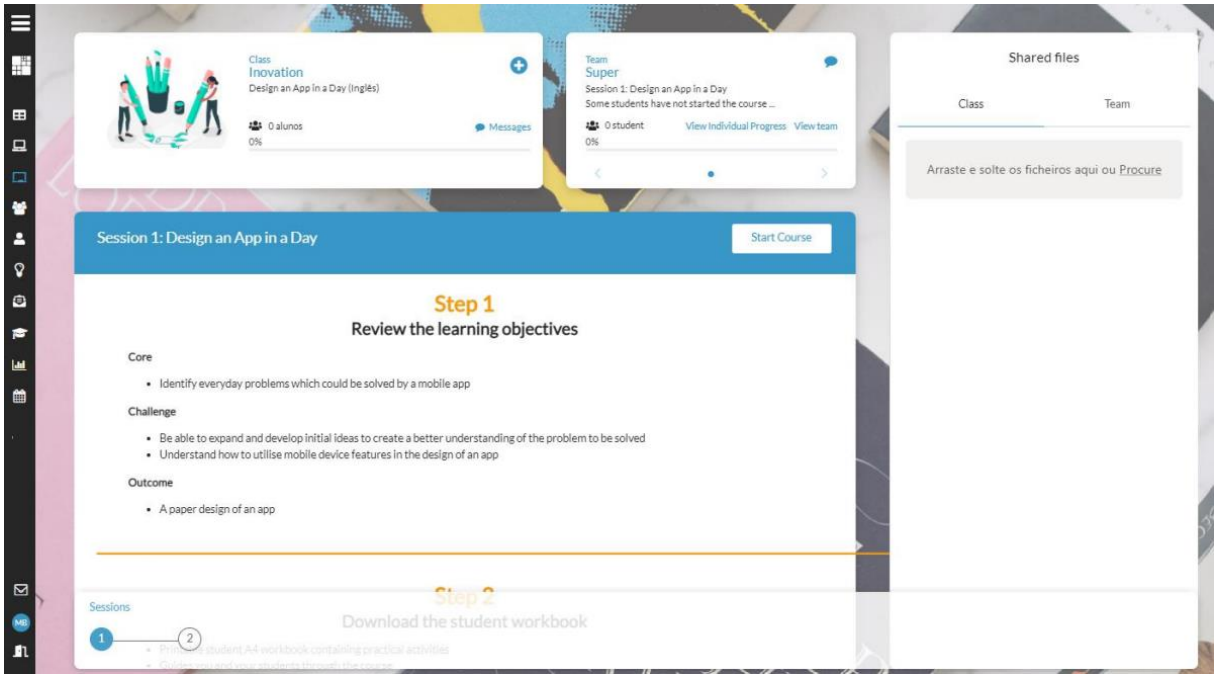
Appendix 6. Overall Apps for Good Impact Considerations (CDI Portugal 2021/2022)

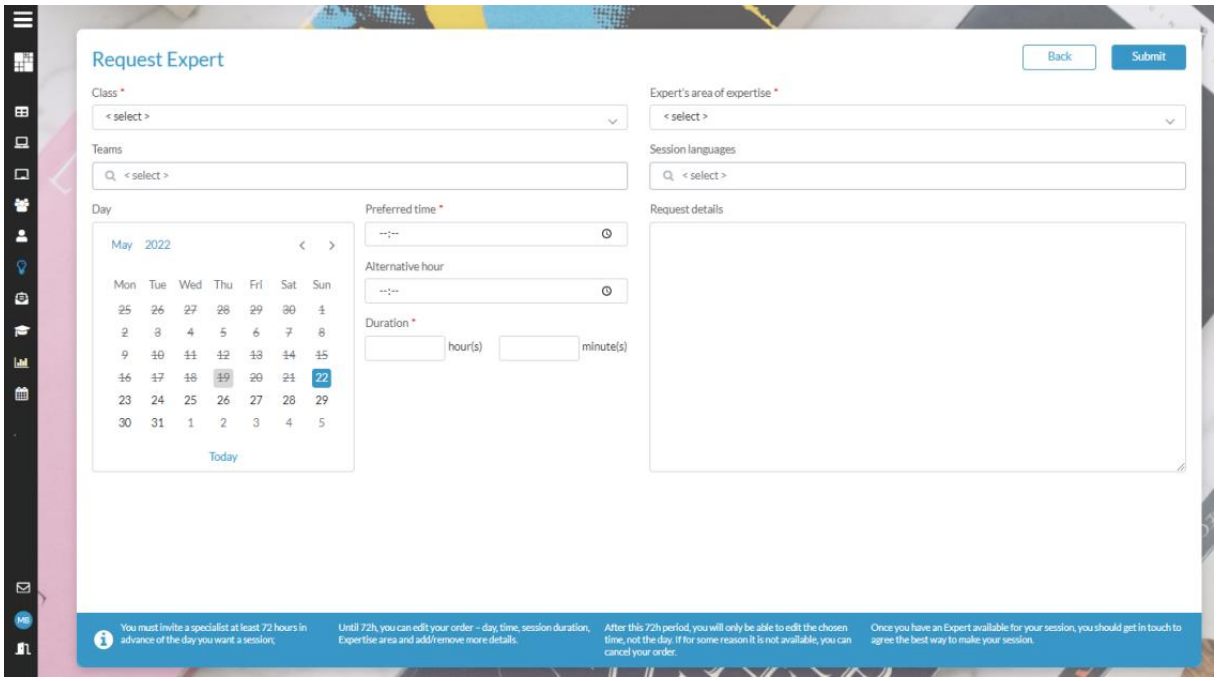
IMPACT ON STUDENTS' SOFT SKILLS	IMPACT ON STUDENT'S MOTIVATION AND CONFIDENCE	IMPACT ON TEACHERS' SKILLS	GENERAL IMPACT
85% Teamwork skills	96% Increased motivation to learn	97% increased their job satisfaction	Students from STEM areas who participate in Apps for Good have, in average, 7% higher grades 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.			

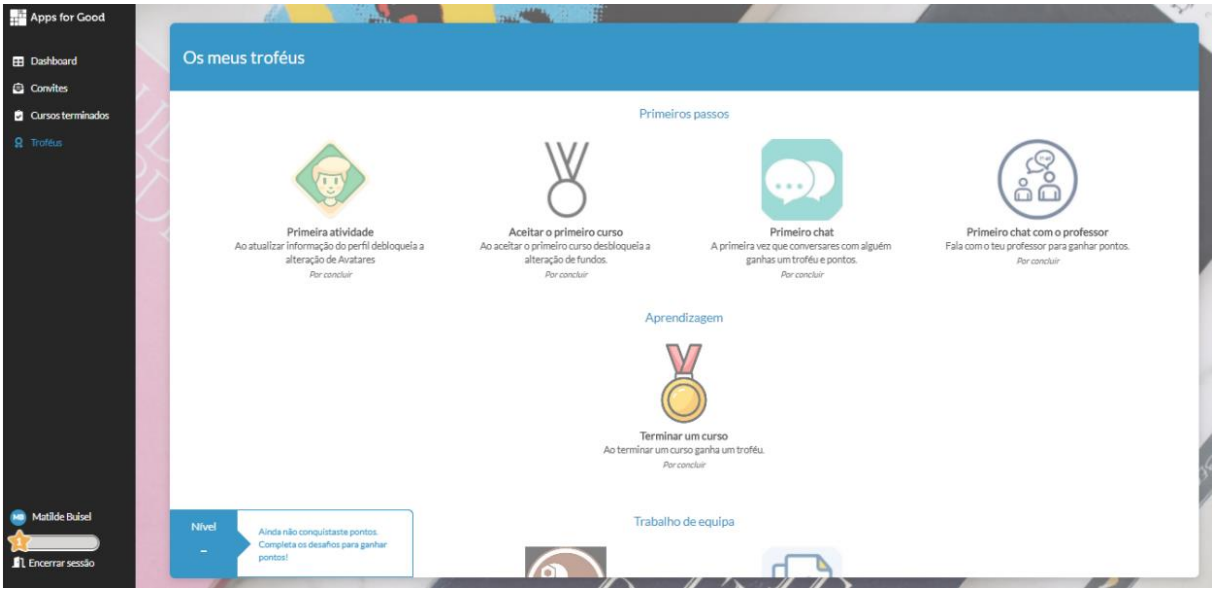
Appendix 7. 17 Sustainable Development Goals (United Nations 2015)

Appendix 8. Visual aspect of the Work Platform (CDI Portugal 2022)






Request Expert
Back
Submit
Class *
< select >
Expert's area of expertise *
< select >
Teams
< select >
Session languages
< select >
Day
May 2022
Mon Tue Wed Thu Fri Sat Sun
Today
Preferred time *
--:--
Alternative hour
--:--
Duration *
hour(s)
minute(s)
Request details
You must invite a specialist at least 72 hours in advance of the day you want a session;
Until 72h, you can edit your order - day, time, session duration, Expertise area and add/remove more details.
After this 72h period, you will only be able to edit the chosen time, not the day. If for some reason it is not available, you can cancel your order.
Once you have an Expert available for your session, you should get in touch to agree the best way to make your session.


Apps for Good
Dashboard
Convites
Cursos terminados
Troféus
Matilde Buisel
Encerrar sessão
Os meus troféus
Primeiros passos
Primeira atividade
Ao atualizar informação do perfil desbloqueia a alteração de Avatares
Por concluir
Aceitar o primeiro curso
Ao aceitar o primeiro curso desbloqueia a alteração de fundos.
Por concluir
Primeiro chat
A primeira vez que conversares com alguém ganhas um troféu e pontos.
Por concluir
Primeiro chat com o professor
Fala com o teu professor para ganhar pontos.
Por concluir
Aprendizagem
Terminar um curso
Ao terminar um curso ganha um troféu.
Por concluir
Nível
-
Ainda não conquistaste pontos. Completa os desafios para ganhar pontos!
Trabalho de equipa

Appendix 9. List of courses available on the Work Platform (CDI Portugal 2022)

Name of the Course	Language	Duration	Description
App Development	Portuguese and English	10 to 12 hours	Students explore the app development process, from idea to prototype, building a functional version of their app, using block-based programming
App Development Extended	Portuguese and English	20 to 30 hours	Students explore the app development process, plus extra topics, such as business model and user experience, using block-based programming or more advanced programming
App in a Day	Portuguese and English	5 hours	Students are introduced to app design and create a non-technological prototype. This is a short version of the "App Development" course and can be developed in one day only
Machine Learning	English	10 to 12 hours	Students learn about machine learning, including ethical issues and their benefits and build a ML algorithm to solve a social problem
Internet of Things	English	10 to 12 hours	Students will generate ideas and develop functional prototypes, using internet connect devices, to solve real problems
Climate Action and Wellbeing	English	12 hours	Students explore causes and effects of climate change and build a prototype for their idea

Appendix 10. Current social media promotion of Apps for Good (CDI Portugal 2022)

LinkedIn:

Instagram:

cdiportugal • Seguir

cdiportugal 🚗 Estão a terminar as primeiras visitas às escolas que participam pela primeira vez no Apps for Good! De Norte a Sul do país ouvimos professores e alunos e já sentimos ideias a fervilhar para esta 9ª Edição!

🗣️ "Gostava que eles aprendessem a trabalhar em equipa, percebam que a escola não é aborrecida, não aprendemos só em frente ao professor a debitar matéria... quero vê-los a tentar saber mais, a tentar pesquisar e aprofundar o que necessitam de fazer para encontrarem e desenvolverem uma solução"

Próxima paragem ✈️ Açores e Madeira em Janeiro 2023!

#VisitasAfG2022 #AppsforGoodPortugal #CDIPortugal

7 h

13 gostos

HÁ 7 HORAS

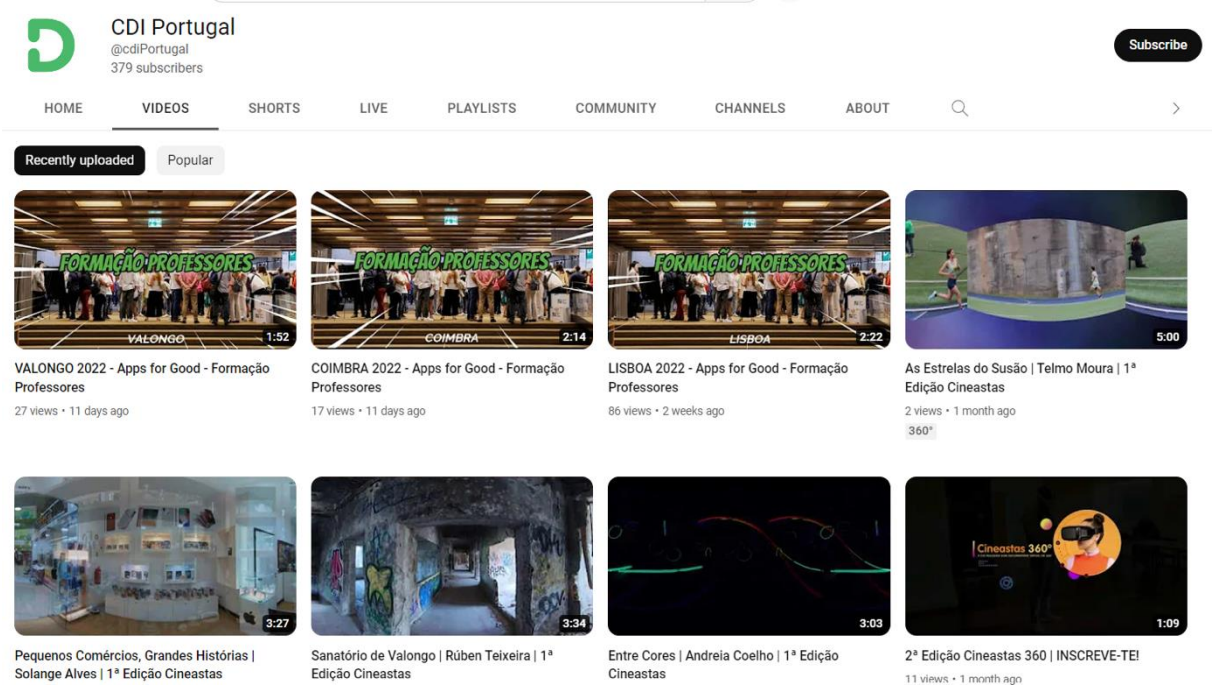
Facebook:

CDI Portugal
7 h ·

🚗 Estão a terminar as primeiras visitas às escolas que participam pela primeira vez no Apps for Good! De Norte a Sul do país ouvimos professores e alunos e já sentimos ideias a fervilhar para esta 9ª Edição!

🗣️ "Gostava que eles aprendessem a trabalhar em equipa, percebam que a escola não é aborrecida, não aprendemos só em frente ao professor a debitar matéria... quero vê-los a tentar saber mais, a tentar pesquisar e aprofundar o que necessitam de fazer para encontrarem e desen... Ver mais

YouTube:


CDI Portugal
@cdiPortugal
379 subscribers
Subscribe
HOME
VIDEOS
SHORTS
LIVE
PLAYLISTS
COMMUNITY
CHANNELS
ABOUT
Recently uploaded
Popular
FORMAÇÃO PROFESSORES
VALONGO
1:52
VALONGO 2022 - Apps for Good - Formação Professores
27 views • 11 days ago
FORMAÇÃO PROFESSORES
COIMBRA
2:14
COIMBRA 2022 - Apps for Good - Formação Professores
17 views • 11 days ago
FORMAÇÃO PROFESSORES
LISBOA
2:22
LISBOA 2022 - Apps for Good - Formação Professores
86 views • 2 weeks ago
5:00
As Estrelas do Susão | Telmo Moura | 1ª Edição Cineastas
2 views • 1 month ago
360°
3:27
Pequenos Comércios, Grandes Histórias | Solange Alves | 1ª Edição Cineastas
3:34
Sanatório de Valongo | Rúben Teixeira | 1ª Edição Cineastas
3:03
Entre Cores | Andreia Coelho | 1ª Edição Cineastas
Cineastas 360°
1:09
2ª Edição Cineastas 360 | INSCREVE-TE!
11 views • 1 month ago

Appendix 11. Social media networks in numbers of followers, likes and like-to-follower ratio (CDI Portugal 2022)

	Number of followers	Number of likes from 10 most recent posts	Like-to-follower ratio from 10 most recent posts (number of likes/number of followers)
Facebook	4.315	7	0,2%
Instagram	380	14	20%
LinkedIn	1.243	10	0,8%
YouTube	379	33 *	8,7% **

* Views instead of likes and videos instead of posts

** View-per-follower instead of like-per-follower

Observation: these values refer to December 1st of 2022.

Appendix 12. Proposed change in CDI Portugal's *Instagram biography*

Current:

Proposal:

Appendix 13. Recommendations for *Instagram*

Name/ type	Description	Regularity
Post *Learn with…*	Photos/videos of a school visit, with interviews to teachers and students sharing their experience	Every Monday
Post *Get to know…*	Interview (Q&A) with an alumni/alumna student from the project, showing where he/she is now working and how the project impacted his/her life	Every Wednesday
Reel *Fun Fact*	30 seconds video explaining one SDG or an important concept on the technological/ digital world	Every Friday
Live Video	Informal conversation between one Apps for Good member and one student for him/her to share his/her experience with the project so far	Every Saturday
Instastories	Enquiries to the current students/teachers to receive feedback (examples: "Are you enjoying the Apps for Good project?", "What did you learn so far?", "How do think your App idea will impact the community?")	Every Sunday
Post *Status Quo*	Compilation of current results (example: students and teachers onboard, number of Apps, number of courses taken, number of Experts sessions)	Every two months

Appendix 14. National Competition – Final Event 8th Edition (CDI Portugal 2022)

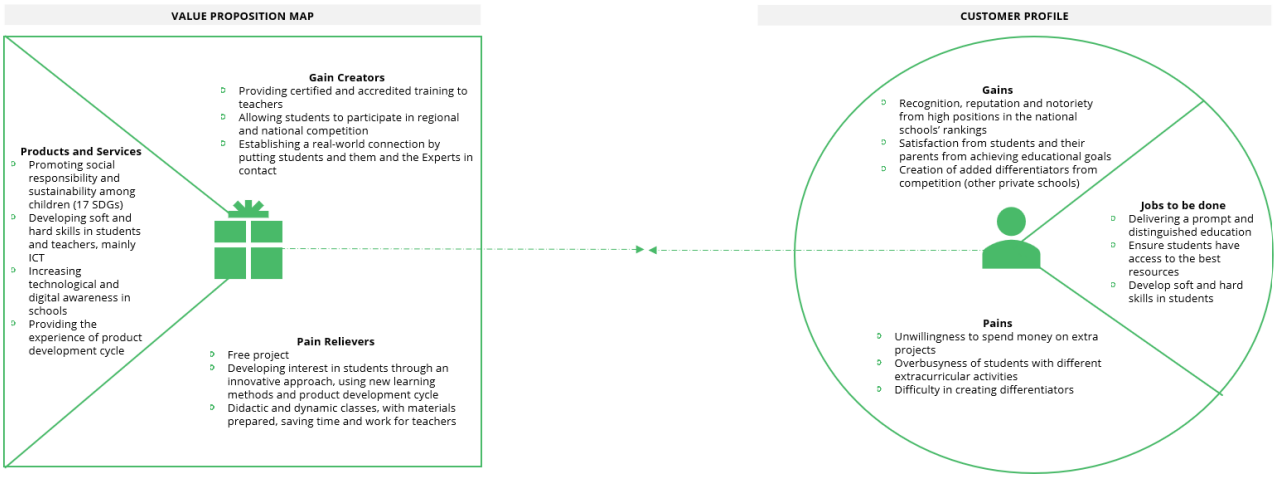
Full video available on YouTube.

People/ entities participating	
Name	**Entity**
Isabel Alçada	Civil House of the President of the Republic of Portugal
Valérie Djioze-Gallet	UNESCO
Maria João Horta	Directorate-General for Education (*Direção-Geral da Educação*)
Ana Casaca	Galp
Sónia Branco	
Manuel Andrade	
Eduardo Antunes	Microsoft
Inês Esteves	.PT
Luísa Diogo	Synopsys
António Leite	Secretary of State for Education
Paula Borges	SRS Advogados
Ana Margarida Belo	BNP Paribas

Appendix 15. Recommendations on Community engagement

Ninjas	Teachers should continue to be one of the central aspects of the project, as the Apps for Good team needs to keep on establishing recurrent contacts with them, through meetings, school visits and social media, if suitable.
Fellows	One of the main challenges regarding communication for the Apps for Good team is to contact with the current students, so they should try to establish regular interactions with them on *Instagram*, by *tagging* them, posting *Instastories* with the achievements or courses completion, and competition winners.
Newsletter	The Communication and Events department already sends Newsletters to teachers, schools' principals, and sponsors to engage with them, but sometimes it is hard to spread the message, as they do not have time to properly read their emails. To solve this, a one-page catchy email with the highlights of the week, which could be sent every Monday to all beneficiaries. This could be a solution to save time for both Apps for Good team and the recipients.
Ambassadors Network	Up to this moment, more than 23.500 students have participated in Apps for Good in Portugal (CDI Portugal 2022). Creating a database with personal information from these students (name, age, company, mobile phone) and later launching an Ambassadors Network to give them the opportunity to be ambassadors in their residential areas could be a way to ensure face to face visits to schools happen, with the plus of having *Alumni* of the project itself, that can give the testimony in the first person. Furthermore, they could promote the project in possible future school joiners and potential sponsors (companies). This would help to show the real impact of Apps for Good and would also release time for the core Apps for Good team. The need to update this database yearly is crucial, as this information easily lost throughout the years.

Appendix 16. Value Proposition Map (Apps for Good and public schools)



Appendix 17. List of municipalities to contact

Name	Contact	Reasoning
Braga	Email	The Youth plays a relevant role in the city, with a variety of activities created based on five pillars: citizenship, creativity, international, wellness and future (Câmara Municipal de Braga 2022)
Oeiras	Email	The municipality has created several projects for the Youth, such as "Experimenta-te 2020" (translated: "Experiment yourself 2022"), "Jovens em Movimento" (translated: "Youth in Movement") that provide free time activities and learning opportunities for the youngsters (Oerias Valley 2022).
Câmara Municipal de Viseu	Email	Created *Viseu Educa* in 2014, with an investment of 25 million euros. This program has a technological component, where students develop technological solutions (Câmara Municipal de Viseu 2022)
Câmara Municipal de Águeda	Email	Considered a smart city, with a city dashboard and an Operations Centre that controls all incidents (Câmara Municipal de Águeda 2022)
Câmara Municipal de Torres Vedras	Andreia Correira | Youth Department	One of the schools has a Robotic club, where students created a robot that reproduces sign language (Governo da República Portuguesa 2022)

Observation: "Câmara Municipal" means Municipality/ City Council.

Appendix 18. Example of a contact with a private school

To: geral@colegiomoderno.pt <geral@colegiomoderno.pt>; Cc & Bcc

Get2Know Apps for Good | Colégio Moderno

Hello,

We hope this email finds you well!

I am Matilde, the program manager of **Apps for Good Portugal**. In 10 years of existence, the project already helped 23.500 students and 1.500 teachers building technological solutions though an innovative product development cycle, while developing soft and hard skills, during an academic year.

We are aware that one of your pillars is the adoption of information technologies for learning purposes and we want to help you achieving that goal. **How?** By applying our digital courses and working together with your students.

Would you be interested on working with us? Feel free to reach out and schedule a meeting!

Hope to hear from you soon,

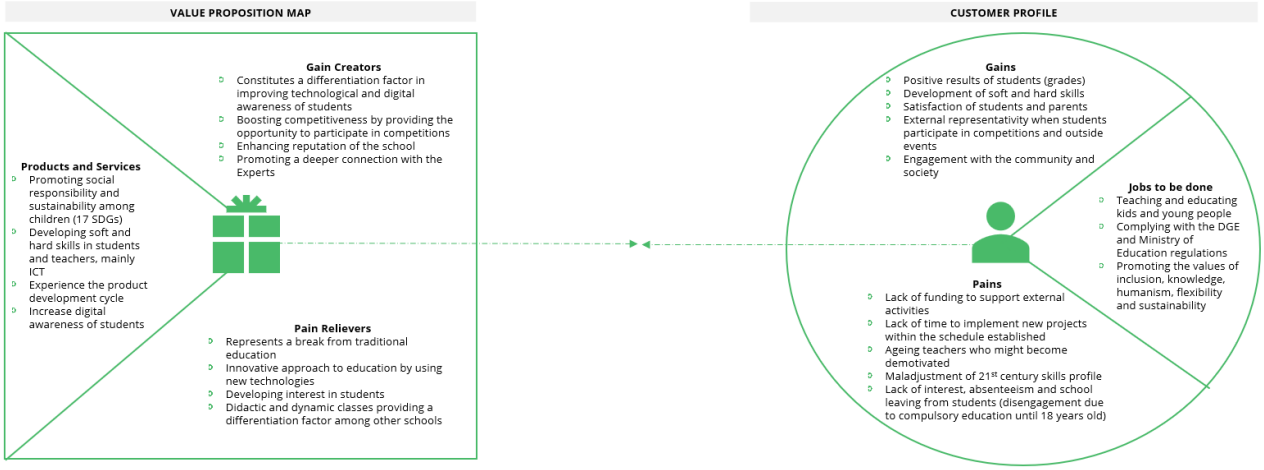
Thanks in advance,

Matilde Buisel | **Project Manaeger Apps for Good**

+351 925 453 947 | matilde.buisel@cdi.org.pt

Site cdi.org.pt Facebook facebook.com/cdiportugal Twitter @AppsforGood_PT Linkedin www.linkedin.com/company/cdi-portugal

Appendix 19. Value Proposition Map (Apps for Good and private schools)



Appendix 20. Contact person in companies

Company	Name	Job Position
Altice	Paula Silva	Protocols and Business Partnerships Manager
Amorim Corticeira	Email	
Auchan	Ana Celina Lopes	New Concepts and Partnerships Manager
BP	Contact form	
Caixa Geral de Depósitos	Cátia Santos	Partnerships Manager
Capgemini	Ana Gonçalves Pereira	Head of Alliances & Partnerships
Deloitte	Contact form	
Delta	Contact form	
EDP/ EDP Comercial	Daniel Bourdain	B2B Transformation Project Manager
El Corte Inglés	Email	
Endesa	Carolina Cardoso	Marketing & Communication Specialist – B2B
Fidelidade	Marcelo S.	Head of Partnerships & Ecosystems
Jerónimo Martins	Vera Amaral da Silva	Partnerships Manager
LG Electronics Portugal	João Quaresma	Business Development B2B Manager
Nestlé Nespresso SA	André Santos	B2B Business Analyst
NOS/ NOS SGPS	Tiago Madruga	Strategic Partnerships Manager
Sonae	Contact form	
Uber Eats	Rita Vasconcelos	Sales Development & Partnerships Manager
Vodafone	Tiago Majó	Indirect Sales Lead – B2B
Worten	Pedro Baptista	Head of Own Brands and Partnerships