Regular article

Knowledge assets for internationalization strategy proposal

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ABSTRACT

Lack of trust, lack of references and the confidential nature of cybersecurity projects make internationalization in companies from the cybersecurity sector a great challenge. The development of lean methodologies over recent years has presented a method to reduce time and effort, measure performance in each step and pivot when it is necessary to apply a process to a different field. Considering that internationalization resembles entrepreneurship, because of uncertainty and risk in a new market where the value proposition should be validated, the Lean Start-up philosophy will serve as a theoretical framework in which to operate. The study of international challenges of cybersecurity companies and elaboration of an 'eight-step' internationalization mechanism based on Lean Start-up methodology will imply a cost-effective solution for cybersecurity enterprises that want to achieve profitability and higher return on investment in internationalization.

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Inteligencia de negocio y propuesta de estrategia de internacionalización

RESUMEN

La falta de confianza, la falta de referencias previas y la naturaleza confidencial de los proyectos de ciberseguridad hacen que la internacionalización de las empresas del sector sea un gran desafío. El desarrollo de metodologías lean en los últimos años ha presentado un método para reducir el tiempo y el esfuerzo en el proceso de internacionalización y permitir medir el rendimiento en cada paso y pivotar cuando sea necesario. Teniendo en cuenta que la internacionalización se asemeja a la iniciativa empresarial, debido a la incertidumbre y el riesgo en un nuevo mercado donde se debe validar la propuesta de valor, la filosofía Lean Start-up servirá como marco teórico en el que operar. El estudio de los desafíos internacionales de las empresas de ciberseguridad y la elaboración de un mecanismo de internacionalización de ocho pasos basado en la metodología Lean Start-up implicará una solución rentable para las empresas de ciberseguridad que desean lograr rentabilidad y un mayor retorno de la inversión en internacionalización.

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Introduction

According to Ries (2011), a start-up is a human institution designed to deliver a new product or service under conditions of extreme uncertainty. In recent years, transversal interest in entrepreneurship has increased considerably. Although the number of start-ups has risen significantly in Europe throughout the last decade, most of them fail when they come to market (Henrekson & Sanandaji, 2017). The most significant reason behind this fact is inefficient segmentation and therefore leading to a loss of clients (Cooper, 2019).

The internationalization process resembles entrepreneurship: it may be described as corporate entrepreneurship and is characterized by high degrees of uncertainty and complexity (Johanson &

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Vahlne, 2009). International new ventures (INVs) represent a growing and important type of start-up. Therefore, an INV is defined as a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries (Oviatt & McDougall, 1994; Xing, 2018).

The world of entrepreneurship has grown rapidly in recent years, changing rapidly the ways and plans of doing business for established companies who want to internationalize and continue growing in this uncertain and competitive environment (Ratten, Ramadani, Dana, Hoy, & Ferreira, 2017). Traditional management methods are not prepared to face current challenges and there is an evident need for new strategies adapted to these problems. Business model development (Osterwalder, Pigneur, Oliveira, & Ferreira, 2011), with lean methodologies, has given a new approach to business strategies, managing to reduce risks, costs and time in releasing new ideas or creating international spin-offs. These methodologies are rooted in adaptive planning, early delivery, and continuous improvement, all with an eye toward being able to respond to change quickly and easily (Mesa, Molenaar, & Alarcón, 2019). The Lean Start-up method has been widely accepted by entrepreneurs and academics around the world.

This paper will be focused in the application of these methodologies in order to create a new internationalization strategy for *S2 Grupo de Innovación en Procesos Organizativos S.L.U.* (hereinafter called S2 Grupo), a Spanish cybersecurity company with an international presence.

There are several reasons for choosing this as the main topic of research. First of all, the present innovation project will allow the acceleration of the internationalization process in S2 Grupo which needs an efficient and innovative strategy to continue growing abroad in a profitable way. This study aims to provide a better understanding of the internationalization strategies and processes adopted by technology-based companies. Firms want to scale their business models abroad in a clear, fast, and cheap way, keeping uncertainty to a minimum (Gkypali, Arvanitis, & Tsekouras, 2018). Moreover, a review will be conducted of the main challenges of cybersecurity companies when internationalizing. It has been discovered that the most challenging part when entering a new country is getting the first clients without previous references.

S2 Grupo is a pioneering Spanish cybersecurity company which bases its strategy in continuous improvement and different types of innovation. In a changing and turbulent environment, this fact has been the key to its success in recent years. The company has implemented the application of agile methodologies in project management and software development in the last years.

In light of S2 Grupo's strategic plan for the coming years, internationalization and an increase in the level of competitiveness in foreign markets are the key points (Lee & Trimi, 2018). Nevertheless, they are still using traditional methodologies for this challenging part of corporate strategy in a fast-changing environment. They are growing fast and exploding the opportunities to scale their business without a clear pattern to follow. This fact implies that s time and money are wasted without a measured return, which is currently a real problem for S2 Grupo. For this reason, it is reasonable, and fits within the company's strategy and principles, to develop an internationalization updated model based on agile methodologies and the lessons learned from their previous international experiences.

Once proven, it would be useful for the management to decrease idle time and effort when looking for new markets to internationalize their company and scale their model. This research project is expected to have a great impact on the organization because it covers a current gap that has not yet been developed and needs to be aligned the rest of the methodologies used. Moreover, not only would the final model be helpful and convenient for the company,

but there are also complementary benefits from this project, such as analyzing the whole process and efforts in internationalization development, studying the factors for success and failure in different markets, and being able to set an evaluation, proposal and future considerations for the company.

This project is divided into five defined parts. The first part is the introduction to the study. The second part is the literature review. The third part discusses, the challenges in internationalization of cybersecurity companies. Again, both methodologies will be blended, analyzing the different countries in which S2 Grupo operates from an internationalization strategy point of view. Then comes the development of an internationalization model based on the lean methodologies studied, lessons learned from previous internationalization experiences, key factors which guarantee success, and particularities of S2 Grupo as a company.

Following this, the feasibility of the model proposed will be validated with different methods. Finally, in the conclusions, a general review will be carried out, the evidence of improvement will be highlighted, and the main questions answered.

Literature review

Lean theories and basis were firstly developed in the 1970s by Toyota in Japan, called lean manufacturing, to optimize production processes (Womack, 2003). This new approach revolutionized industrial processes in different industries by decreasing idle times and efforts. Currently, lean principles can be applied to different disciplines in management (Müller & Thoring, 2012).

At the beginning of the century, a new methodology for the creation of companies known as customer development was born, designed by Steve Blank (2006) from his experience obtained through the creation and accompaniment of companies in the new information technologies sector. This generated much interest among different entrepreneurs who were expanding and contributing new ideas for its development. Some years later, Eric Ries (2011) generated very valuable contributions, developing the Lean Start-up methodology, which rapidly began to be used by every new entrepreneur in Silicon Valley. Ash Maurya managed, in 2012, to condense all this methodology including new techniques such as *bootstrapping* for start-ups, and Alexander Osterwalder (2011) introduced innovative tools for business model validation.

These methodologies are developed from customer feedback and agile production, achieving a reduction in time and costs used to develop the business model. It is a method widely used for the creation of new start-ups that day-by-day is popularized by the good results obtained by the entrepreneurs who have used it.

For Steve Blank, the conception of a start-up must be done with a different business plan to that used in traditional companies, where a product or service is developed with all its characteristics of excellent quality, carrying out detailed design of all areas, ending with a major market launch.

This is not possible for a start-up that has very limited resources, where non-acceptance by customers can cause immediate bankruptcy, which is why it proposes a business model in two stages: search and execution (known as customer development). These assumptions are applicable to the internationalization process of a company, considering how similar a start-up is to an international new venture, including the challenges and risks for both (Vahlne & Johanson, 2013).

The methodology developed by Steve Blank includes all the assumptions or hypotheses in the business model and the development of the experiments validates whether they are correct or whether they should be modified.

Eric Ries (2017) suggests that due to the extreme uncertainty faced by start-ups, a model should be designed through exper-

imentation, changing the traditional planning in which detailed assumptions are considered, constant adjustments can be made thanks to the feedback circuit of information created, measured and learnt from (the sequence create – measure – learn). These ideas should also be applied to established corporations in order to guarantee agility and success when launching new products to market. To carry out this methodology in the development of a business idea, it can help to identify whether it is the right time to make the leap and to go out to the market to sell the product and to capture clients, or, on the other hand, if it is necessary to carry out some iteration, or to pivot before putting the product onto the market, in order to achieve savings in time and cost.

Ash Maurya (2012), in his research and publication of *Running Lean*, created a systematic methodology for iterating from plan A to a plan that works, before resources are exhausted. Maurya adds the concept of bootstrapping, defined as financing through revenue from clients. This concept is quite interesting for companies as long as its current strategy focuses on growing efficiently, ensuring rentability in a sustainable way.

Unlike previous authors, Ash Maurya, through *Running Lean*, helps to test and refine an initial idea in a systematic way by means of three fundamental steps that will be summarized: document plan A, identify the riskiest parts of the plan, systematically test the plan. The author proposes the development of the business plan in Lean Canvas, which is an adaptation of the Business Model Canvas of Alex Osterwalder. It develops a fast scheme including all hypotheses to be tested in order to prove market success.

Like Ash Maurya, Alexander Osterwalder et al. (2011) extended the concepts of Steve Blank and Eric Ries, introducing a method for any entrepreneur to use as an aid in the development processes of their business model. This research proposes a simple, remarkable and easily understandable concept through a business canvas that contains nine modules which reflect the logic of a company to generate revenue and which cover the four main areas of a business: customers, supply, infrastructure, and economic viability.

Internationalization process

Internationalizing companies is a dynamic process that has been explained through the use of theoretical models with a diversity of approaches, which, in general, are usually grouped together in two great trends: those that follow the traditional approach to the process of internationalization (sequential or step-by-step) and those that propose alternative models (Galdino, Rezende, & Lamont, 2019). It should be understood that international strategy is part of the corporate strategy of the company, and that the organization should promote international culture transversally starting with the management (Kraus, Niemand, Besler, Stieg, & Martinez-Ciment, 2018).

However, companies should be motivated when starting their internationalization process, but a minimum of key factors are needed in order to guarantee a successful performance abroad. First of all, the competitive advantage must be identified. A company should offer more perceived value than the competition: it can be achieved through a cost leadership strategy or differentiation (Vahlne & Johanson, 2017).

Other key factors observed in the implementation of an international strategy are:

- a global approach and mindset in the entire organization
- a clear motivation and commitment in the internationalization project
- suitable adaptation to market singularities
- the proactive search of growth opportunities in external markets.

Table 1
Internationalization factors.

Push factors	Pull factors
Associated with difficulties or restrictions in the local market. The internationalization process is a response to overcome these barriers.	Associated with a proactive vision from the management. Although the company is able to continue growing in the domestic market, they perceive the internationalization need in order to explode different opportunities abroad.
Saturated domestic market with intense competitiveness. The product cycle is in the market of origin in a phase of decline. Unfavourable domestic conditions (negative economic prospective or increment in costs or legal requirements).	The market seekers: developing countries are normally the most demanding markets due to its growth opportunities and early stages of development. The resource seekers: seeking more favourable resource endowments, like raw materials or cheap labour costs. The efficiency seekers: achieving economies of scale and risk diversification is also a common internationalization cause. The strategic asset seekers: strategic reaction, when they do not want to lose their competitive position.

Source: Own elaboration

Within the internationalization framework, push and pull factors can be distinguished in a traditional approach, comprising different motives (Cuervo-Cazurra, Narula, & Un, 2015; Dunning, 1992; Török, Tóth, & Balogh, 2019; Weerawardena, Mort, & Liesch, 2019) (Table 1).

When the company decides to start its internationalization process, there are two major entry decisions that need to be carefully analyzed: first, the company must assess the attractiveness of the markets it intends to enter and select those that guarantee the most success; secondly, it must decide the form or mode of entry it will use in that market (Weerawardena et al., 2019). This is a key step in the internationalization process and therefore will be considered in the internationalization model developed in the following sections (Soriano & Dobon, 2009).

The correct selection of markets will allow the adaptation of the value proposition to the markets where the company has greater possibilities of success and sustainability over time. The methods of entry into a new country are considered as stages in a process of progressive international expansion (Ratten et al., 2017). In practice, both decisions are made jointly and interactively.

The Scandinavian approach (known as the *Uppsala Internationalization Process Model,* (Johanson & Vahlne, 2009) defends a sequential process in which, as experience is gained in a market, the level of resources committed by the enterprise is greater. Companies prefer to acquire knowledge about external markets before competing in these, and therefore markets similar to the market of origin are preferable. This model was established firstly in the 1970s but reviewed in 2009 by the authors and included the role of networks in internationalization of firms and the importance of relationship-building and trust. However, it is argued that the Uppsala Model employs a reactive rather than proactive perspective of experiential learning, that it is defined as acquiring more knowledge about already identified solutions (Forsgren, 2002).

Coviello and Munro (1995) conducted empirical studies of the internationalization of small software firms. They found that network relationships have an impact on foreign market selection as well as on the mode of entry in the context of ongoing network processes. Moreover, learning and commitment are strongly related to identifying and exploiting opportunities, and therefore to reducing risk uncertainty (Martínez-Román, Gamero, de Loreto Delgado-González, & Tamayo, 2019).

Challenges in the internationalization of cybersecurity companies

The first major challenge for companies in the internationalization of the cybersecurity sector is to deal with the importance of prior client prescriptions and references, and trust as key success factors in international markets (Kesan & Hayes, 2014).

Any company that begins an internationalization process is considered a foreign enterprise beyond the borders of its own country. Currently, 'born global' enterprises try to accelerate this process to the maximum (Hartsfield, Johansen, & Knight, 2017). this reason, sometimes it is difficult to demonstrate high-quality performance without references from previous local clients. In addition, being a small or medium-sized company is an aggravating factor that limits the company's available resources. This barrier can be reduced, on the one hand, by cooperating with local partners, in order to gain presence and create a network of contacts in the local market (Gibb, 2006). On the other hand, it can also be improved with greater brand awareness and recognition as a guaranteed quality brand in the cybersecurity sector. The purchase of cybersecurity services is a large investment for any company and, therefore, a purchase of high involvement. Clients always prefer high-quality recognised providers with demonstrated experience in the field in order to ensure the best investment for their companies and safer growth without cyberattacks.

The technology market is led by technology giants (IBM, Microsoft, Siemens, Samsung), and it is necessary to achieve coverage in technology reports written by consultants and advisors, such as Gartner, to gain recognition and confidence in the brand (Chiarvesio & Romanello, 2018) For this reason, it is also important to study local competitors to analyze the intensity of competition and slightly modify the value proposition according to the requirements and performance standards of the country.

The size of the target country's market must also be taken into account. Industry concentration and the number of potential customers are key factors in choosing a potential market (Kshetri, 2016). In addition, there are some sectors that should be studied with special interest, such as energy, health, and banking. Another important problem is the language barrier. There are several countries where the use of English for business relations and projects is not considered, so an enterprise cannot participate in public bids or submit bids to relevant customers. This challenge could be met by hiring local staff to mitigate the language barrier.

Cultural distance and lack of knowledge of the potential client are also important barriers to internationalizing a company in this sector. As the Uppsala model anticipates, companies must first bet on culturally close markets, and then, as a result of the learning process, on more distant ones. Market knowledge leads to commitment to the market, which at the same time leads to a deeper knowledge of the market and further commitment to the market. This is supported by a successful R&D performance that leads to an increased value and enhanced reputation of the company (Guo-Fitoussi, Bounfour, & Rekik, 2019).

The size of the company is also relevant in this sector. As mentioned before, the technology market is monopolised by technological giants, so SMEs have greater challenges when trying to compete with them. Finally, it is always important to conduct a study of a country's environmental factors related to legal risks, technological updates and related news in order to ensure a favorable framework for cybersecurity companies (Sund, 2007).

Internationalization process in the company S2 Grupo

According their corporate website (2019), S2 Grupo is a leading Spanish company in the national cybersecurity market, with an international presence and the ability to develop its own products and services through intensive investment in R&D. S2 Grupo is an innovative technology-based company with extensive experience in cybersecurity in environments in which it deals with sensitive information, in more than eighty large public and private entities, distributed in all sectors of the economy.

The company has its main clients in sectors where cybersecurity and data protection have more relevance: Public Administration, Banking, Insurance, Energy, Transport, Health, Industry, emerging sectors with investment in R&D, etc.

S2 Grupo presents a rapid turnover growth that reflects perfectly the success of the strategies and internationalization process conducted by the company. An acceleration of the turnover evolution since 2015 occurred due to the beginning of more stable international operations of the company.

S2 Grupo follows a proactive innovation strategy. They try to identify new market needs and anticipate their competitors by constantly introducing new products, procedures, and penetrating new markets (Tidd & Bessant, 2018). According Camisón-Haba, Clemente-Almendros, and Gonzalez-Cruz (2019)) and Rajapathirana and Hui (2018), a technology firm should combine knowledge-based capabilities, technological innovation capabilities, and managerial capabilities in order to guarantee success in its innovation strategy. This is what S2 Grupo applies.

At present, the main facilities of S2 Grupo are located in Valencia and Madrid, with a commercial delegation in Barcelona, and the company also has teams deployed in León and Oviedsuo. Outside Spain, S2 Grupo has subsidiaries in Brussels, Bogotá, Mexico City and Lisbon, and has a team working at the United Nations Logistics Base (UNLB) in Brindisi (Italy). The international operations of S2 Grupo around the world will be developed in the following section.

As their first international movement, S2 Grupo took part in the ICEX Next Program. This was an opportunity to start testing different markets to internationalize the company, diversify the business risk and improve their global competitiveness. This programme was directed by ICEX Spain Exports and Investments, which is a national public business entity whose mission is to promote the internationalization of Spanish companies in order to contribute to their competitiveness and add value to the economy as a whole. S2 Grupo had, as had every SME participating in the ICEX Next Program, a Personal Manager who helped the company to study different markets.

In 2014, S2 Grupo found support from IVACE, which contributed to their internationalization project co-financed by the European Regional Development Fund (FEDER) within the framework of the ERDF Operational Program of the Valencian Community 2014–2020. The aim of the internationalization project of S2 Grupo is to achieve a strong impact on international growth, aimed at target markets, seeking to strengthen the international presence of S2 Grupo and its products and services.

Several milestones have been achieved by the company since the beginning of the internationalization process. In the following pages, each country in which S2 Grupo has a presence will be analyzed and explained.

Colombia

The first relevant international challenge of S2 Grupo took place in 2014; the chosen country was Colombia. The advisory board of the company led them to a contact with a local partner in the city of Bogotá and they decided to establish a subsidiary together. It is an independent subsidiary (a simplified stock branch). The management of the subsidiary is conducted from there, but heading the subsidiary is reallocated a trusted expat as the general director. The presence in Colombia and existence of local partners has been relevant for the participation in diverse projects around South America, as for example in Brazil. The local partner had an important presence in the industrial cybersecurity, energy, and supplies sector, so important projects carried out in South America are in these sec-

tors. The management of S2 Grupo understands the difficulty to build a network in Colombia due to the presence of local players. It is true that compared to Colombian companies, S2 Grupo had its own advanced cybersecurity technology. However, the infrastructure of the country in terms of technological development is high.

Mexico

In 2015, and following the example of Colombia, S2 Grupo conducted an International Joint Venture with local partners, and established a representative subsidiary in Mexico D.F. At present, the local partner leads the commercial part, but services and projects are conducted from the head offices in Valencia. In 2018, they invoiced more than 140,000 € to a unique client.

At first glance, Central and South America could seem an attractive developing market for Spanish companies, because of the language proximity and lack of legal restrictions. Moreover, Mexico produces some technological and organizational synergies at a national level. However, S2 Grupo has noticed that they aim to be like North American companies, and it is challenging to offer better value propositions than firms from the USA.

Portugal

In 2016, S2 Grupo started an international expansion in Portugal. Thanks to a loyal client from Oviedo (northern Spain), they started to provide cybersecurity services to the parent company of this client with headquarters in Lisbon. This first client was part of the energy sector. Different projects arrived following this initial experience, and the management of S2 Grupo decided to establish a commercial office in Lisbon by the end of 2018. That year, S2 Grupo Portugal invoiced more than 60,000 € and has several loyal customers. Its legal form is a permanent establishment and it is the representative office of S2 Grupo in Portugal that manages the local operations from there.

Belgium

The history behind S2 Grupo's commercial office in Brussels is quite different from the previous case studies. The management decided to open this commercial office in 2017, when the European presence of S2 Grupo started to grow significantly. They saw the opportunity of having a strategic office in the heart of Europe, close to NATO's headquarters and European institutions, in order to increase their competitive position. S2 Grupo wants to become a European cybersecurity company in order to enhance its brand awareness and value proposition, and its location in Brussels is a key move to achieve this purpose.

United States

Although the presence of S2 Grupo in the US is still moderate, it is a significant point to outline the projects carried on by the company there, which started in 2017. S2 Grupo signed diverse framework agreements and multilateral distributions with different companies and the UN. Moreover, the company is striving to get more projects and increase brand awareness in the US due to its participation in technological prospection fairs, seminars and international events in the country. Again, the client's traction effect when achieving projects in this country is noteworthy.

Norway

As mentioned in previous sections, most of S2 Grupo's customers belong to the public sector and they announce the projects to be carried out by public tender. The end of 2018 was the first time that the Government issued tenders for cybersecurity projects in English. This key fact led S2 Grupo to participate in the tender and present an offer in the field of health.

European Union: UK, France, Italy, Austria, and Poland

In these European countries, the presence of S2 Grupo is limited to some sporadic projects conducted in recent years. This has been possible thanks to framework agreements among S2 Grupo and different private companies, due to European harmonization.

China, Australia, and South Africa

S2 Grupo has conducted different cybersecurity projects in China, Australia, and South Africa. The origin of them was, in the three countries, the traction effect from Spanish loyal customers of the company that opened different subsidiaries and wanted S2 Grupo to continue being its security provider abroad. In the case of South Africa, the customer opened a manufacturing plant there.

Israel, Romania, and Germany

These three countries have been studied and visited by S2 Grupo but at the end they did not result in a positive outcome. There were small business opportunities identified there. The legal barriers and certifications did not allow major negotiations in these countries at a first glance. However, they will be studied again in the short run because of new opportunities that are currently arising.

Proposal of an internationalization strategic model based in Lean Start-up

First of all, it is important to understand different assumptions and lessons learned from the internationalization process of the company. These should be considered when creating the internationalization model based on the Lean Start-up methodology.

According Ries (2011), the process of strategy building should follow the sequence create – measure – learn. Instead of making complex plans based on many assumptions, constant adjustments can be made with a flywheel circuit, which is the core of this method. It is really important to constantly measure along the process, in order to evaluate every stage and learn from them. Different countries demand tailored products and services according to local requirements. Therefore, flexibility and adaptation capabilities should be trained inside S2 Grupo.

Through this steering process, it can be learnt how to know if the time has come to make a drastic turn (*pivot)* or if the company should persevere on the current path. Moreover, a quick summary of Lean Start-up method could be: *Fail fast and cheap* (Ries, 2017). For this reason, the internationalization strategy proposed will reduce invested resources to the maximum with the aim of increasing efficiency and ROI. Neither commercial offices nor subsidiaries will be opened in the foreign country during the process. The fieldwork will be conducted during short business trips and meetings will be scheduled at clients' offices. Furthermore, planning an international expansion involves going step by step. The goals should be established and accomplished in sequence, because tracking is needed in order to measure (Jeive, 2019).

It is also important to understand the importance of increasing brand awareness: this is a real key success factor when considering internationalization strategies. S2 Grupo should continue investing efforts and time building its reputation in the cybersecurity sector in order to gain expert power and be considered as a baseline European company. This could be achieved by increasing its presence at international events and fairs or exporting their cybersecurity management club to other countries and regions. Furthermore, their efforts in Corporate Social Responsibility will enhance their good reputation and increase brand awareness.

For this reason, a temporary plan for an internationalization model, based on the 24-step process proposed by Bill Aulet in *Disciplined Entrepreneurship* (2013), has been developed.

Aulet (2013) gave an indication of the process of launching a successful start-up. Wickramasinghe and Wickramasinghe (2017)

understood the basis for strengthening the international process based on lean philosophy. In this case, a lean entry method in a foreign market based on 8 steps will be proposed.

Step 1: Market Segmentation and Study. The first step of this model aims to identify potential business opportunities in foreign markets. It involves a primary part of desk research in which the final clients should be identified. Once this part has been completed, it will be necessary to do some field work in the foreign market and talk with potential clients. The intention should not be to convince or to sell the brand of S2 Grupo but to obtain information about the market and empathize with them, with their needs and problems.

Some questions to be answered are:

1 Who specifically would be using the products?
2 What is the actual value that the end user would gain from the use of the products? A cost saving? Additional profit?
3 Who are the most influential customers that others look to for thought leadership and adoption of a new provider?
4 Which barriers do we have? (language, cultural distance, legal risks. . .)
5 Which partners will be needed to work with to provide a solution that integrates into the customer's workflow?
6 Who is making similar products or offering similar services?

It is recommended to organize all the obtained information in a matrix, considering potential markets and influence factors in rows and columns respectively, and to establish a rating system to them. Between six and twelve market opportunities may be identified.

This first step will last eight weeks in total: two weeks of desk research from the office in Valencia plus a total of six weeks in order to do fieldwork with local clients in the different countries. In addition, this step will be common for different countries so it can be considered as a first stage in the internationalization lean strategy of S2 Grupo (Zanger, Padhi, & Wagner, 2018).

Step 2: Select a Beachhead Market and calculate the Total Addressable Market. The higher the total score in the first step, the more suitable the market for S2 Grupo. Moreover, it is advisable that the Beachhead Market is a culturally close market with previous experiences or references at the beginning. The chosen market should have these three conditions:

1 The clients are interested in similar products and services.
2 Their value expectations are similar.
3 'Word of mouth' is given among the clients of that market: they are used to give and consider purchasing recommendations. This is a key element that will lead to scale efficiencies and therefore gain a chain of potential customers based in trust and references.

This step is the evaluation of the first one. It will be conducted in two weeks and at least five clients with similar expectations should be identified (*the early adopters*) (Chesbrough & Crowther, 2006). At this moment, Interns or Junior Salespeople from the local country may be hired in order to gain market knowledge and overcome language barriers, with a reduction of the investment due their lack of accumulated experience. It could be the *lean* way to perform deeper market studies (Bailetti & Zijdemans, 2014).

Step 3: Determine the Customer's Decision-Making Unit and Map the Process to Acquire a Paying Customer. A deeper analysis of the Buyer Persona should be done. It is important to understand the emotions and feelings of the client from his/her purchasing behaviour. The mentioned *customer obsession* is a fundamental aspect of the digital transformation and should be considered throughout the process (Zaheer, Breyer, & Dumay, 2019).

It is important to discover how the client makes purchasing decisions, and the influencers throughout the entire process. Moreover, it will identify facilitating factors or bottlenecks in the purchasing process, which might be also solved by employees having changed their mindsets (Hussain et al., 2018). Legal barriers, bureaucracy, incipient digital transformation of the companies, and payment authorization are examples of common restrictions, which vary among different countries and regions, according the previous experience of S2 Grupo. One week may be sufficient for this step, which should be validated analyzing the cybersecurity concerns and purchases in the destination country. With this aim, attendance at cybersecurity fairs and events is also recommended.

Step 4: State the Value Proposition and Competitive Position. This step should describe how the client discovers S2 Grupo, creates a relationship with the brand, uses the cybersecurity products and services, pays for them and becomes an ambassador of the brand. Afterwards, it should be determined how the competitive advantage of S2 Grupo becomes the perceived value that the customer receives. Therefore, a validation of the value proposition in relation to the local competitors will result in the necessary modifications for being competitive – this will last two weeks.

At this point, more fieldwork will be needed. A commercial visit to the identified customers should be scheduled in order to do *beta testing* of simple products and services. S2 Grupo should try to receive as much feedback as possible in order to quantify the modifications needed for product-market adjustment and to arrive at the first turning point: to continue developing or to pivot. According to the management of the company and several studies (Williams Jr et al., 2019), it has been established that if a minimum of four clients do not validate the value proposition and MVP, the company should go back to step 2 and select another beachhead market.

Step 5: Product Development. After the first validation, the feedback received should be thoughtfully analyzed and the products modified according clients' demand (Williams, Smith, Aaron, Manley, & McDowell, 2019). The environment is changing and volatile, so an iterative and incremental process starts now, with the aim of obtaining new simple high-quality versions of the products and services that the market needs – this step will last three weeks.

Step 6: Test Hypothesis. Having arrived at this point, it is essential to identify success assumptions regarding the previous steps. Cost provision and the client acquisition process are the most delicate and relevant hypotheses to test. The estimated budget should be considered in order to decide if it is worth continuing or whether it is better to come back – this step will last one week.

Step 7: Identify New Early Adopters. In this step, it is necessary to identify new clients and test the products developed with them. Some quantitative interviews will then be conducted in order to check which parameters, features, and concerns are outstanding (on a scale from 0 to 10). The clients which give higher scores will be analyzed: sector, nº of employees, digital maturity level. . . These clients will become the first brand ambassadors in the country. The return on investment of these clients should be calculated as well – this step will last two weeks.

Step 8: Accelerate a Clients' Chain. After suitable identification of the first clients is made, the aim of the company is to acquire new clients in the country in a short period of time. For this aim, the collaboration of previous satisfied clients that guarantee the reliability and trust of S2 Grupo will be needed. In the following two weeks, each client will try to recommend the company to a partner, in order to get a 10% discount on managed security services of S2 Grupo. This process will continue several times in order to increase the number of clients in the country. At the same time, S2 Grupo must enhance their brand awareness in this specific country with corporate activities and an active presence online in order to create a strong presence and a community in the new country. Networking activities, free training and trial sessions would be some ideas to start with.

Conclusions

The aim of this final section is to consider all the information explained through the development of the paper and highlight the evidence of improvement in the light of the corporate strategy of the analyzed company. The internationalization strategy proposed consists of an eight-step temporary model through which a cybersecurity company will be able to check quickly their value proposition in new countries. In a period of between six and seven months, the company will able to test the feasibility of entering determined new markets and make optimal efforts to gain its first customers there. Therefore, the profitability of operations will increase.

From the academic point of view, some conclusions could be derived from this research process. First of all, this work gathers a review of the principal contributions from Lean Start-up Methodologies and applies them to the current situation of an established company such as S2 Grupo. A review of internationalization strategies and considerations in international business is also conducted and applied to the cybersecurity sector. Therefore, this paper enhances the existing literature on the elaboration of international strategies with Lean Start-up methodologies. In addition, the internationalization model proposed in this study has not been previously explained and there is a lack of empirical studies about internationalization of cybersecurity companies.

From the managerial point of view, the principal benefits and implications are in terms of time-cost benefits for the company. They can be understood in the following way: lower investments in infrastructure and business trips, avoidance of sales expert commissions, iterative product development with simple core functionalities, time reduction of the validation of a new country and a general decrease of opportunity costs. The study of the innovation of the company, and the review of the internationalization process (focusing on the particular situation of each country in which the company operates), has allowed the acquisition of an extended overview of the processes, state of the art and internal mechanisms of the company. It is also important to highlight that with this tailored model, the internationalization of the company will become a structured and procedural mechanism with a clear strategy and, the most important item, performance measures that allow the management to check after each step the feasibility, budget, and likely success of the project. It would be advisable to start accelerating them and boosting coordination among departments with the new organization structure of the company. For example, it is recommended that employees have more decision-making power in daily tasks in order to avoid bottlenecks and misunderstandings among different middle-managers. Moreover, all the employees should possess digital skills and be taught in innovative processes. These implementations will increase the effectiveness of the digital transformation, among others, of cybersecurity companies.

These facts are very much linked with the internationalization plan based in Lean Start-up methodologies proposed. Internationalization cannot be an isolated project conducted only by some employees, but rather the entire organization should be trained in these skills, the mindset, and change management should be implemented: a clear vision should be established, priorities must be set in advance, the action plan should be communicated, and the main goals and evaluation systems must be clear for all employees involved in the process, not only at managerial levels. However, the management of any company must ensure that the organizational culture remains in each international movement. The suitable strategy implementation of this internationalization model will combine the particularities and market singularities of each country with the strong culture and values of the studied enterprise, such us trust, reliability, integrity, and confidentiality. This will lead to an increase of high-quality references from previous clients and therefore to a increment of the clients interested in a new market. These changes will align the high innovation in product that the company demonstrates to outstanding organizational innovation, which is needed for guaranteeing sustainable success in this changing and turbulent environment.

The principal limit of this study is the lack of empirical validation in the market. Due to time constraints, it has not been possible to apply the internationalization strategy derived from this research process. In the months following the publication of this paper, the company will start considering the model proposed and implement the mechanism explained during the paper in a new country. It would also be interesting to validate the internationalization method measuring the performance of cybersecurity companies in the European market. This would be an interesting research line for the future in which quantitative results could be extracted from the analysis of different companies of the mentioned sector.

For all reasons above, it can be stated that the value proposition of this paper is verified. The objectives established have been accomplished during the elaboration of this project and the evidence of improvement in the company is highlighted in several ways.

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