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Canada, a Child's Play: Internationalization of Science4you to the Canadian Market

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ABSTRACT

Science4you, a Portuguese developer, producer and seller of scientific and educational toys, leveraged the worldwide growth of this category to successfully expand its operations abroad. Following a recent entry into the United States market, the purpose of this report is to help the company define the next step in its international expansion. A customized scoring model, based on a set of relevant macro and micro-criteria was developed for Anglo-Saxon and Asian countries, yielding Canada as the market with the highest potential. The recommended entry mode is direct exporting via an independent distributor, being complemented with a financial and risk analysis.

Keywords: Science4you; Toys; Internationalization; Canada.

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INTRODUCTION

Science4you was amongst the first companies in Portugal to understand the potential of scientific and educational toys and promptly increased its sales volume in the home-country. Leveraging the worldwide growth of this category of toys and its managers' international outlook, it rapidly began exporting to several countries. However, despite having successfully expanded abroad, the company's strategic objectives in terms of sales volume require it to further develop this expansion, due to the limitations of the Portuguese market. Given this, and the fact that the company has spare capacity and availability of capital, Science4you intends to further grow its international sales by increasing both the number of countries where it is present and the revenues per country. As a result, the purpose of this report is to define the next country in Science4you's internationalization path. In order to so so, first, an internal and external analysis of the company was conducted, summarized in a SWOT-TOWS matrix. Given the worldwide growth in scientific and educational toys and the company's desire to pursuit its international expansion, two regions arose: Anglo-Saxon or Asian markets. In order to prioritize these markets, a customized scoring model was developed to assess the market with the most potential. Afterwards, a detailed analysis of the selected market was performed, allowing for the definition of the entry mode. Given this, a financial and a risk analysis were performed to assess the viability of the choice.

METHODOLOGY

Regarding the **methodology**, both primary and secondary research were conducted. Concerning the **primary research**, a one-on-one interview was conducted with a member from the Sales team of Science4you and, afterwards, several e-mails were exchanged with company. Concerning the **secondary research**, publicly available information such as annual reports was used, alongside several books, articles, papers and news; this was complemented with research on databases such as Euromonitor International, World Bank, IMF, among others.

LITERATURE REVIEW

Similar to Physics, which started by studying the behavior of larger objects under the influence of forces to then focus on the smaller-scaled atoms and beyond, so has International Business (IB) evolved from the study of the reasons why countries trade to the study of the profile of the entrepreneur managing a small international company.

In fact, changes in the unit of analysis led to changes in the literature about **IB**, *"the study of transactions taking place across national borders for the purpose of satisfying the needs of individuals and organizations"* (Rugman and Collinson, 2009). Despite the extent of the literature on the topic, it is possible to identify roughly three phases. The first phase, ranging from the Mercantilist theories to the more recent theories of Dunning or Porter, focused mainly on the economic reasons why nations and larger firms trade. In a second phase, the focus shifted to small and medium-sized companies (SMEs) and the **stage approaches** were born, aiming to explain the internationalization as a set of incremental stages (Rasmussen and Madsen, 2002).

Within the stage approaches, the most relevant theories include the Uppsala and the Innovation model. The **Uppsala model** explains the internationalization process of the firm as a series of incremental decisions, based on the dynamics between market knowledge and commitment, having four generic stages: no regular export activity, export *via* independent representatives, establishment of a sales subsidiary and establishment of a production subsidiary (Johanson and Wiedersheim-Paul, 1975). The **Innovation Model** (Cavusgil, 1980) adopts a similar perspective, considering each stage of the process as an innovation for the firm. The Uppsala Model has been revised to include the importance of a firm's **network**, covering the relations with other firms and agents in its international expansion (Johanson and Mattsson, 1988).

In a third phase, a McKinsey and Company report identified a group of firms which started exporting, on average, two years after their foundation with exports close to or even surpassing domestic sales. These SMEs succeeded in world markets without an established domestic base,

giving rise to the **born-global** concept (Rennie, 1993) and contesting the conventional wisdom that firms pursue internationalization opportunities cautiously in incremental steps (Cavusgil, 1994). Some authors develop this idea, emphasizing the role of the entrepreneurs managing these firms and their strong international outlook, the so-called **international entrepreneur** (Oviatt and McDougall, 2005). The born-global theory is the one that best applies to Science4you, given the promptness of its expansion, the dynamism of the management team and the fact that the company was created to fulfill a global niche from day one.

The reasons for a company to undergo such ventures are several: the desire to increase its sales volume, the pursuit of domestic customers that are going international, the intention to counter foreign firms entering the domestic market, the attempt to match the international entry of a domestic rival, among others (Root, 1987). In the case of Science4you, the main reason for its expansion was the relative small size of the domestic market, which limited its sales potential.

So far, literature on the internationalization process and motivations has been summarized; however, the focus of this report will be on country selection and the respective entry mode. For Cavusgil (1985), **country selection** is a process with three stages: (i) preliminary country screening (ii) industry market potential assessment and (iii) company sales potential analysis. Regarding the preliminary screening, Cavusgil (2004) suggests two approaches: (i) country clustering, through which countries are grouped according to commercial, economic, political and cultural similarities and (ii) country ranking, through which countries are ranked according to meaningful indicators of market potential (market size, growth, intensity, among others). Concerning **entry modes**, Root (1987) considered three main forms: export, contractual and investment. In export entry modes, the product is manufactured outside the target country and then transferred to it. Exporting may be indirect or direct depending on whether the firm uses middlemen located in the home country or not, respectively. Regarding contractual modes, these involve the transfer of human or technological skills from the firm to a local entity

(licensing agreements, franchising, amongst others). They differ from the investment mode since no equity is involved. In this last mode, entry can be done alone (sole venture) or with a local company (joint venture) through the establishment or acquisition of a production unit.

INTERNAL ANALYSIS

1. Company Overview

Science4you is a 100% Portuguese company that develops, manufactures and sells scientific and educational toys. Recently, it also added a range of services to its portfolio, such as birthday parties, summer camps and training courses for animators wishing to participate in either one of the aforementioned activities. In 2014, it was the second best-selling toy brand in Portugal[i].

The company started its operations in 2008, being composed only by its founder and nowadays employs 73 people full-time **[Appendices 1 and 2]**. It currently sells about 350 different products, being divided in 17 main categories **[Appendices 3 and 4]**. Even though there is great diversity in the type of toys sold, these are all related with **science**. In Portugal, these products are given FCUL's (Faculdade de Ciências da Universidade de Lisboa) quality stamp, which reinforces the credibility of the portfolio.

The toy industry is characterized by being highly innovative and Science4you is no exception: in 2014 alone it developed 120 new products and, in 2015, it started experimenting with products that connect to smartphones. **Product development** comprises 3 main stages: (i) study of the main trends and development of a prototype, which is done by the R&D team (composed of 40 people with different backgrounds: designers, biologists, chemists, programmers, animators, psychologists); (ii) estimation of a budget for the product and (iii) if viable, initiating production. A detailed description of the process can be found in **Appendix 5**.

Regarding **suppliers**, since the company produces the majority of its products in Portugal, most of its suppliers are Portuguese companies with national operations. According to the CEO[i], this is one of the company's main advantages since it allows it to reduce the manufacturing time to

just 3 weeks, which is considerably less than 6 months – the average time for its European competitors producing in China. The main inputs the company purchases are plastic and bicarbonates and it outsources the cardboard boxes. Finally, in terms of **distribution channels**, Science4you is present in mass and small retail, corporate, proprietary stores and online.

2. Financial Information

The company has been having a steady growth in sales, close to 100% annually. In 2014, its sales amounted to about 5.3 million Euros, with a Gross Margin of 64%, an EBITDA of 0.7 million Euros and a Net Income of 0.3 million Euros. In 2015, it is expected to gross over 12 million Euros **[Appendices 6 and 7]**. The majority of the company's revenues are derived from the toy sales, with the other services accounting only for 5% of total revenues in 2014. Furthermore, about 60% of the sales are concentrated in the fourth quarter[ii]. In Portugal, mass retail accounts for the majority of revenues, followed by proprietary stores, corporate and small retail **[Appendix 8]**. Online stores account for a low percentage.

In 2014, S4Y sold about 0,8 million toys[i] and, in 2015, it is estimating to sell over 1 million, meaning it will operate **near full-capacity**. Given this, the company invested 3 million Euros in a new factory that was inaugurated at the end of 2015. On average, scientific and educational toys are more expensive than the other categories of toys, however, given the goal of "*democratizing the access to educational toys"i*, Science4you's toys are **relatively less expensive when compared with the direct competition.** Furthermore, the company has just finished a successful new round of funding through Venture Capital, bringing in 7 million Euros. This affected its shareholder structure **[Appendix 9]** even though the company remains private. Finally, the company's balance sheet can be found in **Appendix 10**.

3. International Operations

The company's internationalization process, motivated by the limitations of the Portuguese market, has been swift and successful, having established its presence in 17 other countries

besides Portugal in just 7 years. It started selling its first products in 2008 and, one year after, it was already selling to Spain. By the end of 2010, it had sold products in South America and Africa, having entered North America in 2014 **[Appendix 11]**. Science4you only sells its products (not services) abroad, with the Science line being the most successful. Currently, the company's **international presence** is as follows: (i) it has **sales subsidiaries** in Spain and in the United Kingdom (UK); (ii) it has **regular exports** (through agents/distributors) to Brazil, Egypt, Finland, France, Greece, Italy, Lebanon, Lithuania, Poland, Sweden and United States of America (US); and (iii) it had **sporadic sales** to Angola, Colombia, Cyprus and Venezuela. However, before establishing subsidiaries, the company starts by exporting in order to assess the market's receptiveness. The decision to establish sales subsidiaries in Madrid (2011) and London (2013) was of a strategic nature due to **cultural similarities** (especially in what the language is concerned) with Latin America and North America, respectively. In Spain, Science4you uses the stamp of Universidad Autónoma de Madrid and in the UK, of the University of Oxford. In these countries, most revenues come from mass retail.

Despite being present in several countries, the majority of revenues (78%) still come from Portugal **[Appendix 12]**, nevertheless one of its strategic objectives is to reduce this number to only 50% in the next years. The other one is to increase its sales volume to more than 20 million Euros per year until 2017. In order to do so, its current **internationalization strategy** focuses on increasing its presence in the North-American continent and other Anglo-Saxon countries, while consolidating its operations in Europe. In the medium-long term, the company also expects to reach the East and Southeast-Asian countries.

Science4you already took some steps towards these goals, having recently entered the US. However, before doing so, the company engaged in three main actions: (i) increased the number of products, creating 120 new products in 2014, (ii) invested in the new factory, which allows for a capacity increase directed towards international markets and (iii) hired John Harper (one

of the most important personalities in this industry, which will be discussed below) as chairman and Mike Barrat (former sales manager at Mattel), both experienced in Anglo-Saxon markets.

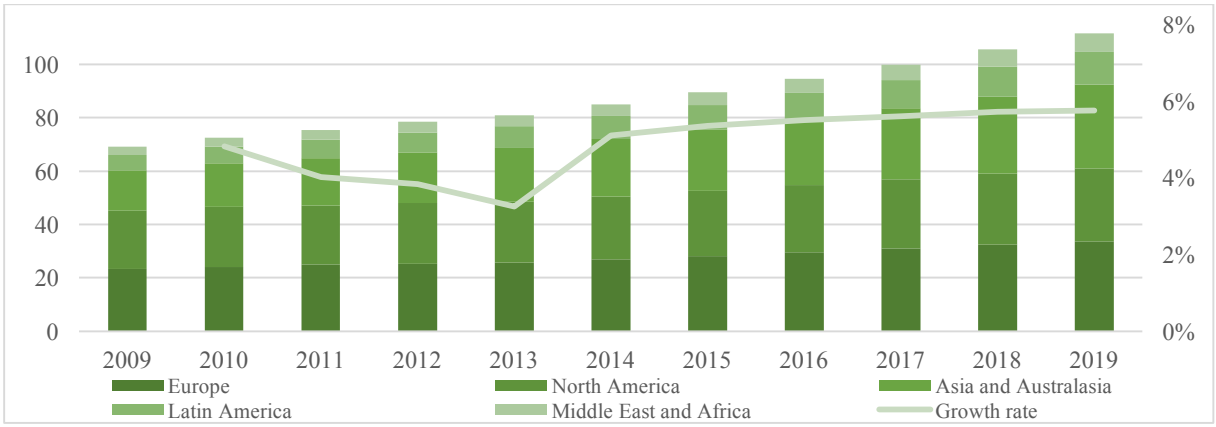
EXTERNAL ANALYSIS

Science4you operates in the **Toys and Games Market**, which, for the purpose of this report will be divided in two groups: Traditional Toys and Games (both electric and non-electric) and Video Games **[Appendix 13]**. The company sells mostly traditional toys and games, more particularly STEM (Science, Technology, Engineering, and Math) toys. Within STEM toys, most of its products fall within the scientific and educational scope. Since revenue from international markets has been growing in importance, being expected to surpass the revenues from Portugal in the near future, and as the company already expanded beyond Europe, the world market for traditional toys and games will be the one considered for this analysis.

1. Market Overview: size, growth and trends

This industry has **two distinctive characteristics** (i) **high-seasonality**, for instance, 50 to 60% of all purchases in Europe are made during the Christmas season and (ii) **constant innovation**, with 60% of the toys each year being new to the market[iii]. Regarding **market size and growth**, the world market for traditional toys and games has been growing for the last 5 years (CAGR of 4,2%), amounting to $85 billion in 2014 **[Figure 1]**. The growth in 2014 was mainly due to the growth of construction toys, licensed products and video games.

Figure 1: Market size by region (billions US$) and annual growth rate



Source: Euromonitor

Furthermore, this market is expected to continue to grow over the next 5 years (CAGR of 5,6%), with the most relevant regions being Europe, North America and Asia. In terms of individual markets, the most relevant ones include the US, China, Japan, UK and France **[Appendix 14].**

Regarding **market trends**, nowadays one can find four major trends in 2015[iv]: (i) open-ended and full-family play toys, which promote creativity and problem-solving; (ii) "Top In Tech" toys, which attract tech-savvy kids and include, for example, electronics, augmented reality and robotic pets; (iii) STEM toys, which refers to educational and academically focused toys and includes engineering kits, educational board games, amongst others; and (iv) Dinomania, which refers to dino-themed toys, fostered by the arrival of the movie "Jurassic World".

Regarding the **STEM** toys, this category generated $25 billion worldwide in 2014 and has been growing at a rate higher than the industry average **[Appendix 15].** Also, it is forecasted to continue to grow at about 4% per year[v]. This growth has been driven by three main factors[vi]: (i) high disposable income as these products are, on average, more expensive than other toys; (ii) rising college enrolment, since parents want their kids to start preparing for college as soon as possible and (iii) decreasing household sizes, which give rise to more parental involvement.

2. Competitive Landscape

Regarding the **indirect competitors**, it is relevant to mention the larger players such as Mattel (11,7% of market share worldwide in 2014[vii]), Hasbro (8%), LEGO (7,5%) and MGA Entertainment (1,4%). These players may feature in more than one category, thus a summary of the division of the major players by categories can be found in **Appendices 16 and 17**.

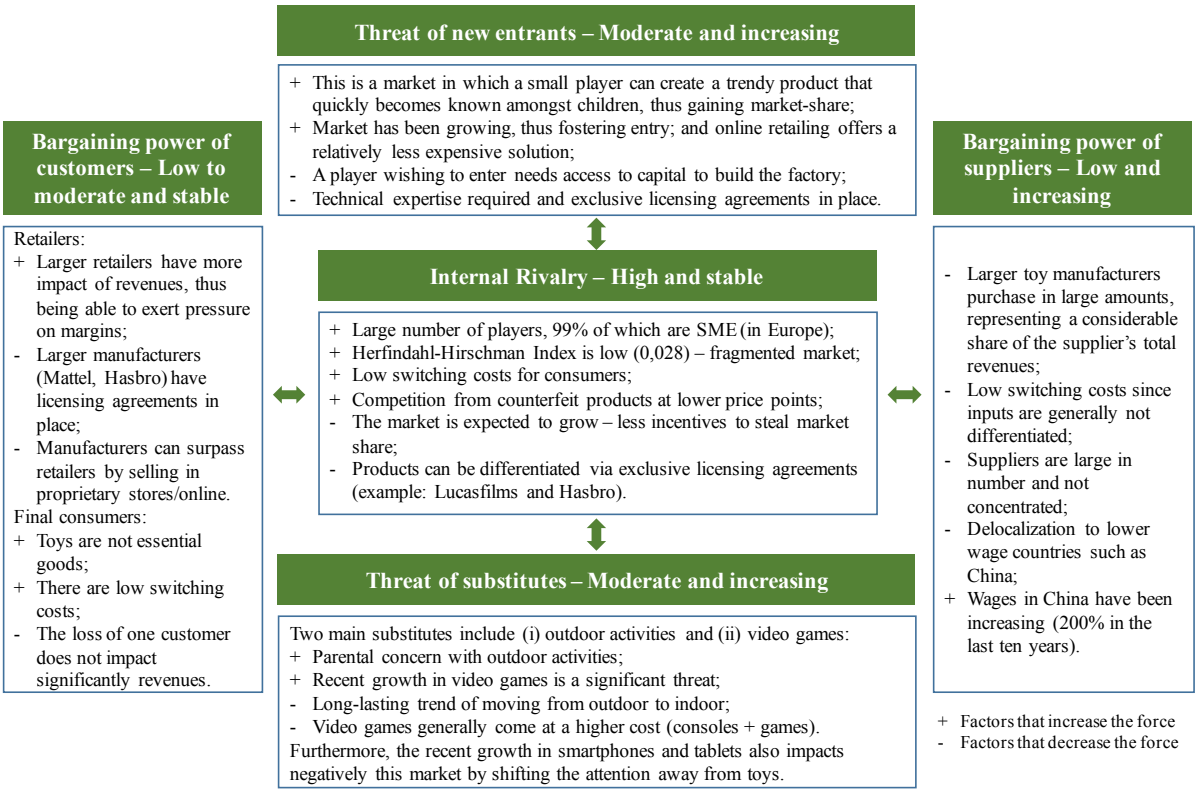
In terms of **direct competition**, as mentioned, Science4you competes in the scientific and educational category, which does not have much expression in Portugal so far. In the same target age group, the relevant players include Clementoni (0,3%), Wild! Science, 4M Industrial Development and Edu-Science. On average, these players are on the market for a longer period and are thus larger than Science4you in terms of sales volume and international footprint.

Targeting a lower age group, but in the same category of toys, one can also consider Leapfrog Enterprises (1,2%) and VTech (0,7%). A more detailed analysis can be found in **Appendix 18**.

3. Industry Analysis: Porter's Five Forces Framework

The Porter's Five Forces framework analyzes the relevant forces that influence an industry's profitability (Porter 1979). The relevant market for this analysis comprises the manufacturers of Traditional Toys and Games operating Worldwide. A more detailed analysis can be found in **Appendix 19** and a short-summary is provided below in **Figure 2**.

Figure 2: Porter's Five Forces Analysis



COMPETITIVE ADVANTAGE

After assessing the company's Organizational Resource Platform, initially proposed by Barney (1991), benchmarked against the before-mentioned competitive set, a VRINNO Analysis was performed for the company's **key strengths**, which are: (i) network of suppliers; (ii) new product development and (iii) strategic counselor. The **network of Portuguese suppliers** is valuable, necessary to compete and helps bringing the overall cost of production down;

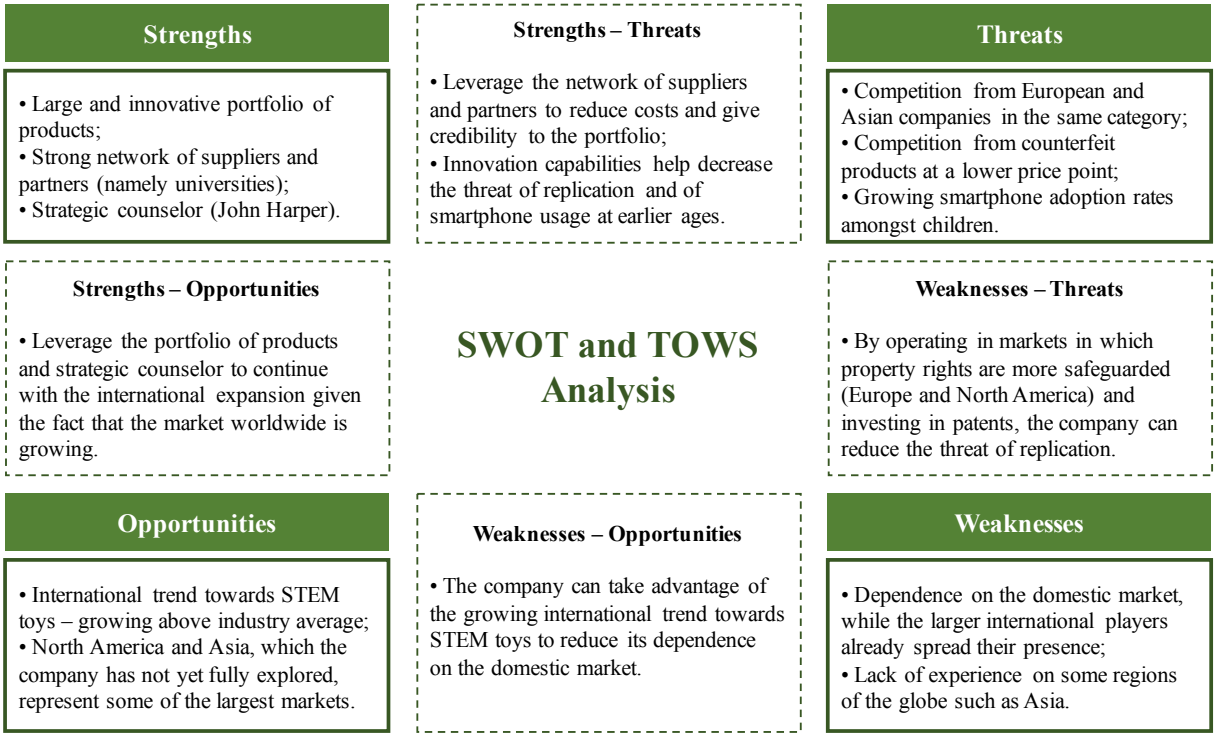
however, it is not rare and thus it is not a source of competitive advantage. The **development of new products** is conducted in Lab4you, which, as mentioned, is composed of 40 employees from different backgrounds. Despite being valuable, this blending of different experiences in one laboratory is not widely available in the industry, thus providing a **temporary competitive advantage**. However, it is possible for competitors to replicate such team at a cost that still allows them to capture abnormal returns; consequently, it does not provide a sustainable advantage. Finally, regarding the company's **strategic counselor**, John Harper, throughout his career, he was President of Hasbro in Europe, Managing Director of Mattel and Fisher Price in the UK and also President of the European Toy Association, being considered the most important person of this industry in 2013[viii]. He is currently Chairman of Science4you and serves has an advisor in the internationalization process, with the company leveraging his network. Even though he is valuable, rare and costly to imitate, he also provides mentoring to an exclusive group of other companies, thus also not allowing for sustainability.

In isolation, none of these resources is able to provide a sustainable competitive advantage, however one can find the explanation for the company's success in the **interactions between the three**. The product development team creates innovative products, which are produced at a relatively low cost, due to the network of suppliers. This allows for products to be placed in national and international (with the help of John Harper) shelves at relatively lower price points. The complete analysis can be found in **Appendix 20**.

SWOT AND TOWS ANALYSIS

The SWOT analysis summarizes the areas of strength and weakness **internal** to the company, alongside the opportunities and threats of the **external** environment. The TOWS analysis acts as a complement to it by developing strategies that (i) leverage strengths to maximize opportunities - SO, (ii) leverage strengths to minimize threats - ST, (iii) minimize weakness by exploring opportunities – WO (iv) minimize weaknesses and avoid threats - WT.

Figure 3: SWOT and TOWS Analysis



COUNTRY SELECTION

After assessing the internal and external factors that are influencing the company, it can be seen that, in order to achieve 20 million Euros in sales until 2017, the company needs to further expand internationally, given the limitations of the Portuguese market. On the one hand, internally, management has the desire to grow Science4you's international presence in order to be recognized as one of the key players in the segment. Furthermore, the company has already built a new factory and completed a new round of funding to support this expansion. On the other hand, externally, there is a growing trend for STEM products and foreign markets have been giving positive feedback (international sales grew by 90% in 2014). Thus, the purpose of this chapter is to define the next country in Science4you's internationalization process. This selection will be comprised of three steps: (i) defining an initial set of potential countries, (ii) combining two country screening methods (elimination and ranking), to assess the countries with the highest potential and (iii) discussing the results and defining the target country.

1. Initial Set of Countries

In terms of international operations, as mentioned, the company is currently focused on the North-American market, more specifically on the US, to which it recently started exporting. After meeting with the company and conducting secondary research, it was assessed that the company had two strategic options it could follow after its investment in the US: (i) continuing to bet on the Anglo-Saxon countries or (ii) start expanding to Asian ones. The rationale behind the **Anglo-Saxon countries** is related to the fact that, besides representing some of the largest markets worldwide, the company can also leverage on some common characteristics shared with the UK and the US such as culture, language and geography. On the other hand, the **East and Southeast Asian countries** also represent some of the largest markets for toys and games and have a pronounced interest on scientific and educational toys, thus they are also markets that the company desires to reach. In Europe, the company already has a considerable presence, being currently focused on consolidating its operations in the countries it is already present, not on expanding towards new ones, thus it will not be considered. Based on these two possibilities, an initial set of countries was defined **[Appendix 21]**.

2. Country screening

After identifying the initial set of countries, it is essential to verify market potential and quantify opportunity (Cavusgil, 1997). Thus, the following analysis quantifies and ranks the market potential of the selected countries. This process will be composed of three distinct stages (similarly to the process described by Cavusgil, 1997): (i) selecting the relevant criteria, (ii) standardizing the criteria and (iii) determining the weight of each one in the overall score.

However, before starting the ranking process, a **preliminary elimination** was done to reduce the initial set of countries, being based on macro-criteria, namely: economic freedom, population size, political risk and country risk. First, North Korea was eliminated due to its current political regime, which allows for an extremely low level of economic freedom. Second,

Brunei-Darussalam, Macao, East-Timor, New Zealand and Ireland were also eliminated based on the fact that the population size in these countries is below 5 million, which reduces the market size *a priori*. Also, countries with a political risk and/or country risk higher than B were eliminated, namely, Mongolia, Myanmar, Cambodia, Vietnam and Thailand. Finally, Taiwan and Laos PDR were also eliminated due to lack of key data. This initial analysis allowed for a reduction of the original set of 23 countries to just 10, namely: Australia, Canada, China, Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore and South Korea. These countries will now be analyzed based on a more specific set of criteria.

a. Criteria Selection

When defining the relevant criteria for the ranking, Cavusgil (2004) considered dimensions such as: market size, growth and intensity, alongside country-risk and economic freedom. Despite this theoretical model including mostly macro-criteria, the addition of *"new and more firm- or industry-specific dimensions"* (Cavusgil, 2004) is advised when developing models for specific industries. Hence, this ranking will include (i) macro-level criteria and (ii) micro and firm-specific criteria. Further detail is presented in **Appendices 22 and 23**.

Regarding the **macro-level**, 7 criteria were used: (i) **number of children** (0-14 years) since they account for the vast majority of the final consumers in the countries analyzed; (ii) forecasted **growth of the number of children** in order to assess the evolution of the aforementioned criteria; (iii) **Gross National Income** converted to international dollars using purchasing power parity rates (GNI PPP) since, as mentioned, STEM toys are heavily backed by high-income countries; (iv) forecasted real **growth rate of the Gross Domestic Product**, which serves as a proxy for how the GNI PPP will evolve; (v) **GNI PPP per capita** in order to account for the effect of the population size on the GNI PPP; (vi) **Country Risk**, which averages several types of risk: sovereign, political, currency, baking and economic structure; and (vii) **Economic Freedom Index**, which analyzes several determinants of economic

freedom such as property rights, fiscal freedom, trade and investment freedom, business and labor freedom, among others.

Concerning the **micro-level criteria**, 8 criteria were used: (i) **sales value generated by scientific and educational toys in one year**, which measures the market size; (ii) **forecasted growth rate of the sales** of this category, which measures market growth, thus providing insights on whether a firm can grow without acquiring clients from its competitors; (iii) **Herfindahl-Hirschman Index** for the traditional toys and games market, which is a measure of market concentration, thus providing information on the intensity of competition; (iv) **average spending per children** in scientific and educational toys, which measures market intensity; (v) the degree to which **property rights** are safeguarded, allowing for an assessment of the threat of replication by competitors, since, as mentioned, one of the threats that the industry is facing is the growing competition from counterfeit products at lower price points; (vi) share of **scientific and educational toys** in the overall market for traditional toys and games, as it provides insights on whether there is an already established interest/preference for this category; (viii) **Education Index** since, as mentioned, it was found that rising college enrolment is a driver of growth for the STEM category; and (viii) average **tariff applied to toys and games** imported from Portugal, which might impact the company's revenues.

Finally, the **firm-specific** criterion used was **language similarity**, namely whether or not the country shares a **common language** with any of the countries in which Science4you is already present in. This criterion is relevant since it eliminates the need to translate the packaging and to change the instruction guides, thus also reducing the exit costs related with unsold inventory.

b. Criteria Standardization and Distribution of Weights

After defining the criteria and collecting the data for the 16 variables, these were **standardized** into a scale ranging from 1 to 100, according to Equation 1 in **Appendix 24**, in order to prevent

artificial weighting (Cavusgil et all, 2004). One particular variable (Tariffs) had to be reversed (a higher tariff is not favorable), before standardizing.

Concerning the **distribution of weights [Figure 4]**, the first thing to note is that considerable importance was given to industry-specific criteria versus country-specific since they tend to be better predictors of firm-performance and a preliminary elimination based on macro-criteria had already been done. Afterwards, the definition of the relative weight of each criterion was based on (i) the previous internal and external analysis; (ii) research on theoretical models – Cavusgil (2004) considered market size as the most important variable, followed by growth, intensity, risk and economic freedom; and (iii) the company's view on the subject, which identified market size and competition as relevant variables. It is relevant to mention that considerable weight was given to language similarity since it is the only firm-specific factor.

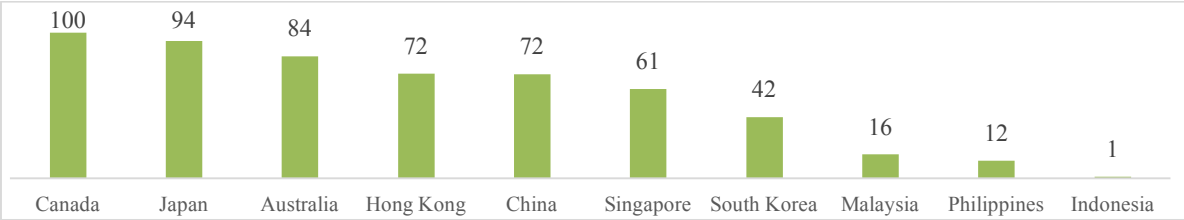
Figure 4: Distribution of weights

Level	Criteria	Weight
Macro (25%)	Number of children	5%
	Growth in the number of children	5%
	Gross national income PPP	3,25%
	Gross domestic product growth	3,25%
	Gross national income per capita	3%
	Country risk	3%
	Economic freedom	2,5%
Micro and firm-specific (75%)	Scientific and educational market size	16%
	Scientific and educational market growth	14%
	Herfindahl-Hirschman Index	8%
	Average spending per children in scientific and educational toys	7,5%
	Property rights	7,5%
	Importance of scientific and educational toys	5%
	Education Index	5%
	Tariff from Portugal	4%
	Language similarity	8%

3. Results

After factoring the weight of each criterion, the country that yielded the highest score was Canada, followed by Japan, Australia and the remaining Asian countries. The score and corresponding ranking of the countries can be found in **Figure 5**, being further detailed in **Appendix 25**. For comparison purposes, if Portugal was included, it would rank 8th.

Figure 5: Standardized scoring results by country



Given the results, the company should opt for **Canada** since it is one of the largest markets for this segment, having also one of the highest spending per children, while presenting the lowest risk and intensity of competition. Furthermore, several synergies with the US market will most likely arise, namely in terms of costs, network, market knowledge, among others. Considering the other options, Japan is also an attractive market, however, it appears to be one of the few that have matured in this segment, being expected to have a decline in sales for the next 5 years. This is likely to trigger more aggressive behaviors from the competition. Furthermore, the competitive landscape is mostly dominated by local firms, possibly showing a slight preference towards domestic products. Furthermore, Australia also has potential, however, besides performing worse than Canada in most indicators, new relations would have to be developed in that region, while in Canada, Science4you can leverage the existing relations with US partners.

THE CANADIAN MARKET: ANALYSIS AND ENTRY MODE

Canada is the 2nd largest country in the world by total area, being located in North America. With a population of 35,5 million, a GDP of $1.787 trillion and a disposable income per capita of $28.786 in 2014, it is a developed high-income country and one of the wealthiest ones in the world.

1. Macro-economic Analysis (PESTLE)

The PESTLE analysis identifies the macroeconomic factors which might have an effect in the industry considered, being divided in six main groups. **Figure 6** summarizes the relevant forces in each of those groups and a detailed analysis is provided in **Appendix 26**.

Figure 6: PESTLE Analysis for the Canadian Market

Political	• Democratic principles are safeguarded through a stable constitutional monarchy; • Several bi-lateral Free-Trade Agreements (with mostly American and European countries), but not with Portugal; • An FTA currently stands to be approved between the EU and Canada (CETA), which will eliminate 98% of the tariffs between the EU countries and Canada.
Economic	• One of the world's wealthiest nations, being rich in natural resources (e.g. oil); • One of the highest degrees of economic freedom with some restrictions on FDI; • Sound financial system but high unemployment rates and rising household debt.
Social	• One of the world's most ethically diverse nations; • Decreasing fertility rates and aging population; • First among OECD countries in terms of tertiary education.
Technological	• 14th in terms of smartphone penetration rate; • Children increasingly tech-savvy, adopting mobile devices at an early age (3,1% of children between 0-11 years and 58,5% between 12-17 have a smartphone)
Legal	• Corporate tax laws (15% at a federal level) among the lowest in developed nations – namely when compared to the US (35% at a federal level); • Property rights well-safeguarded with a patent filling process similar to the US; • Toys and Games must comply with the CCPSA.
Environmental	• Ranked extremely poorly on the 2014 Environmental Performance Index; • Increased oil explorations has led to an increase in emissions.

2. Industry Analysis

In 2014, the traditional toys and games market in Canada reached $1.607 million, being the 10th largest market worldwide with a CAGR of 1,3% over the last 5 years and a growth of 1,5% between 2013 and 2014. This growth was fostered by the debut of the LEGO movie in early 2014 which drove the sales of construction toys. Furthermore, this market is highly seasonal, with the bulk of retailing shopping (60-75%) being made in the 3th and 4th quarters of the year[vii]. The **scientific and educational toys** account for 6,9% of the traditional toys and games market, having grossed $111 million in 2014. While these toys do not have a market share comparable to Games and Puzzles or Arts and Crafts, they are one of the few categories in the Canadian market that have been growing and are expected to continue to grow in value (CAGR 0,5%) for the next 5 years [**Appendix 27**]. In fact, the forecasts for the overall traditional toys and games market suggest a downward trend in terms of growth (CAGR -0,5%).

Concerning **consumers**, Canada has about 5,7 million children (0-14 years), a number which is expected to grow by 1,34% in the next years. On average, each children spends $282,4 on

traditional toys and games in Canada throughout an entire year, however, only $20 are spent in scientific and educational toys. The segment which accounted for the largest spending was pre-teens (7-12 years old) with 33,6%, followed by young children (0-6 years old) with 33,4%[vii]. Regarding the current **consumer trends**, one can identify the following: (i) adoption of mobile devices, such as smartphones and tablets, which takes the attention off traditional toys; (ii) children are becoming more savvy and sophisticated regarding the toys they want to play with, having a shorter attention span regarding one toy (iii) bipolarization of consumption: both the lower and higher-priced toys are gaining relevance versus the mid-tier options[ix].

In terms of **competition**, the traditional toys and games market has become increasingly concentrated in the last years, signaling a higher degree of rivalry, with an HHI of 0,08 and with no company owning more than 20% of the market. The major players include Hasbro (19% of market share in 2014[vii]), Mattel (17,2%), LEGO (5,8%) and Crayola (5,4%). Regarding the scientific and educational toys, the main players within the same target (5-12 years of age) include: Alex Brands, Edu-Science (which is present mostly in Toys "R" Us), Steve Spangler Science, Leisure Learning and 4M (present mostly online and with lower price points). A detailed competitive analysis is presented in **Appendix 28**.

Finally, concerning **distribution**, the most used channels for traditional toys are store-based retailers such as (i) toys and games stores (35,3% of sales[vii]), namely, Mastermind Toys, Scholar's Choice, Toys "R" Us and proprietary stores; and (ii) supermarkets and hypermarkets (26%), namely, Best Buy, Hudson Bay, Indigo, Real Canadian Superstore, Sears and Walmart. Although growing, online retailing still does not account for a significant amount of sales (5%).

3. Entry Mode Definition

As mentioned, there are three main entry modes: export, contractual and investment. So far, Science4you has only resorted to exporting, having established a sales subsidiary in Spain and in the UK given the higher sales volume, while in the remaining countries it uses agents and/or

independent distributors. It appears that the company, so far, has been increasing progressively its degree of commitment in the countries it operates, according to the feedback it receives. In fact, it generally begins with exporting, since it is a way to asses the market's receptiveness. Given this and the fact that the company has recently built a factory, it is reasonable to assume that it will keep its production in Portugal, proceeding then to **export** the products.

Between indirect and direct exporting, the company should opt for the latter since the target country's middlemen are likely to have a better network and better insights about the market. Furthermore, the company already has some years of international experience and tends to use **direct exporting**. Within direct exporting, it is reasonable to assume that the company prefers not to establish immediately a sales subsidiary, but rather wait to see the feedback it receives, leaving the option to use either an agent or a distributor. In fact, Science4you typically uses exporting *via* a representative as a way to gain additional insights on a market before committing more resources. Given these two options for a representative, the preferential entry mode, in this an initial stage, is through an **independent distributor**, since it provides several advantages over the local agent: (i) it takes ownership of the goods, paying upfront and thus absorbing most of the risk (ii) it has more incentives to promote the products, and (iii) it may provide the post-purchase services to the client; however, it usually requires higher margins. Furthermore, in the US (the market which is closest to the Canadian one) it started by using a distributor. Finally, it seems to be common practice in the industry, adopted by some of the identified competitors. In order to establish contact, the company can leverage John Harper's network and/or existing relations with US distributors. A presence in North-American Fairs is also recommended, namely in the *Toy Fair* (New York) and in the *ToyFest West* (Las Vegas).

4. Financial and Risk Analysis

After defining the entry mode, an analysis was developed to assess: (i) the entry and exit costs, (ii) whether the investment will be worthwhile and (iii) the risks of the Canadian market.

Regarding **entry costs**, given the recent investment in a new factory specifically directed towards international markets, **there is temporary spare capacity** (in machine terms). Since the company forecasted that this capacity, in the short-term, will not be totally absorbed by the growth in the markets it is currently in, there seems to be no related opportunity cost nor need to increase it. Furthermore, since 2014 was a year for the consolidation of the human resources, there is also **no expected need to hire an additional person** solely to handle these initial communications with the distributor, being handled, in the early stages, by the team responsible for the US. In terms of **marketing expenses**, the company has to account for the presence in the Toy Fairs and for other travel expenses namely (i) the establishment of a contract with the distributor and (ii) other trips in order to work on the promotional strategy also with the distributor. Furthermore, Science4you should consider possible **changes in packaging**, which needs to fulfill four conditions **[Appendix 29]**. The most relevant one is related to the instruction manuals being in English and French; however, the company's packages already have the mentioned information and the instructions are already written in both languages (the company is present in the UK and France). Finally, there are **trademark registering costs** of 810€[x]. Considering **exit costs**, these seem to be relatively low given this initial degree of commitment since, even if an order is cancelled halfway through production, the packages can be used in other markets, given the language similarities.

Concerning whether the **investment is worthwhile**, due to lack of key data, a benchmark with the US market was performed; a market from which the company has been having positive feedback, being considered to be similar at two levels. First, at a **geography-level**, which makes it reasonable to assume that the shipping costs are relatively similar. Furthermore, even though the tariff is lower in the US (0,7% versus 1,4%), the Canadian tariff might seize to exist due to the mentioned CETA. Second, these countries are also considered to be similar at a **market-level**. In fact, in terms of **competition**, most of the identified competitors are present in both

markets, with the HHI being comparable (0,07 in the US versus 0,08). Also, in terms of **price**, when looking at the products from the direct competitors identified, and comparing the price points for the same toy in both markets adjusted for a common currency **[Appendix 30]**, some slight differences arise, but, on average, no huge disparity is seen. Finally, it is also likely that the retailers and distributors in Canada do not have significant differences in terms of margins when compared to the US; more so if Science4you is able to use the same distributor. When considering the mentioned factors, one can expect the margin in both countries to be similar, with the possibility of it being slightly lower in Canada. Notwithstanding, since the company forecasts to have spare capacity (thus, no opportunity costs will arise) and, given the fact that some of the mentioned entry costs, especially the travel expenses, can be shared with the US, it appears to be worthwhile to take advantage of the spare capacity and enter Canada.

Regarding **risks**, the following have to be considered: (i) **exchange rate** risk is assessed as relatively low (AA), however, there have been some fluctuations in the exchange rate throughout the year, considerably influenced by the volatility in oil prices[xi], which might have an impact on revenue; (ii) the **distributor risk** since it does not carry exclusively Science4you's products and it can thus prefer to promote others with higher margins, leaving the company's in inventory; (iii) **competition risk** since, first, the overall market for traditional toys and games is decreasing but the scientific and educational segment is growing, possibly leading some established indirect competitors to enter this category; (iv) **intellectual property risk** since the company does not hold patents in this market; (v) **low brand awareness** given that Science4you is not an large player; and (vi) **capacity risk** as the company forecasted that the markets in which it is present will not absorb its spare capacity; however, if orders grow more than expected, an opportunity cost might arise, and a market with a higher margin might be preferred.

CONCLUSION AND RECOMMENDATIONS

Given Science4you's intent to pursue its expansion, the **Canadian market** was assessed as the one with the highest potential. The company should initially approach this market through **direct exporting** via an **independent distributor** and, in order for this entry to be successful, a set of **recommendations** should be taken into account. First, the company should assess whether it can leverage any existing relation with US distributors, preferably one with presence in the most relevant stores: Mastermind Toys, Scholar's Choice and Toys "R" Us. Also, in the future, if it wants to increase its commitment in North America, it should consider the option of (i) filling for the relevant patents and (ii) serving this region with only one sales subsidiary – the fact that Canada has a much lower corporate tax rate should be taken into account. In terms of its **product-line**, the company should export the **science-line** as it is an international best-seller, being tailored to the age group with the highest spending (7-12 years). Given positive feedback and, since Canada has a smartphone adoption rate higher than any other country the company is in (except for the UK), it could consider exporting also smartphone-compatible products from the Tech4you line (such as the Smart Monkey). Furthermore, a presence in the North American Toy Fairs is of the uttermost importance to keep up with the trends for this region. In order to mitigate the lack of brand awareness, the company should: (i) take actions in order for its products to be **priced in line with the industry average** or even slightly lower (if the margins allow) – this could be attained by providing the distributors with larger discounts initially; and (ii) leverage the **Oxford stamp**, to reinforces its credibility.

Finally, the main limitation of this report is the fact that an in-depth financial analysis was not performed due to the unavailability of key data. Notwithstanding, it is highly-advised that, before entering the market, such analysis (using internal data and market research) is conducted to assess whether the committed resources, in the short-term and in the near future, would yield a higher return in different markets, or if Canada indeed turns out to be a child's play.

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