

A process for start-ups growth through expansion into emerging markets

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Abstract

One of the biggest challenges faced by many tech start-ups from developed markets is to have validated market-fit products/services and to see their solutions implemented. In several sectors, stringent regulations, and the law of handicap of head start at home can be hurdles that limit the development and even the survival potential of these start-ups.

Tech start-ups seeking implementation, learning, and legitimacy may have a solution in expanding into emerging markets. Emerging markets offer both business opportunities in sectors in need of new technologies as they are “fertile grounds” for developing and testing internationalisation business models.

We present here a process designed to help tech start-ups to identify, access, shape and seize these opportunities and to overcome their own specificities and emerging markets specificities. The three phases of the proposed process cover entry node concept, partnership, and business, operating and revenue joint models’ development. Design Science Research Paradigm is used for the design and evaluation of the process. To show the relevance of this process, a case study on the expansion in Morocco of a Dutch start-up active in e-health is used. The study shows the importance of the process for the embeddedness in a local relevant value network with a relevant adopter’s system, a key enabler to achieve time and cost-effective expansion in that specific business and institutional contexts. A pilot to assess the proposed models and evidence of benefits is under development.

To boost their chances of growth tech start-ups from developed markets should consider expansion into emerging markets in their strategy. It would be beneficial that policy makers adopt a strategy by which to assist tech start-ups in accessing value networks in emerging markets. It is also important for policy makers from emerging markets to consider developing schemes to attract tech start-ups from developed markets.

Keywords: Start-ups, technology, design, internationalization, emerging markets, institutions, resources, network, transaction costs, Design Science Research, case study

Introduction

Start-ups as Small Medium Enterprises (SMEs) play a crucial role in fostering competition, inducing innovation and supporting the emergence of brand-new sectors (Colombelli et al., 2016). Unlike Multinational Corporations (MNCs), start-ups, as SMEs, have the ability to launch rapidly new products and services, to continuously improve them, and to change them according to the response of the customers. Unlike MNCs, SMEs and start-ups can be satisfied with a small-scale local replicable business opportunity in small cities or even rural area and then expand into larger cities later.

Rapidly replicating and scaling up is important for start-ups to grow. It is often a race against time. Unfortunately, many start-ups and even scale-ups fail before reaching the maturity level. 42 % of them fail because of "lack of a market need for their product" (Mansfield, 2019). Many innovative, potentially game changers tech start-ups from developed markets, may find themselves in this situation as there is a risk of facing two tough hurdles at home:

1. The law of the handicap of the head start,
2. Stringent regulations that lengthen the go-to-market process.

These two hurdles may be good reasons for these tech start-ups to consider internationalisation of their business. Expansion into emerging markets with relevant business opportunities and less stringent regulations may offer a way out of the stalemate. These opportunities can be found in offering solutions that enable affordable access to quality services such as healthcare, education, clean drinking water and energy. Next to reaching early adopters and speeding up their development, the goals of this tech start-ups expansion may be validation of their product-market-fit, acquiring new skills, learning, developing their implementation process.

Using terms from 'dynamic capabilities' concept (Teece, 2007), the challenge for a start-up would be in sensing relevant emerging markets and accessing, shaping and seizing business opportunities there in a time and cost-effective way.

Emerging markets are nations' economies experiencing increasing incomes and high and rapid Gross Domestic Product (GDP) growth. Next to offering new business opportunities, they challenge existing business models from developed markets and are then "fertile grounds" for developing and testing new internationalisation processes (Hoskisson et al., 2013; Wright et al., 2005). The goal of this paper is to propose a process that could be used by tech start-ups or scale-ups for their expansion into emerging markets. This process takes into account the following specificities of start-ups and of emerging markets.

Start-ups specificities may be summarised as:

- Creative: They create new product categories and new business models (Teece, 2012).
- With liabilities: Next to the lack of resources, start-ups have four important liabilities for internationalisation: liability of smallness (Aldrich & Auster, 1986), liability of newness (Stinchcombe, 1965), liability of foreignness (Johanson & Vahlne, 2009; Zaheer, 1995) and liability of outsidership (Johanson & Vahlne, 2009). These liabilities raise the issue of legitimacy of start-ups, i.e., being perceived as worthy, competent, and effective (Zimmerman & Zeitz, 2002)

- Without relevant track record of accomplishment and of assets: this gives the perception that they may not /cannot deliver sustainably. As a consequence, prospective customers in emerging markets, often SMEs or governments, tend to prefer doing business with large, well established western companies.

Emerging markets specificities may be summarised by the characteristics described by Xu and Meyer (Xu & Meyer, 2013):

- Less efficiency due to imperfections in the institutional framework, also known as institutional voids (Khanna & Palepu, 2010; Larimo et al., 2015; Meyer & Grosse, 2018), less transparency, more extensive information asymmetries, and higher monitoring and enforcement costs,
- Governments and government-related entities are not only setting the rules but are active players in the economy. These markets have often what can be described as government driven business,
- Network-based behaviours are common, in part because of the less efficient markets, but arguably also due to social traditions,
- Risk and uncertainty are high due to high volatility of key economic, political, and institutional variables.

Another challenge is related to the psychic distance defined in terms of factors such as differences in language, culture, political systems, etc. which disturb the flow of information between a firm and the market (Vahlne & Wiedersheim-Paul, 1973).

One can then ask the question: given these characteristics, is it worth the effort, for a start-up, to take a risk to lose focus on their business objectives at home and go to an emerging market? The careful design of a tailor-made process for guiding the expansion process is expected to be instrumental in achieving the targeted development and growth objectives at affordable costs and in short time. This gives rise to two questions:

1. Is this process useful (relevance)?
2. Can it be validated in an emerging market context and replicated to home country context?

To cover the study of its relevance and of its evaluation, Design Science (DSR) paradigm (Hevner, 2007) is used. By definition, the core of a DSR process is to design a purposeful artifact to address a (previously identified) relevant problem (Nunamaker et al., 1990). DSR generates generic knowledge, but typically not universal knowledge. It is rather mid-range theory, only valid for a specific application domain. To generate generic knowledge, Hevner (Hevner, 2007) developed an approach based on a complementary three cycles model (Figure 1.a):

1. Design cycle- to iterate between the activities of developing and evaluating the design artifact,
2. Relevance cycle, to bridge the contextual environment with the design science activities,
3. Rigour cycle to connect the design science activities with the knowledge base.

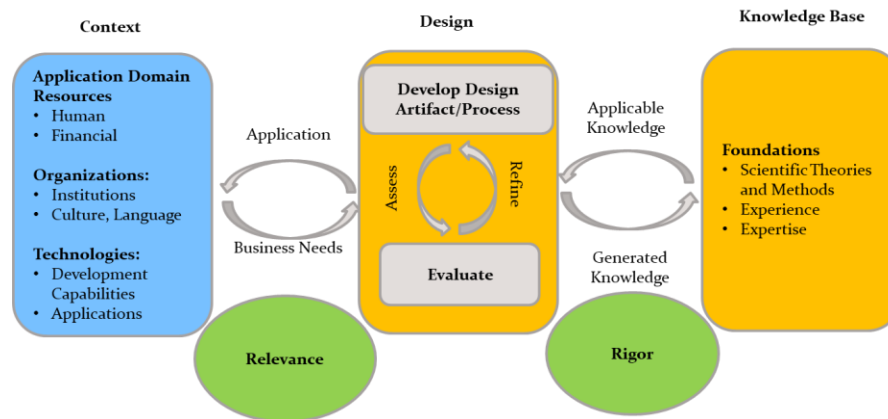


Figure 1.a. DSR three cycles model (Hevner 2007)

Seizing opportunities in emerging markets

The specificities of emerging markets on one side and of start-ups, their need for rapid return on investment on the other side lead to limited options for emerging markets entry modes. An incremental process as proposed by Cavusgil (Cavusgil, 1980) and Johanson and Vahlne (Johanson & Vahlne, 1977), for example, may prove to be inadequate. To speed-up sensing and shaping relevant business opportunities in an emerging market, to reduce related costs and risks, it is important to view them from the points of view of transactions costs, institutions, network, and resources perspectives. Institutional theory (North, 1990), internationalisation theory (Johanson & Vahlne, 2009; Sandberg, 2013), transaction costs theory (Williamson, 1985; Yousuf, 2017), network theory (Costa et al., 2017) and resource-based theory (Barney, 1991; Olugbola, 2017) will constitute the knowledge base of the design of the process considered here.

Transaction costs and institutions

Transaction costs (Coase, 1937) are a critical factor in market and entry mode selection. There are ex-ante and ex-post transaction costs. Ex-ante transaction costs are the costs of searching, drafting, and negotiating a contract. Ex-post transaction costs of contracting are the costs of monitoring the other party to ensure that the agreed contract is fulfilled, costs of corrections of misalignment of incentives, costs of enforcing the contract if it is not fulfilled, bonding costs of effecting secure commitments, and costs of handling ex-post disputes. They may also include transportation costs (Petrovic & Krstić, 2011). North states that due to institutional environment transactions costs are higher in developing countries than in developed countries (North, 1990). To create a competitive advantage or to remain competitive firms must find ways to minimize transaction costs as much as possible. Many researchers, such as Dyer and Yousuf (Dyer, 1997; Yousuf, 2017) have investigated how firms decrease transaction costs. Williamson (Williamson, 1975) suggests that transaction costs reduction is one of the goals that firms may pursue by going in partnerships. For a start-up, lacking financial resources, finding ways to avoid or reduce these transaction

costs is key. Reduction of transactions costs could be a sufficient argument to consider partnership as an entry mode when expanding into an emerging market.

Resources

Another argument to consider partnership is to have access to leverageable, complementary resources. For a tech start-up, lacking resources by definition, it is not the resources themselves that can create a sustainable competitive advantage as stated by the resource-based view (Barney, 1991), but rather how it uses capabilities and technologies to create a unique value. Knowledge and implementation of innovative technologies are the assets of interest to a potential value network and its adopters' system as defined by Nieuwenhuis (Nieuwenhuis, 2018). Studies of supporters of the transaction costs theory encompass the idea that networks exist because this is the only affordable way that some organisations can gain access to resources (Oliver & Ebers, 1998). To avoid investment in resources for their expansion, start-ups must seek ways to be embedded in a relevant value network to gain access to resources (Chung et al., 2000).

Network

Vahlne and Wiedersheim-Paul (1973) state that firms are expected to enter markets with successively greater psychic distances (Vahlne & Wiedersheim-Paul, 1973). As a tech start-up from a developed market, entering an emerging market with a large psychic distance is close to being a born global firm as defined by Knight and Cavusgil (Knight & Cavusgil, 2004), namely "entrepreneurial start-ups that, from or near their founding, seek to derive a substantial proportion of their revenue from the sale of products in international markets." This work aims to design a time and cost-effective three phases process that is expected to help tech start-ups to succeed in expanding into emerging markets. Figure 1.b. gives the DSR model used here for the design and evaluation of the process. For the evaluation of the designed process, case studies are used. (Costa et al., 2016; Hak & Dul, 2008).

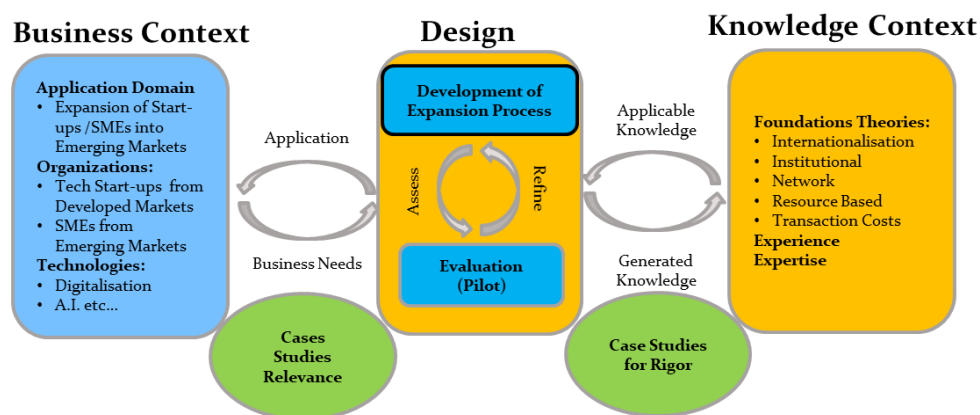


Figure 1.b. DSR three cycles model (Hevner 2007) applied to the design of the process of expansion of tech start-ups into emerging market

The proposed process design has three phases (cf. Figure 2), namely:

1. Assess and access
2. Partner
3. Design, test and validate an implementation process and related practical joint models, namely the business model and its operating and revenue components.

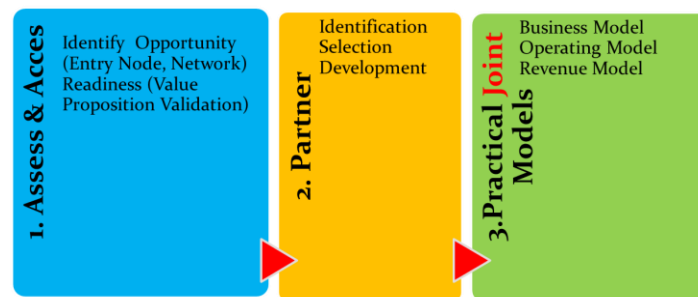


Figure. 2. The three phases of the proposed process for expansion into emerging markets

The first phase of the process is an assessment of business goals and own readiness to expand, of potential opportunities in a target emerging market and of and relevance to potential partners there. Many questions have to be answered in this step: How to know that there is a relevant opportunity that fits with the business goals? Does the product or services fit with the local needs and context? Are the potential required adaptations feasible and capabilities and resources to do them available? These and other questions can be answered through a value proposition validation process. This is key for the success of the implementation of the proposed solution, i.e. its embedding in practice and its use as intended. Greenhalgh states that this success is dependent of the interplay between three core elements (Greenhalgh, 2017):

- Fitness with the context where it is implemented,
- Level of facilitation of the implementation process. This is linked to the readiness of the value network to invest in equipment and in staff and customers training for a smooth and a swift solution integration,
- Evidence of cost effectiveness and benefits of intervention in the given context.

This value proposition validation is essential for the assessment of these three elements. For conducting this value proposition validation in the target emerging market, it is important to be embedded in a value network with compatible goals, complimentary capabilities and resources to gather insights and analysing them. This embeddedness is the role of the entry node. Identifying and engaging the right entry node to the right value network in an emerging market is key. Having an entry node and its value network guiding the process of market entry (Lopez et al., 2009) will speed up the value proposition validation.

The second phase of the process is the identification, selection and development of a local partner. The goal of this step is to bridge the start-up expansion goals to potential development and growth opportunities in the targeted emerging market. Potential partners should have the formal and informal local networks, the resources, the

capabilities to achieve the development goals. Several authors give detailed partners selection processes (Bamford et al., 2003; Cavusgil et al., 2002; Hitt et al., 2000; Schaan & Kelly, 2007). Given the institutional and cultural contexts in emerging markets, next to business fitness, a good process for building a partnership focuses first on building relations and trust. In transaction costs economy, and certainly in emerging markets, two main sources of transactions costs are bounded rationality because of information complexity and informational uncertainty and opportunistic behaviours (den Butter, 2012). Opportunistic behaviours refer to “self-interest seeking behaviour”. This is unlikely to happen when the selected partner is a member of the chosen value network. This implies low risk for the time and money to be invested in shaping and seizing business opportunities.

The third step is to develop the practical building blocks of the expansion process, namely the business model and mainly its operating and revenue models. Early assessment of evidence of cost effectiveness and benefits, context fitness and the level of facilitation by the value network is key for developing a business model that sustainably bridges adopters to the value network and delivers expected social and financial benefits. This step is to be done together with the partner as it helps to develop and align on a common vision, map out operating practices, on how expenditures will be done and how income will be generated, managed and eventually shared within the value network.

The joint business model design framework given by Figure 3 is inspired by de Man’s alliance design framework (de Man, 2013). The successful co-development of this model requires the consideration of the local business and institutional environments and good communication and exchanges interfaces between partners to manage culture, language differences and resources. The co-development process helps checking partners commitment and cooperation levels, building trust. If the partners cannot be open about their own business models and agree on a joint business model, namely on the joint value proposition and operating and revenue models, further collaboration development does not make much sense. Jian and Hansen (Jiang & Hansen, 2016) aggregated the nine building blocks of the business model canvas proposed by Osterwalder and Pigneur” (Osterwalder & Pigneur, 2010), into four blocks, namely Value Proposition, Value Creation, Value Delivery and Value Capture (See Figure 4). Basic definitions of operating and revenue models are given below.

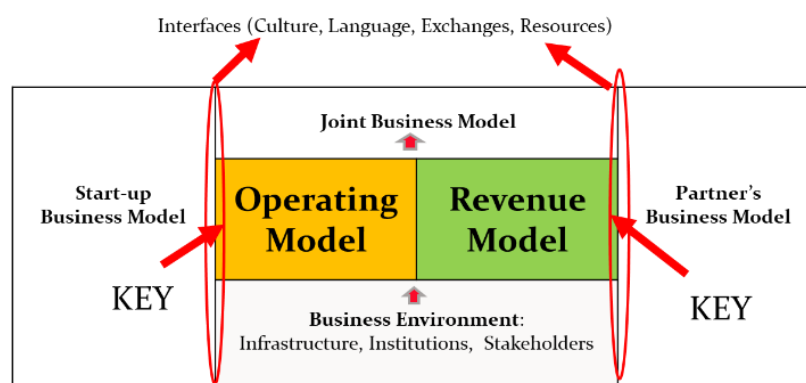


Figure 3. Partnership and joint business model design framework

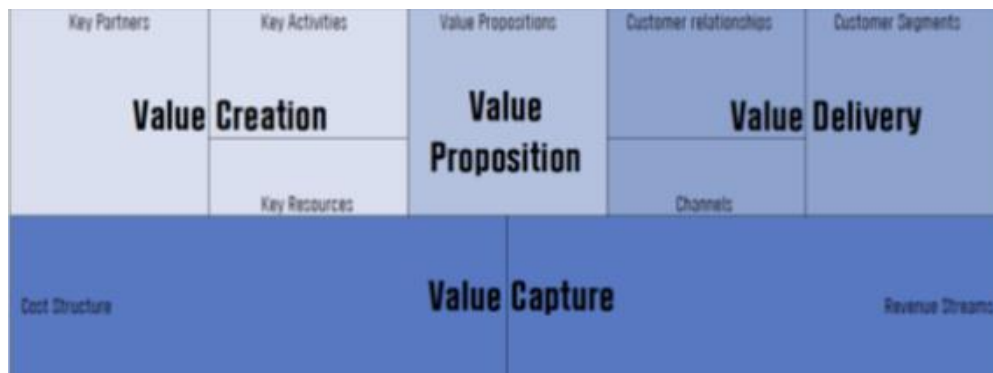


Figure 4. The four aggregated blocks of the business model canvas (Jiang & Hansen, 2016)

Operating model

Vahlne and Wiedersheim-Paul (1973) state that firms are expected to enter markets with successively greater psychic distances (Vahlne & Wiedersheim-Paul, 1973). As a tech start-up from a developed market, entering an emerging market with a large psychic distance is close to being a born global firm as defined by Knight and Cavusgil (Knight & Cavusgil, 2004)

Operating models can be seen as the conceptual components that serve as a bridge between strategy and effective execution (Blenko, M., Garton, E., Mottura, L., 2014). The operating model will help to determine who contributes what. Flows of materials, information, money and staffing have to be carefully designed and managed. The design and optimisation of the value network is then key for having an effective operating and revenue models.

Revenue model

The revenue streams represent the money a company, here the value network, generates from each customer segment. Given the weak institutional environment, the high share of informal sector and of the large low-income segment in emerging markets, challenges in this revenue model are pricing and the mode of payment. Taking this into account, careful identification of the first adopting system is key for the success of the implementation and subsequent replication and scale up phases. Readiness and preparedness of the value network to implement a new technology requires evidence of benefits for the value network and for its adopter's system. It is important to have a quantifiable validated operating and revenue models. These models should be used to assess activities of the value network members and their related costs and benefits. This assessment is an iterative process that will help to eliminate activities with poor value – cost relationship, and ultimately optimise the value network configuration so that self-sustaining business model is possible (Gamble et al., 2004). This not an easy task.

Kimble (Kimble, 2015) gives five local for local telemedicine case studies in developed countries and five in emerging countries. Most of the business models described there are not self-sustaining and require some sort of fee from the user and rely directly or indirectly on external funding from governments or non-governmental organisation. Zipline (Wikipedia contributors, 2020) an American start-up created in 2011 and muted into a drone company operates in four developing economies (two in Africa, two in Asia). Zipline succeeded to go beyond small-scale projects to replication and scale up through securing important contracts with governments to develop distribution centres for delivery between large hospitals and health facilities or delivery of emergency medicine.

Evaluation of the process

Application Context

For the operationalisation and the evaluation of the proposed three phases process the case study considered here is the expansion of a Dutch e-health start-up, LIVV, into Morocco. Founded in 2011, in partnership with a hospital in the Netherlands. LIVV focuses on the provision of care at distance to patients. One of the product-service bundles provided by LIVV is a mobile arrhythmia monitoring system based on: a) a 1-lead electrocardiogram (ECG) measurement device (physical product, referred below as Heart Event Recorder), b) applications to be installed on patients and/or on care providers smartphones, c) an online platform linking care providers and their patients. LIVV is owner of the last two elements. The first one is a third-party sourced product. This system enables a 24/7 access to cardiology care (explicit service). LIVV proposes a concept of a Cardiology Call Centre (CCC) based on mobile arrhythmia monitoring system above. Given its slow development in the Netherlands, for speeding up the validation and development of their CCC offering, LIVV considered looking for early adopters outside the Netherlands. Morocco was among the targets.

Patients in Morocco, as broadly in emerging markets, face two hurdles for access to affordable and quality care:

1. Logistics costs in time and money and their high share in burden and the total cost of access to care: traffic congestion in large cities, lack of reliable access to transportation, inadequate transport infrastructure in rural area.
2. Shortage and ill distribution of specialised healthcare facilities: Specialised medical staff and facilities such as in clinical specialities and in clinical analysis laboratories are concentrated in few urban areas.

All this hinders continuity of care and negatively affects patients' outcomes.

Smart combination of technology and transformation of health care delivery systems can give access to care to more people than any other kind of traditional healthcare systems (Tas, 2018).

To assess, access, shape and seize this potential opportunity in Morocco, the three phases of the process described above are applied.

4.2 Phase I: Identify, assess, access

The latest official figures, published by the Moroccan ministry of health in 2019 show with that 54% of the doctors spread out across the country work in the private sector (Minsitère de La Santé Marocaine, 2019). For implementation

acceleration reasons, the choice is made here to focus on the private health sector where the potential value network and the adopter's systems are easier to identify and quicker to access than in the public sector.

LIVV used as entry node a professional living in the Netherlands with Moroccan roots, a business experience in Morocco and with a good link to cardiologists running private cardiac clinics in Casablanca. Cardiologists approached where first sceptical to some degree given the small size, age and experience of LIVV but have shown interest in the CCC concept, the learnings it brings, its combined product-service model and its value proposition, namely:

“Wherever you are, live with the assurance that professional and medical help is 24/7 within reach.”

To assess the benefits, the reason to believe in the value proposition and its discriminator, it was proposed to gather insights on the receptivity of the adopters' system here formed by cardiac professionals, also clinics owners, and patients. This insight gathering was done through a series of interviews with cardiologists and their patients. The participants in the study have been nine (9) cardiologists and forty-one (41) patients. The cardiologists were identified through an influencing cardiologist from the value network. Patients were randomly chosen from the waiting rooms of interviewed cardiologists. The interviews were carried out using a set of open-ended questions. An interview guide was provided for each of the cardiologists in advance. Given the potential of high level of illiteracy among patients, a direct interview with closed questions was used.

From the interviews with cardiologists one can draw the following conclusions:

1. **Benefits:**

For cardiologists, benefits are mainly related to:

- Enabling access to a wider population mainly to patients living far (extension of geographical reach through offering offsite care),
- Ensuring continuity of care for patients with chronic conditions that requires frequent inspections and treatment,
- Filtering patients before coming to the clinics to focus on patients suffering from heart diseases that need direct contact,
- Reducing emergency room visits.

2. **Reason to Believe:** The CCC concept being under test by renown cardiologists and general practitioners in the Netherlands gives confidence in it. Evidence of financial benefits are required.

3. **Discriminator:** Access to a platform that can be managed and controlled locally involving local cardiac care providers, institutions and IT capabilities differentiates this concept from exiting ad-hoc solutions.

The main concerns expressed by interviewed cardiologists about the concept are:

- a. **Easiness of use for elderly:** the elderly (illiteracy, convenience) may have difficulties to independently use devices and to familiarize with non-direct contacts with care providers,
- b. **Pricing:** The total price of using the CCC must be affordable for all patients as healthcare expenses are mainly financed by out of the pocket payments,
- c. **Payment modes:** Currently, payments are mainly done in cash directly at medical cabinets,
- d. A law that will enable cardiologists to be paid for the service provided at distance exists but not yet operational,

- e. **Revenue model:** It is important to give evidence that this model is financially attractive for care providers and balances efforts and benefits?
- f. **The Heart Event Recorder is a 1-lead ECG.** It may be enough for arrhythmia monitoring but having at least 3-leads would be better.

All participating cardiologists found that the CCC concept meets an urgent need, that the timing was good to develop it and were willing to participate to a pilot as a case study.

From the survey of the forty-one (41) patients, the following conclusions are drawn:

- The CCC is found to be a good solution for easing access to cardiac care and for its continuity. It will help to reduce the hassles of logistics, to overcome its inconvenience and its significant share in the total cost of access to care for patients and their accompanying persons.
- The costs of use of the mobile device and of the CCC should offset the total cost of logistics of the patients and their accompanying persons (transport, stay, time, ...).

4.3 Phase II: Partnership

The value network includes four cardiologists and three general practitioners LIVV and medical appliance distributors. On the adopters' side one has patients and staff members of cardiology clinics and general practitioners' offices. For the design of the Cardiology Call Centre in Casablanca (CCCC), of the related business, operating, revenue and implementation models, identifying a local partner for LIVV linked to the value network was a must. The following list of criteria was established together with cardiologists:

- a good network in the healthcare providers ecosystem,
- a close working relationship with cardiologists and general practitioners,
- a good knowledge and experience with medical devices regulations and registration institutions and processes in Morocco,
- a relevant collaboration experience with European companies,
- an infrastructure that leverages modern digital technologies,
- the following capabilities or be willing to develop them:
 - providing services to care providers and patients,
 - training in the use of the mobile arrhythmia system,
 - call centre operating capabilities.

Based on these criteria, the identification of a potential partner for LIVV for developing the CCCC led to the only distributor of cardiology related medical appliances based in Casablanca. He was interested in developing telemedicine activities in Morocco. Both LIVV and the distributor agreed on considering an informal partnership for developing first a pilot for the CCCC. This partnership will be supervised by cardiologist from the value network. This important to manage risks sus as opportunistic behaviour. At this phase they agreed to postpone financial and legal arrangements until after the successful completion of the pilot project and focus on decision making process and on

who does what for the pilot to demonstrate evidence of cost effectiveness and benefits of the CCCC (Bamford et al., 2003). Until then, every member of the value network will finance his own activities.

4.4 Phase III: Develop, test and validate practical joint models

To test and validate the operating and revenue models, to develop a fit for use pricing strategy and payment model, to optimise the value network configuration for the replication phase, to test the exchange interfaces between LIVV and the distributor-partner and to assess patients experience it was agreed to design and carry out a CCCC pilot. LIVV and the medical appliances distributor agreed to work together on using the pilot to design a joint business model for the CCCC using the framework given by Figure 5 and on developing interfaces required for a smooth communication and exchange between the two organizations.

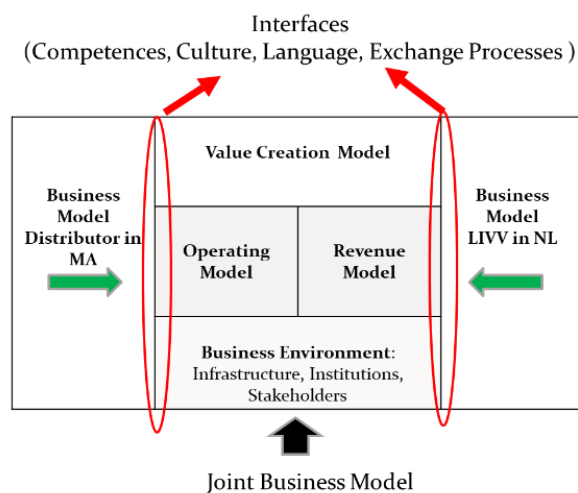


Figure 5. Partnership and joint business model design framework for CCCC

4.5 Operating model

The operating model must give insight in the flow of materials and money, and the data flow between all parties involved, namely the value network and adopter's system. It needs to simultaneously drive value, provide compelling implementation experiences to value network and adopters' system members and serve patients at competitive total cost of access to care and better outcomes. Several operating model scenarios were drafted taking into consideration the staffing, the integration of digital technologies, local mobile communication capabilities and revenue models scenarios.

4.6 Revenue model

Cardiologists advised for a revenue model in which the patient purchases the heart event recorder, pays a subscription fee to get access to the online platform and for related consultation fees. 1-lead ECG reviews done remotely by CCCC care providers staff could be done at a lower price than that applied for a standard 12-lead ECG review done when visiting a cardiologist or a general practitioner. As preparation and measurements are done by the patient where he is, the review will cost less time to do. It could be done by a to-be-trained cardiology nurse under the supervision of a cardiologist. This advice defines di—facto the patients to be considered for the pilot. Considering that LIVV will not adapt the mobile arrhythmia monitoring systems to the required context specifications, the focus will be on mobile literate, self-paying patients from middle class or pre-middle class to keep affordability in check.

Capturing these revenues will require considering alternative patient payment collections as today cash payment at the time of service is the leading payment method in Morocco.

4.7 Pilot Design

Four cardiologists and three related general practitioners agreed to contribute to the CCCC pilot and to recruit thirty-five patients for it (five patient / participant). LIVV will deliver the required professionals and customers mobile arrhythmia monitoring systems. The distributor-partner will set-up the operations, including staffing, manage the revenues model and, with the remote support of LIVV, will monitor the pilot.

5.0 Conclusion

The results of this study provide several relevant contributions to the field of development and growth of innovative tech start-ups and scale-ups from developed countries through their expansion into emerging markets. The three phases process proposed here is designed to help tech start-ups to sense, access, shape and seize development opportunities in emerging markets in a time and cost-effective way:

- Engaging an entry node with knowledge and experience of both cultures and businesses of home and host countries to identify and embed a relevant value network linked to an identified accessible adopter's system is key. A combined product-service offering is important for this embeddedness. Given the potential weak legal enforcement of contracts, being embedded in a value network gives legitimacy as an informal institution and helps to avoid opportunistic behaviour of potential partners.
- Informal partnering with a member of the value network without any formal written agreement being signed but under supervision the value network, helps to avoid transactions costs incurred in ex-ante and post-ante transactions costs.
- Local validation of the value proposition, codesign and iterative tests of operating and revenue models and of a pilot are key assessment steps of evidence, context fitness and the level of facilitation by the value network of the implementation of the solution. They are key building blocks of a self-sustaining business

model. This helps also to reengineer and restructure the value network configuration so that a self-sustaining business model is possible.

- It is important to start as a business to business (B2B) project with a value network having an adopters' system members with a sufficient purchasing power and literacy to adopt the solution. Approaching adopters' segment with lower income members can be done in a replication phase. The large population in that segment in emerging markets gives a significant scale-up opportunity. A business to government model would be more adapted.
- The experience, learnings, legitimacy acquired are expected to ease the implementation process of the solution back in the home market.

The proposed process and learnings can also be used by technology-based SMEs.

5.1 Future Work and Challenges

Piloting is part of the rigorous evaluation of the proposed process. The pilot will be the one episode of the Quick & Simple DSR evaluation strategy (Venable et al., 2016). It will assess two aspects: a) that it works in a real situation (Shrestha et al., 2014), i.e., that the level of adoption and non-abandonment are high (Greenhalgh et al., 2017) and b) that it causes a significant improvement in tech start-ups development speed, learning and legitimacy through expansion into an emerging market.

It will be used to validate the joint business model and its operating and revenue models and to develop the required context-fit pricing strategy and payment model. It is also to optimize the value network configuration and deliver evidence of balanced efforts-benefits to each of its members. It prepares also for the replication beyond the first circle of adopters, in another context or with other start-ups will enhance the trust in its validity. The development of a case for a drone's start-up for using drones in the collection and delivery of test samples to medical analysis laboratories in Morocco is ongoing. Unlike the Zipline case (Wikipedia contributors, 2020) where the business model is Business to Government, the choice made here is to focus on B2B.

Once solutions concepts are proven, implementation, operating and revenue models for a self-sustaining business model are validated, reverse innovation may give tech start-ups legitimacy and is expected to ease the implementation of the solution at home.

5.2 Implication for Tech Start-Ups Managers

When there is a risk of slow development at home of a tech start-up from a developed market, it is relevant to consider expansion into emerging markets in its strategy. The process proposed here is expected to help start-ups managers to spot, assess and access relevant development opportunities, save time, avoid ex-ante and ex-post transactions costs and related risks, and speed-up their development and solution implementation.

5.3 Implication for policy makers

Given the difficulties for tech start-ups to access value networks in emerging markets, it would be beneficial for policy makers from developed countries to adopt a strategy by which to assist them in having access to relevant entry nodes at home. Immigrant communities offer valuable and untapped networking opportunities. It is also important for policy makers from emerging markets to consider developing schemes to attract tech start-ups from developed markets in order to promote the development of local innovative entrepreneurial ecosystems.

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