

10. (Gradual) Institutionalisation of Swissnex

Following the description of the instrument (previous chapter), this chapter analyses the *long-term career* of Swissnex. The (gradual) institutionalisation and the development of Swissnex are described by paying close attention to the inception phase (section 10.1). This is because it is assumed that key design principles were laid out during this phase. In addition, critical junctures throughout the instrument's career, which also led to changes in the instrument's composition (section 10.2), are identified. To summarise, adopting this historical perspective serves as a lens to explain Swissnex's current shape and provides an insight into the wider rise of SICs.

10.1. Genesis of Swissnex

In 2000, the development of what is today known as the Swissnex network gained public awareness with the opening of a “*Swiss House*” in Boston (swissinfo.ch, 2000), which at the time was better known as SHARE Boston (Swiss House for Advanced Research and Education) (European Commission, 2004). The emergence of SHARE Boston, then a novelty, must be considered in relation to the context and the prevailing situation at the time. Emergent societal megatrends created a window of opportunity and political momentum that enabled the idea to develop. A supportive political environment (i.e., SERI, the State Secretary and the Parliament) promoted the idea, acknowledging the need for new responses in changing times. Thus, the idea was welcomed and was consolidated in a way that led to the rise of a unique and distinct instrument, which also inspired many other countries (Germany among them). In addition, among the factors that were singled out in the analysis as determining and shaping the rise of the network, the role of policy entrepreneurs who had triggered this bottom-up initiative should be mentioned. In addition, a timely private investment made a difference. In other words, contingency aspects (i.e., the interplay of certain events which had a major impact) as well as appropriate timing seem to have been relevant in the instrument's early stages (for a definition, see section 4.1.3).

10.1.1. Societal Developments

The launch of SHARE Boston must be understood in light of two wider emergent societal developments at that time, which paved the way for this novel institution to arise: globalisation and internationalisation, as well as brain drain tendencies.

10.1.1.1. Globalisation and Internationalisation

The start of the new millennium was dominated by a peak in globalisation and calls for the internationalisation of higher education and research. Technological developments had gathered speed and new communication technologies, such as the Internet, had gained significance. This opened up new avenues for development, while changing current patterns of cooperation and thinking (cf. interview SNX3). A significant number of Swiss companies had, or were about to, set foot in the United States. Similarly, internationalisation had become a major (governmental) concern (cf. interview SIS4, Schweizer Bundesrat, 2002), and an increasing number of countries started to initiate internationalisation processes and devise strategies to account for this new interconnectedness (Huisman & van der Wende, 2005). Internationalisation efforts in Switzerland were scattered at that time, and consolidated internationalisation policies, not to mention examples of institutional presence abroad, hardly existed (apart from a couple of Swiss research institutes that were opened in selected regions (cf. Kleiber, 2000)).

In terms of an international institutional presence, the opening of SHARE Boston thus marked a new milestone (Schweizer Bundesrat, 2002). Furthermore, at that time, Swiss international activities largely had a European focus, and attempts centred on participating in European programmes (Hofmänner, 2018, pp. 30–31). Accordingly, it proved to be one of the key tasks of the newly appointed SERI¹⁸⁶ State Secretary, Charles Kleiber, to respond to these developments (interview SIS4) in line with the political framework conditions (i.e., cantonal policy, see section 5.2.4). In a similar vein, the Swiss Parliament at that time also acknowledged these

186 In 1997, Charles Kleiber was appointed State Secretary of the Swiss Science Agency, succeeding Heinrich Ursprung. Please note, the Swiss Science Agency was renamed later as what is now called SERI (SBFI) (cf. SERI (2020)). For simplification and consistency reasons, reference is made to SERI throughout this study.

changing environments and placed emphasis on formulating an appropriate response (Kleiber, 2021, p. 4).

10.1.1.2. Brain Drain

In the late 1990s, Switzerland was confronted with a brain drain situation, which was possibly reinforced by increased internationalisation developments (Simm, 2021; ThinkSwiss, 2010). It became apparent, for instance, that a significant number of Swiss scientists had moved to the Boston area to advance their careers (Lombard Odier, 2011; Marmier & Fetscherin, 2010; Swiss Federal Audit Office, 2016; swissinfo.ch, 2000; von Arb, 2004, interviews SNX2, SNX3, SIS4, SIS5). While the USA had always been considered a relevant destination for researchers worldwide (interviews SNX2, SIS4) and exchanges were not uncommon, it became evident that many scientists who had been educated in Switzerland chose to remain in the USA; this triggered a brain drain situation. A significant number of Swiss scientists resided in the Boston area (and its Ivy League institutions), while Silicon Valley also became an attractive destination for computer science graduates (Simm, 2021, p. 36). In combination, these two developments can be seen to have prepared the ground for further action.

10.1.2. Political Momentum

The megatrends of globalisation and internationalisation, and in particular the rise of the Internet, created political momentum and a political need to tackle these issues. The trajectory of Swissnex's development must therefore be understood in the light of increased political awareness of the importance of science and technology, in particular because Switzerland is a small country that had to find a niche for its international positioning. On the one hand, this aimed to eventually secure Switzerland's success internationally (interview SIS2), while on the other hand it was viewed as offering a new path to diplomacy by using it as a vehicle to showcase Switzerland and create visibility¹⁸⁷. Despite Switzerland's long-standing tradition of having science attachés at its embassies (cf. Jost, 2012) (see chapter 3), in 1995, there were only three science attachés in total, stationed at the embassies

187 Swissnex aimed to “*invent a new diplomacy*” (Kleiber (2021, p. 4)), a “*future-oriented diplomacy, dedicated to science and technology*” (SHARE Boston (2000, p. 3)).

in Washington, Tokyo and Brussels (Swissnex, 2017; von Arb, 2021). Given the changing conditions, it was viewed as being strategically relevant for this network of science attachés to be strengthened and expanded (cf. ThinkSwiss, 2010, p. 3; von Arb, 2021).

The data is slightly ambiguous on the subject of who proposed expanding the network and relocating the Washington attaché position (SERI or the policy entrepreneur Comtesse (Comtesse, 2021, p. 7; von Arb, 2021)). Irrespective of this, the idea of creating new posts proved to be challenging, due to financial constraints on the one hand and the FDFA's reluctance on the other. The issue of financial support, however, was resolved in the short term, since the ETH Board was able to provide funding for an additional science attaché to take up a post in San Francisco in 1997 (ThinkSwiss, 2010; von Arb, 2021). This newly created position was also the first one outside a capital city. With the ultimate approval of the FDFA, the network of science attachés evolved quite rapidly and had expanded to 15 by the end of the late 1990s (von Arb, 2021). These developments and discussions prepared the ground for Swissnex to evolve, because there was already a certain degree of political momentum and an increased awareness of the need for change; and thus, things were on the move. A final element underlining the political momentum was the appointment of the new SERI secretary of state in 1997 (Charles Kleiber). He was viewed as visionary and internationally oriented; furthermore, he was seeking a niche to make his political mark. Similarly, the Swiss Parliament acknowledged the changing environment. In combination, these elements should be viewed as favourable conditions for the incremental development of Swissnex.

10.1.3. Policy Entrepreneurs

Parallel to this political momentum, the idea of Swissnex developed due to the initiative and pushing of a few visionary policy entrepreneurs, who seized this opportunity. The condensed data assigns a crucial role to the scientific attaché at the Washington embassy at that time, Xavier Comtesse (as of 1996), and the scientific attaché in San Francisco, Christian Simm (as of 1997). Both attachés found themselves in an unprecedented situation where they saw room for action to fulfil their core task, i.e., representing Switzerland in a changing environment. Thus, the idea of creating a new institutional response in the USA emerged. The data depicts a certain

ambiguity about how this idea developed further in interplay between the two policy entrepreneurs. What is known, however, is that the idea first started to manifest itself and publicly take shape in Boston¹⁸⁸. Hence, this development is portrayed in this study first, before the case of San Francisco is discussed.

10.1.3.1. Boston

In 1996, the newly appointed science attaché at the Washington embassy soon became aware of a brain drain situation for Switzerland (see section 10.1.1) and he attempted to tackle and reverse it¹⁸⁹¹⁹⁰ (Marmier & Fetscherin, 2010). A significant number of Swiss nationals were living in the USA at that time, with estimates ranging between 2000 and 8000 (interview SNX2, Comtesse, 2021). The acknowledgement of this situation set the ball rolling. It further became clear that Washington was not the best location for a science attaché to address this brain drain, as the majority of Swiss expats were based in the Boston area. In addition, the Boston area seemed more relevant for a science attaché due to the Ivy League institutions there and

188 The data is ambiguous on how the idea developed in the first place and who the founding father was. While some sources suggest that the early discussions developed simultaneously and as a result of intense interaction between the two key policy entrepreneurs in Boston and San Francisco (cf. ThinkSwiss (2010)), other sources give sole credit to the Washington science attaché and consider him to be the founding father. Other sources claim that ministerial bureaucracy was also involved in developing this idea. This study acknowledges the ambiguity of this situation; a clear answer to this question cannot be provided and is also not of the utmost analytical importance to this study. However, the data is consistent in the sense that exchange took place between these two attachés, who had divided the USA geographically between themselves and were considered to be in competition with each other to some degree (interviews SNX2, SNX3; ThinkSwiss (2010, p. 4)). The opening of the San Francisco location (and also the issue of funding) has been less prominently dealt with in scholarship and in the media compared to the Boston opening (see chapter 10.1.4).

189 In a later publication, he admits that he used the brain drain narrative to secure political support for the idea of creating positions in Boston and San Francisco to help reverse this brain drain and encourage Swiss scientists to return to Switzerland (Comtesse (2021, p. 7)).

190 Comtesse realised that a significant number of Swiss nationals held positions in academia, such as post-doc positions although they had been educated in Switzerland. Back then, the cost of doing a PhD in Switzerland was estimated to be one million Swiss Francs (cf. Comtesse (2021)). The loss of such students to US universities thus resulted in Switzerland incurring an immense financial loss.

a large science community in that region. With this in mind, an innovative idea developed (presumably in interplay with various actors) to create a scientific consulate in Boston, which would be the first of its kind. More specifically, the idea was to create a platform that would provide a “roof” (interview SIS4) for the local Swiss expat community and keep them engaged with Switzerland (swissinfo.ch, 2000; Waldvogel & Huang, 1999).

What is more, this platform was intended to work as a contact liaison for Swiss actors in education and science but also for companies, with the goal of ultimately facilitating the creation of new collaborations (interview SIS4). This underlined the importance of science and technology for the development of Switzerland and its diplomacy (cf. SHARE Boston, 2000, p. 3). While matters of science are typical of a consular portfolio, at the time it was uncommon to create a unit with consular status that focused on science only (cf. interview SNX2, Comtesse, 2021, p. 7). This development triggered a form of “*future-oriented diplomacy*” (SHARE Boston, 2000, p. 3) that responded to worldwide developments (cf. Kleiber, 2021) and showcased Switzerland’s efforts to become a forerunner in science, business and technology (interviews SIS2, SNX2). Despite a certain level of ambiguity¹⁹¹, the data points to the incontestably crucial role of the science attaché Comtesse in these early phases of Swissnex; in fact, he was considered to be the “*incarnation*” of the project (interview SIS4).

Accordingly, Comtesse pushed for and promoted this idea among key actors and the US government (ThinkSwiss, 2010), while also engaging with the media¹⁹². Despite the political momentum, this idea disrupted what had been in place so far (interviews SNX2, SIS4). The novelty also lay in the fact that SHARE served a multitude of innovative goals, such as being an incubator for start-ups, a portal with which to showcase Switzerland, a one-stop-shop and a door-opener for companies wishing to operate overseas. It further pushed the digital boundaries of that time by drawing on new technologies, such as interactive digital walls (for an overview of

191 To underline this, the data points in different directions as to who was in charge and who initiated the idea. This might be explained a) by the interviewees’ skewed memories but also b) by their attempts to make themselves look better in retrospect and c) by their desire to take some of the credit for this pioneering exercise (see chapter 5.5 regarding the limitations of interviews).

192 Engaging with the media was a new element for diplomats. Traditionally, diplomacy would operate in the background and not actively engage with the media. In light of this the new idea, this also changed with the aim of establishing and positioning SHARE Boston (see Comtesse (2000)).

the various activities, see Waldvogel & Huang, 1999). By subsuming these activities under the official diplomatic umbrella of a scientific consulate, the aim was to keep the official character as discrete as possible and to focus instead on conveying an entrepreneurial and innovative character (interview SIS4). The idea of creating a consulate focusing on science only was ultimately approved by the US government and also resonated similarly well with SERI and at the federal level^{193 194}.

This positive resonance can be attributed both to the political openness to change which was described earlier and a favourable constellation of staff at SERI. Comtesse took over as science attaché (in Washington) from Christoph von Arb, who in turn moved to SERI headquarters to run the international affairs section. This constellation can be identified as advantageous, since van Arb was presumably well acquainted with both ways of thinking and perspectives: science and diplomacy, and Bern and Washington (Comtesse, 2021, p. 7; von Arb, 2021). Ultimately, support for this initiative was secured in the political realm, while the issue of funding remained critical (section 10.1.4). There was also initial reluctance among key stakeholders, such as the academic community and the FDFA (cf. Von Arb, 2021) (see section 10.1.5). For instance, matters of science were traditionally part of the embassy's portfolio, and the FDFA was not generally supportive of this change since it was perceived as a loss of competence.

10.1.3.2. San Francisco

In response to the objective of expanding the network of science attachés, the focus was shifted to San Francisco. San Francisco stood out as the right place due to its gradual emergence as a technology hub and an attractive destination for Swiss computer science graduates (Simm, 2021). With the help of the ETH board, financial support was secured for the creation of a science attaché position, which was established in 1997. It became apparent that something other than a traditional consulate was needed on the West Coast, too. In order for a small country, such as Switzerland, to partake

193 Ruth Dreifuss, who was the responsible Federal Councillor at the time, supported the idea (cf. Von Arb (2021, p. 26); ThinkSwiss (2010)). Therefore, she is also referred to as the 'godmother' of Swissnex (Swissnex Boston and New York (2010)). However, there were also reports of a struggle between the State Secretary and the Federal Councillor (cf. Lombard Odier (2011, p. 12)).

194 The opening of SHARE Boston marked a milestone in Swiss internationalisation efforts (cf. Hofmänner (2018, p. 31)).

and position itself in the fast-moving Silicon Valley, new approaches and offers had to be invented to make an impact and stand out from the other countries which were present in the area. In a world that was increasingly developing towards remote interaction, a deliberate decision was taken to create a physical place for people to meet in line with the Boston example (Simm, 2021).

Rather naturally, the idea evolved to join forces with the other Swiss actors (cf. Simm, 2021) that were already located in Silicon Valley. This aimed at generating a bigger impact and creating a common appearance and a space which would ultimately reinforce Switzerland's position as a key player in the ecosystem (interview SNX3). In a similar way to the Boston case, from the start, the San Francisco idea was strongly supported by stakeholders who contributed financially (Simm, 2021). To sum up, the idea of creating Swissnex is deeply interwoven with the efforts of policy entrepreneurs, who seized opportunities and lobbied for an idea that they believed in and considered valuable for Switzerland. The project therefore cannot be seen as having originated from a broader political agenda. Yet, it seemed to be fitting in the sense that it addressed the wider trends of "cooperation and competition" (Kleiber, 2000, p. 4), while reasserting Switzerland's profile internationally. At the time, the idea was not anchored and formalised in Swiss politics but was legitimised by the support of the State Secretary (though significant financial means had not been secured by the administration).

10.1.4. Private Funding

While the idea of SHARE Boston evolved, the question of funding also arose. Given that the idea a) was not primarily a political one and b) developed outside the regular budget rounds (interview SNX3), a key challenge was to find adequate funding for this initiative to grow in Boston¹⁹⁵. Rather atypically for that time, private investments came into play¹⁹⁶. The

195 See previous footnote on the data and chronology of the Boston and San Francisco projects.

196 The data is ambiguous on how these private bankers were approached. While some sources refer to a link between Comtesse and Thierry Lombard, other sources stress the trustworthy connection between State Secretary Kleiber and Lombard (see Lombard Odier (2011); Lombard (2021), interviews SNX2, SIS4). Some other sources even suggest links to other SERI staff members (cf. Von Arb (2021)). Also,

private bankers Lombard Odier & Cie were willing to support the initiative, since it was also their bank's 200th anniversary and they were looking for an opportunity to make "a significant contribution to the Swiss nation and to the generations of tomorrow, their creativity, knowledge and greater understanding" (Lombard Odier, 2011, p. 3). The vision that Swissnex seemed to convey presented a good prospect for such an investment. In addition, SHARE Boston was viewed as offering the funding-worthy potential to be "a bridge between two continents" (Lombard & Odier, 2000, p. 7).

The private bankers agreed to provide two million US dollars to support this initiative, on the condition that the money had to be returned by the confederation if the project was discontinued within its first ten years (Lombard Odier, 2011). This generous funding was remarkable at the time and seemed to have created a certain level of pressure to support the project among those with political responsibility, or at least not counteract the project, due to the financial commitments involved. Furthermore, this support created a certain degree of autonomy for SHARE Boston (and the general idea) to develop its impact, since certain basic funding was in place. Having overcome various administrative obstacles (cf. Lombard, 2021; Lombard Odier, 2011, p. 12), the money was ultimately used to purchase an old grocery store, which, with the help of two Swiss architects, was transformed into the first one-of-a-kind innovation and digital consulate (SHARE Boston, 2000; swissinfo.ch, 2001)¹⁹⁷. This trust in and the support from private sources in the very early stages seem to have left their mark on the DNA of Swissnex and continue to remain a key principle of its governance and funding¹⁹⁸ (cf. section 9.2).

10.1.5. Anticipation of the Model

In line with the political momentum at the time, there was general support for the idea of securing Switzerland's future development and compensating for its lack of natural resources. Hence, the investment in "brains"

the role of the *Latsis Bavois Forum* has been mentioned. This ambiguity in the data is acknowledged but not crucial to the analysis here.

197 The data reflects, however, that the idea of SHARE Boston was viewed critically in its respective neighbourhood. A certain level of (high-level) persuasion and mediation on the part of Switzerland was required to resolve this issue (interview SIS4).

198 Sources specify that Swissnex had to start earning its own income as of 2007 (Schweizer Bundesrat (2007, p. 1347)).

proved to be a valuable way forward (interviews SIS4, SIS5). The consolidated data reveals, however, that the anticipation of the model back then was not entirely positive, an often-neglected aspect of the instrument's narrative. Despite a feeling that "*the idea was in the air*" (interview SIS4), it was accompanied by initial reluctance on the side of key higher education stakeholders, as well as the FDFA's critical stance (in addition to previously mentioned obstacles in the administration which were linked to the private funding (Lombard Odier, 2011, p. 12)).

10.1.5.1. Struggles With the FDFA

The creation of SHARE Boston was initially viewed sceptically among the diplomatic community (interviews SIW1, SNX3, ThinkSwiss, 2010). Since science is traditionally a part of the portfolio that embassies deal with, the creation of a distinct scientific consulate in Boston (and later in San Francisco) gave rise to questions and criticism from the FDFA, presumably linked to a fear of loss of competence¹⁹⁹ (interviews SIS4, SNX2, SNX3), while capacity issues were also at stake—the creation of these new units was (politically) linked to a reduction in the number of full-time science attachés (Schweizer Bundesrat, 2002, p. 2458). In addition, these two novel institutions in Boston and San Francisco were reflective of a new habitus of (science) diplomacy, since they were constrained to a lesser degree by the strict diplomatic corset: these new institutions were conceived as conducting "*the cool*" (interview SNX3) activities. The data furthermore indicates that, in addition, the project originated at a time when Switzerland was exposed to negative international publicity²⁰⁰. Hence, the project was viewed as a means of counteracting this negative media attention (interview SNX2).

The data shows that despite this initial scepticism and reluctance, the FDFA subsequently supported the general idea (interview SIS4), since the FDFA would also benefit from this institution (given that the instrument

199 In addition, the combined data indicated that other topics, such as tourism, had also left the embassy's realm (interview SNX3). This development must also be understood in light of the changing roles of foreign ministries in recent years, particularly reflecting a loss of their core activities to other (state) actors (cf. Moses and Knutsen (2001); Lequesne (2020)).

200 The data suggests that this was linked to the World Jewish Congress lawsuit against Swiss banks that took place at the end of the 1990s (cf. interview SNX2).

aimed to improve Switzerland's image internationally). Eventually, the FDFA provided administrative support, although they were not yet able to exert control over the work of Swissnex themselves. From a more recent perspective, the data suggests that there is ongoing support and structured interaction²⁰¹ between Swissnex and the FDFA, for instance through the Swissnex committee, but also on the ground with the science and technology counsellors based within embassies (SERI, 2015a). Still, friction was reported in relation to the (presumably) looser ties that determine the work of Swissnex (interviews SIW1, SIW2, SNX3, SIS2) in comparison to the tight diplomatic corset. In addition, aspects of budgetary allocation and struggles for financial resources between the ministries²⁰² appear to be an ongoing source of conflict (interview SIS7). The data furthermore suggests that by means of the regular exchange mechanisms (such as the Swissnex committee), tensions were able to be decreased (interview SIW1), since a common understanding among all stakeholders and their ways of thinking could be gained, which aimed to limit potential friction (interview SIS7).

10.1.5.2. Reception Among Other Actors

In relation to other key actors, the scientific landscape needs to be mentioned in particular. The interview data reflects that, initially, the Swiss Rectors' Conference was not very happy and this idea, while cantonal universities were sceptical, too²⁰³ (cf. interview SIS2). The criticism mainly concerned the instrument's (perceived) lack of added value and may also be linked to actors' different funding priorities, presumably paired with a certain level of scepticism towards the new model (interview SIS2). This scepticism did not seem to have an impact on the setting up of SHARE

201 In some regions, close collaboration between Swissnex and the embassy is even required, since the embassy is viewed as the nucleus/door-opener that grants legitimacy to certain activities (interview SIW1). In other words, while in some regions the diplomatic umbrella is key to operations, in other regions it is considered to hinder the activities of Swissnex, since it creates barriers and reflects a different habitus (interviews SIS2, SIS5).

202 This points to the competition between ministries which is referred to in scholarly literature (cf. C. M. Jones (2010) and Mai (2016, p. 204) on *jurisdictional egoism*).

203 In contrast, there seemed to be less scepticism among the ETHs, presumably given the importance of the Ivy League institutions to EPFL Lausanne and ETH Zürich.

Boston²⁰⁴. The data indicates that a few years after SHARE Boston was established, the initial scepticism was overcome, as was certain actors' sense of not being well represented (i.e., in case of the German-speaking regions of Switzerland, (Marmier, 2021, p. 30)), and there was general support for the instrument (interview SIS2).

This raises a more general issue in relation to Swissnex: while Swissnex had gained ground and built up a reputation abroad, its appeal within Switzerland was in need of improvement, since it was less known and familiar in Switzerland itself (interview SIW1). However, in light of the support of key actors, such as EPFL, wider support gradually increased and the initial scepticism disappeared (Marmier, 2021). The data furthermore suggests that key actors in the wider science ecosystem, such as the Swiss SNF, were also sceptical at first²⁰⁵ (interview SNX2), although it was mentioned that these actors would support the setting up of the first houses²⁰⁶ (Schweizer Bundesrat, 2002, p. 2421). In addition, a certain degree of disapproval at paying for Swissnex's services existed. As Swissnex is financed by public money, there was an expectation that it should provide a free service (interviews SNX3, SIW7). While these aspects and discussions were relevant during Swissnex's inception, they never seem to have had a severe impact on the instrument or even presented a challenge to its creation.

10.2. Critical Junctures in the Instrument's Development

The opening of SHARE Boston marked the beginning of an incremental evolution of the network, which can be divided into the following phases (see Table 29): launch phase, expansion phase, consolidation and a second expansion phase. The principle of bottom-up governance thereby continued to constitute a design principle. While the first locations were clearly bottom-up initiatives due to having policy entrepreneurs in the driver's seat, the subsequent development of the network seems to also be charac-

204 This differs from the German case, which experienced considerable tensions that shaped the instrument's set-up. These differences may point to the different mentality and the Swiss way of dealing with these matters, although it is certainly reflective of the principles of autonomy which guide the science sector.

205 On an interesting side note, the secretary general of the SNF at the time of SHARE Boston's inception played a key role in setting up Swissnex Shanghai later on (cf. Max Dohner (2019)).

206 Please note, in the beginning there was no shared name: SHARE Boston, the Swiss House Singapore and Swissnex San Francisco.

terised by top-down decisions which led to events that were politically triggered (while leaving the on-site bottom-up governance unchanged). For a complete graphical overview, see the end of this section (Figure 12, p. 203). Despite political will on the one hand, the interviews stressed that the decision about adding new locations to the network is also driven by stakeholder interests (interviews SIW2, SIS7). This is because Swissnex is seen as a collective that belongs to its stakeholders. However, the extent to which this aligns with (political) reality is contested (interview SIW2).

Table 29 Evolution of the Swissnex Network^{207 208}

| | Locations & Development |
|-----------------------------------|--|
| Launch Phase (2000-2005) | United States of America Boston: opened 2000 San Francisco: opened in 2003 Singapore: opened 2004/2005 |
| Expansion Wave (2005-2014) | China Shanghai: opened 2007 India Bangalore: opened 2011 Brazil Rio de Janeiro: opened 2014 |
| Consolidation (2015-2022) | Closure Singapore (2015) New Formats/Outposts USA: New York China: Guangzhou (Outpost) Brazil: Sao Paulo (Outpost) |
| Expansion Wave (2022) | Japan Osaka: opening planned for 2022 |

Source: created by the author.

207 The data is unclear concerning the opening and duration of Swissnex Singapore. While some sources refer to its opening taking place in 2004 and the fact that it ran for 11 years (swissinfo.ch (2015); Der Bundesrat (2015)), other sources claim that it operated for 10 years, which thus suggests it opened in 2005 (Swissnex (2021c)).

208 The outpost in China seemed to have closed again, in line with its temporal character (see chapter 10.2.3).

So the idea that this external network belongs [...] one can say almost extremely, not to the federal government but belongs to the stakeholders. There is almost a cooperative structure of Swiss stakeholders in education and research²⁰⁹ (interview SIS7).

10.2.1. Launch Phase (2000–2005): The Policy Entrepreneurs Era

As mentioned earlier, the opening of SHARE Boston marked a change in existing practices and was accompanied by intense media attention²¹⁰ both in the USA and in Switzerland; this was also closely monitored by other countries²¹¹. SHARE Boston was conceived as being a first-of-its-kind scientific consulate (Burkhalter, D., 2010; swissinfo.ch, 2000) that signalled the dawn of a new era: diplomacy in the name of science (von Arb, 2004). In a similar spirit, a counterpart of SHARE Boston was launched in San Francisco on the West Coast only three years later in 2003; it was called Swissnex. While sharing the same idea, the two locations made sure that they primarily responded to and developed in line with their respective regional needs (SBF, 2006). The success of these two locations quite soon led to a political intention to explore opportunities to further increase this network (Schweizer Bundesrat, 2002, p. 2458):

“This is a new instrument that, for very little investment of taxpayers’ money, actually bears a lot of truth and gives Switzerland a pretty amazing visibility” (interview SNX3).

Inspired by the blueprints in the USA, in 2004 a third location opened in Singapore (European Commission, 2004). The data again presents a hybrid picture as to who initiated the project (policy entrepreneur vs. political actors). Some interview sources claim that this can be traced back to the

209 “Also die Idee, dass dieses Außennetz gehört [...] kann man sagen, fast extrem nicht dem Bund sondern gehört den Stakeholdern. Es ist fast eine genossenschaftliche Struktur der Schweizer Stakeholder im Bildung- und Forschungsbereich“ (interview SIS7).

210 For more information, see Dufour (2000b, 2000a, 2000c); Comtesse (2000).

211 Data from the German case study reveals that this development was closely monitored by relevant key actors from the German science sector (cf. interview GIW15). In addition, the data reflects that members of the German parliament were eager to learn about SHARE Boston and addressed a request to the government to examine whether there was a need to create a similar model in Germany (cf. Von Arb (2004, p. 2)).

initiative of a policy entrepreneur (interviews SIW1, SIS4), who secured financial support in line with the centre's US siblings. Other sources (cf. Lombard Odier, 2011, p. 16) suggest that the idea of opening a location in Singapore was politically triggered²¹² by the State Secretary at the time, and that it was put into action by an embassy staff member who was already in Singapore.

Compared to its two sibling institutions in the USA, the Swiss House Singapore was smaller (interviews SIS4, SBF, 2006) but still equipped with sufficient autonomy to develop distinct offers (interview SIS4)²¹³. For the overall network, Singapore represented a special case at that time as it was conceived as a door-opener and hub for the rest of Asia (interviews SIS4, SIS7). In addition, there was a growing interest among key stakeholders in Swiss higher education in cooperating with the academic community in Singapore.

10.2.2. Politically Initiated Expansion (2007–2014)

Another milestone in the (gradual) institutionalisation of the instrument is marked by its re-branding, which started in 2007/2008 (SBF, 2006; Schweizer Eidgenossenschaft, 2010, p. 11; SERI, 2015a). This re-branding was partially due to an evaluative exercise²¹⁴, which called for stronger coherence. In addition, there was political will to enlarge the network (cf. request by member of parliament Fathi, 2012) in cooperation with relevant stakeholders (Schweizer Bundesrat, 2007, p. 1347)²¹⁵. Accordingly, the Swiss Houses and Swissnex San Francisco were, on the initiative of State Secretary Kleiber, to be consolidated by a common identity, with the aim of increasing the visibility and the impact of the network (cf. Simm, 2021). To that end, the logo and slogan “*connecting the dots*”, which

212 Sources show that this was in line with the broad political lines (Schweizer Bundesrat (2002, p. 2458)).

213 For an overview of the various activities and the financial set-up of these three locations, see SBF (2006).

214 To explain this further, in 2006 an evaluation took place that identified, among other things, the need to create a joint appearance of the three units in Boston, San Francisco and Singapore (Schweizer Bundesrat (2007, p. 1347)).

215 This policy document refers to India, South Africa and Russia as potentially relevant destinations to be explored (in close cooperation with *Pro Helvetia*) (see chapter 9.4.2).

had successfully driven Swissnex San Francisco early on (Simm, 2021), were adopted and thus provided a corporate identity for the developing network. This re-branding exercise underlines the political significance that was increasingly tied to the network. This is similarly expressed by the anticipated political goal of enlarging the network in the direction of the BRICS countries (interview SIS2). As a first step, this was accomplished with the opening of a location in China (Shanghai)²¹⁶ in 2007/2008²¹⁷. In a similar vein, in 2007/2008 there was a decision to open an office in India (Bangalore), although it did not start its actual work until a couple of years later (interview SIS5).

The last step in this politically anticipated expansion phase signalled the opening of an office in Brazil (Rio de Janeiro) in 2014 (although other locations were also discussed at the time). The data suggests that the combination of the football World Cup and the Olympic Games created momentum to reinforce Switzerland's presence in Brazil and paved the way for the decision to open a Swissnex office there (interview SIS2). Accordingly, over time, the network was increasingly regarded as a valuable instrument that moved more strongly into political focus. Thus, while the Swissnex locations enjoyed relative autonomy in their early phases²¹⁸ (interviews SNX2, SNX3), as the network expanded, this also led to an increase in monitoring from ministerial bureaucracy (interview SIS6). In addition, a certain degree of competition between the locations was observed, since more locations were seeking access to the same resources (at least within Switzerland) (interview SNX3).

10.2.2.1. The Swissnex Committee

Around 2008, coinciding with the opening of new locations, the Swissnex committee was established as a structuring element. While previously loosely coupled stakeholder consultations had taken place, the establish-

216 For more insights, see an interview with former Shanghai CEO, Peter Hertig, by Max Dohner (2019).

217 The documentation concerning the opening dates is inconclusive. Some sources refer to the opening of Shanghai in 2007, while others refer to 2008 (cf. Schweizer Bundesrat (2007)). The same holds true for Swissnex India and Swissnex Brazil (cf. Swiss Federal Audit Office (2016, p. 15)).

218 Despite a significant degree of autonomy, the documents stress that all three locations operated on the basis of target agreements (between 2004–2007) (cf. Schweizer Bundesrat (2007, p. 1347)).

ment of the Swissnex committee can be explained by a leadership change at SERI. With the retirement of Kleiber as State Secretary, the founding father of Swissnex, a new arena of discussion emerged which questioned the legitimacy and purpose of the project. The implementation of the Swissnex committee by the new State Secretary was seen as a clear attempt to counteract these tensions (interviews SIW1, SIS7). In addition, setting up an advisory body for Swissnex's work was seen as placing the network, which had often been viewed as being a "*Kleiberian heritage*" (interview SIW7) or the former State Secretary's toy (interviews SIW1, SIS7), on stronger political feet. What is more, this created a platform for structured exchange, also concerning other governmental actors such as the FDFA (interview SIW1). The committee was now composed of key stakeholders and operated on the principle of consent. The establishment of the Swissnex committee can be seen as a response by the new State Secretary and as his attempt to leave a political mark. At the same time, this was an attempt to anchor the instrument more strongly and contribute to its institutionalisation and consolidation.

10.2.3. Consolidating the Network: Closure, Evaluation and New Formats

Following Swissnex's politically initiated expansion wave, a period of consolidation took place in 2015. This is most prominently associated with the closure of Swissnex Singapore. In addition, critical evaluation of the network took place, which left its mark on the administration but ultimately led to a stronger Swissnex network. These two key events challenged Swissnex's ways of working and significantly impacted its (gradual) institutionalisation.

10.2.3.1. Closing the Singapore Location

In September 2015, it was announced that, after 11 years in operation, Swissnex Singapore would close its doors and be transformed into the position of a Science Counsellor at the Swiss embassy in Singapore (Der Bundesrat, 2015). This closure constitutes a milestone event in the gradual development of the network, which until then had been continuously expanding. The reason for closing Swissnex Singapore was explained by the fact that it had fulfilled its initial mission of strengthening the coopera-

tion between the two countries (SERI, 2015a, p. 6). The official narrative explained that Swissnex had been successful since it was no longer needed by stakeholders (interviews SIS2, SNX1, SIS6, SIS7), although this logic could be contested²¹⁹:

*The contradictory thing about Swissnex is that if Swissnex does its job well, then there is actually no longer a need for a Swissnex*²²⁰ (interview SIS2).

This perception is even considered to be an ideal-typical scenario at times, where Swissnex works as a door-opener for domestic actors to launch effective partnerships and then moves on (interview SIW2). This line of argument corresponds with Switzerland's general approach to science diplomacy, which has been characterised as making itself superfluous:

But at the same time, the goal of our science diplomacy is to make ourselves superfluous [...] Once the doors are open for science and both sides actively exchange, their task is accomplished—the effect lasts (State Secretary Dell'Ambrogio cited in Rittmeyer & Forster (2013, p. 67))²²¹.

219 On a challenging note, one might wonder to what extent this line of argument can in fact be applied to the whole network. In the case of Swissnex Boston and San Francisco, it could be argued that both locations are well-established and successful. The fact that these two older Swissnex offices are still in place contradicts the previous argument. The interviews reveal that many Swiss actors have in fact established ties at these locations in the meantime. Accordingly, it might rather be assumed that there are different rationales tied to different locations. In other words, the Swissnexes which are based in the USA seem to possess a political relevance and political dimension since questions could be raised as to whether the links between Switzerland and the USA, and its academic communities, have not also become institutionalised over time to a comparable degree as Singapore, which would make Swissnex superfluous. This is also addressed critically in the data (interview SIW2): rather than remaining in these established locations that work well, it is suggested that there should be a shift of focus towards locations where door-openers are needed. Swissnex Boston and San Francisco have probably institutionalised themselves over time; however, they presumably constitute excellent cases for conveying and reinforcing an image of Switzerland that is (greatly) envied and admired by other countries. Accordingly, these two cases seem to have a representational and a branding function (i.e., a niche for Switzerland to position itself internationally; see also chapter 5.2.4).

220 “das widersprüchliche an Swissnex ist, dass wenn Swissnex seinen Job gut macht, dann braucht es eigentlich ein Swissnex nicht mehr” (interview SIS2).

221 “Aber gleichzeitig besteht das Ziel unserer Wissenschaftsdiplomatie darin, sich überflüssig zu machen [...] Stehen die Türen für die Wissenschaft einmal offen und werden von beiden Seiten rege beschritten, ist ihr Aufgabe erfüllt- die Wirkung hält an“ State Secretary Dell'Ambrogio cited in Rittmeyer and Forster (2013, p. 67).

To provide more detail, it was also revealed that the added value of Swissnex Singapore had diminished since Swiss actors (for instance, ETH Zürich) managed to create their own strong presence and were less dependent on the support of Swissnex to establish cooperation (interviews SIW2, SIS2, SIS6, SIS7). Similarly, budgetary constraints were revealed as being decisive, since the politically triggered expansion of the network did not result in a budgetary increase on the part of SERI (i.e., funding more locations with the same amount of money; on a side note, this was made possible by the significant private funding share). In addition, given budgetary constraints, the room for manoeuvring and reaching out to new countries was limited (interview SIS2, swissinfo.ch, 2015). All this triggered the Singapore debate; furthermore, the closure was also revealed to be a signal of political will, which aimed to demonstrate the idea that Swissnex remains mobile. In addition, the closure was conveyed as a political signal, reflecting a coherent political approach and the ability to implement cut-backs, particularly in relation to other actors in the system, such as the FDFA. Official documents further refer to the closure as a matter of prioritisation of the external network (Schweizer Bundesrat, 2016, p. 3229). This official view is framed slightly differently by other sources, which indicate that SERI was under pressure to respond to market dynamics: given that the Singapore office was quite small (interviews SIS4, SIS7), the options were either closure or strengthening the office (interview SIW1).

10.2.3.2. Evaluation

Another critical moment in the institutionalisation of the network was marked by the evaluation by the Swiss Federal Audit Office (*Eidgenössische Finanzkontrolle, EFK*) in 2015/2016. This performance audit scrutinised the work of the network and drew circles which led into the heart of the administration and caused turbulence (interviews SIS6, SIS7). The performance audit (Swiss Federal Audit Office, 2016) critically examined the network and identified ideas for improvement. These ideas were not necessarily shared by the administration, which in turn criticised that the evaluation had an incomplete (even potentially false) understanding of the Swissnex concept, which was reflected in the evaluative report but was disputable (interviews SIS6, SIS7). In a nutshell, the evaluation was conceived as a highly 'political' issue. The evaluation raised points of criticism such as the accounting method and the way that private funding is identified or

the legal basis for Swissnex, which seemed to be lacking (since it is not referred to in official legal documents but mentioned in the *Botschaft* documents²²²). It called for these aspects to be changed as well as for a better performance indicator system to measure the impact of Swissnex and its better integration into the external network (coordinated by the FDFA) to exploit synergy effects (Swiss Federal Audit Office, 2016).

With regard to the last point, the evaluation also noted that there were blurred responsibilities and a lack of demarcation regarding the work of the different Swiss actors abroad (the latter was also highlighted in the interviews, cf. interview SIW2 and section 9.4.2). Following this evaluation, SERI tackled and responded to these issues. Some of these points even aligned with the strategic vision that SERI had formulated for developing the network, such as introducing better performance indicators (SERI, 2015a). However, the evaluation did not significantly impact the actual work of Swissnex in terms of challenging governance structures or calling for a revision of its main activities²²³. Instead, performance measurements were tackled, signalling the existence of a kind of functional logic that addresses the issue of accountability. For instance, a central accounting for all locations was set-up in Bern (interview SNX3), while an independent evaluation of the network was also commissioned (cf. Oxford Research A/S, 2020).

10.2.3.3. Outlook and New Formats

To underline the consolidation of the network and also as a response to a parliamentary inquiry²²⁴, in 2015, SERI published a road map for the future development of Swissnex: this document outlined the strategic considerations that would guide the (future) network (SERI, 2015a). Three guiding principles were mentioned: 1) to build on and reinforce the strengths of

222 To recall, *Botschaft* documents are official policy documents. As far as it can be retraced, there is still no official legal basis (cf. interview SIS7). Originally, the idea was to do this when the Swiss research and innovation law (*Forschungs- und Innovationsförderungsgesetz*, FIFG) was revised (cf. Swiss Federal Audit Office (2016)). Interview data, however, assumes that the network gained greater political significance following the evaluation also due to the establishment of the Swissnex committee (interview SIS7).

223 This constitutes a major difference to the evaluative exercise that was undertaken in Germany.

224 See the postulate (*Postulat*) by Fathi (2012), member of the National Council.

Swissnex, 2) to keep the external network lean and agile while prioritising and being reactive towards stakeholder demands, 3) to foster synergies with science and technology counsellors where possible. In this spirit, and having reduced the number of Swissnex offices, new agile formats emerged, such as *outposts*. While the concept of outposts has largely disappeared again, around 2014/2015 three outposts were launched in selected countries Swissnex was already operating in. Given the countries' sizes and potential, it made sense to be present in more than one city (interview SIS6). These horizontal layers were installed in countries such as China (Guangzhou), the USA (New York)²²⁵ and Brazil (São Paulo) (Schweizer Bundesrat, 2016, p. 3228; Swissnex, 2016), and were funded entirely by partner contributions (Ayebare Nyakato & Kyora, 2015). In contrast to the Swissnex model, outposts were considered more fluid and volatile, less costly, and more responsive to short-term needs (interview SIS6). Accordingly, outposts were usually set up for a limited period only. Besides the creation of these outposts, there were discussions on exploring other formats, such as mobile Swissnexes, which aligned with the network's anticipated agile character (cf. Swissnex, 2021a). This underlines Swissnex's increased institutionalisation and shows that the idea of Swissnex had begun to spill over to new areas.

10.2.4. Expansion and Reinvention

Since the closure of Swissnex Singapore, the network has been in a consolidation phase and seems to have experimented with temporal formats such as outposts or Swissnex mobile in relation to the international EXPO (House of Switzerland, 2016; Swissnex, 2021a). In addition, Swissnex re-invented itself and changed its slogan to "*connecting tomorrow*" in about 2020. It also created a new logo and its leadership team rotated (cf. Swissnex, 2021a). All of this can be seen as reinvention. What is more, the

225 The data suggests that the New York outpost was opened in about 2014 (cf. Swissnex in Boston and New York (2022)). Today, New York is no longer referred to as an outpost; instead, it is officially listed in line with Boston. As has been mentioned previously, the concept of outposts seems to have disappeared (see chapter 3.3.2). The interview data refers to critical views on keeping the New York outpost, particularly questioning the added value of Swissnex in an area with an already crowded Swiss organisational presence (interview SIW2). This raises the issue of duplication (and possibly demarcation).

Swissnex network has broadened beyond the traditional Swissnex locations. Furthermore, science offices in Seoul and Tokyo²²⁶ have been (newly) listed as being part of the global Swissnex network²²⁷. As far as the established Swissnex locations are concerned, expansion of the network has been announced with the opening of a new location in Osaka (Japan), planned in the first half of 2022. As early as in 2016, there was a political aim to open one or two new offices between 2017 and 2020 (Schweizer Bundesrat, 2016, p. 3228). In that context, Japan was already identified as an attractive location by the ministerial bureaucracy and stakeholders²²⁸.

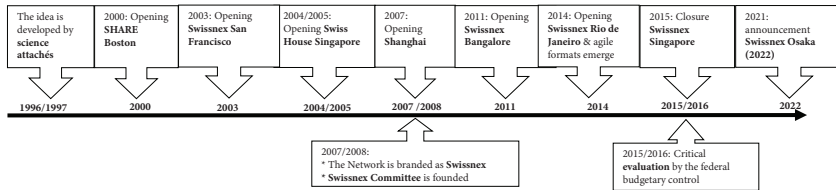
The most recent policy documents refer to additional momentum for expansion in Asia, the Middle East, and Africa in particular (Schweizer Bundesrat, 2020b), although this depends on the interests of key stakeholders. The opening of Swissnex Osaka once more underlines the political will and significance that is tied to this instrument, as well as the need to be present in regions which are considered technology leaders. While there is clear political will on the one hand, it was similarly stressed in the interviews that stakeholders see an interest in Africa or even within Europe, yet the stakeholder data reflects ambivalence here (interview SIW2, SIW3). In a nutshell, despite the growth of the Swissnex network, it seems that the current governance and funding arrangements have remained largely unchanged over time, while this has also been viewed critically (interview SIW2), for one thing because of the difficulty that *“it just means that there are more organisations going after the same source of money”* (interview SNX3), at least in terms of Swiss (public) contractors, while secondly, questions were raised about channelling public money through third parties (such as universities), rather than providing Swissnex with a stronger financial basis (interview SIW2). However, this competition, or “co-opetition” as it was also referred to, is similarly viewed as keeping Swissnex dynamic and is hence to some degree also politically intended (interviews SNX3, SIS6).

226 For more information, see <https://swissnex.org/about-us/our-team> (accessed 01.02.2022).

227 Without going into detail, they seem to have a special role and are distinct from the regular science and technology counsellors.

228 This intention was reaffirmed during the interview process in 2019 (cf. interviews SIS7, SIW3, SIW7).

Figure 12 Milestones in the Development of Swissnex



Source: created by the author.

10.3. Findings and Discussion

This chapter retraced the historical development of the Swissnex instrument in terms of its inception and subsequent evolution (see Table 30). In line with the theoretical premise, this deconstruction provides an insight into the trajectory of Swissnex, its embeddedness in a wider context and its current form. Accordingly, key factors and events were identified which explain Swissnex's current structure in terms of design principles.

The idea of Swissnex developed, firstly, due to particular political momentum that can be explained by larger societal transformations. This laid the groundwork for and created an awareness of the need for change and action since internationalisation efforts were in their infancy (compared to the current situation, there was a minimal institutional presence of key science and education actors abroad, a situation which has changed by now). In addition, aspects of timing and contingency were relevant: a combination of timely factors, such as visionary policy entrepreneurs and a newly appointed State Secretary, who seized and supported these ideas. While the initiative could not be covered by the regular budget, a substantial amount of private funding was made available in order to realise this visionary idea and open SHARE Boston as a unique venture at that time. This development must furthermore be understood in line with the pragmatic bottom-up principle and the politics of understatement that are characteristic of Switzerland in the sense of it granting autonomy and space for ideas to grow²²⁹.

229 This is thus characterised as being a refreshingly unbureaucratic partnership between private donors and state officials that soon developed into a pearl of Swiss diplomacy: sparkling, oscillating, valuable—and fragile: “*erfrischend unbürokratische Partnerschaft privater Geldgeber und staatlicher Amtsträger. [...] zu einer Perle*”

Table 30 Key Findings for Swissnex's Institutionalisation

| Swissnex - Switzerland | |
|---|---|
| Genesis | <ul style="list-style-type: none"> * Political momentum, policy entrepreneur driving the idea and timely private funding * Elements of trust * Bottom-up logic driving the installation * Ministerial struggles over competences |
| Critical Junctures & Evolution | <ul style="list-style-type: none"> * Politically triggered expansion of the network (2007 onwards) * Critical audit exercise (2015/2016) * Increase in politicisation of the network, re-branding and stronger political steering (while keeping autonomy) * Closing of Swissnex Singapore (politically motivated) * Expansion in 2022 |
| National Characteristics & Contingency | <ul style="list-style-type: none"> * Reflecting typical Swiss bottom-up policy style and politics of pragmatism * Contingency and timing: political window of opportunity and timely events |

Source: created by the author.

The significant autonomy which Swissnex locations possess has been singled out as a key factor in their success (this is reflected in the mix of public and private funding sources). To expand on this, because Swissnex needs to generate a substantial part of its income, Swissnex's work is guided by an entrepreneurial approach in the sense that it needs to stay ahead of developments and offers services that provide added value to its clients. This principle of successful partial self-funding is therefore seen as an indicator of Swissnex's added value. In other words, if Swissnex can generate its own income, this demonstrates an acceptance of and a need for the instrument within its extended stakeholder community. This is seen as providing a source of legitimacy. Finally, Switzerland is a small country, where people know each other (cf. interviews SIW1, SIS7), and a certain consensus is key to discussions. The interview data indicates that this personal interconnectiveness also creates an atmosphere of trust (as in the case of securing private funding) and this has been significant in the development of Swissnex.

Despite its innovative and autonomous development in its early stages, the subsequent evolution of Swissnex mirrors a development in line with functional considerations. Around 2007, the network seemed to develop more strongly as a result of political steering, aiming to ensure a greater impact of and more visibility for the network. To that end, for instance, the re-branding exercise took place. Furthermore, the critical audit exercise, which was encountered, can be seen as reflective of the functional dimensions that Swissnex is increasingly exposed to. The evaluation challenged Swissnex's (lacking) legal basis and led to friction within the administration. Nevertheless, these struggles were viewed as placing the network on stronger feet, although some of the critical issues have not yet been resolved. In addition, the closure of Swissnex Singapore was viewed as a consolidating measure for the network as a whole.

To sum up, while Swissnex is now supported politically, the project initially emerged largely outside the political agenda and enjoyed quite some autonomy. The development of the network is furthermore a story of contingency as well as timing, which were both central to the development of the idea. This differs significantly from the gradual institutionalisation of the DWIH, although some similarities become evident (these will be discussed in more detail in chapter 12). Retracing Swissnex's institutionalisation shows that the network developed to a large extent due to endogenous factors, i.e., gradually, and naturally from within the system, at least in the first few years. Over time, exogenous factors also impacted Swissnex's development, such as a clear political will to expand and strengthen the network.

The next chapter will expand the analysis of the institutionalisation by investigating actors' rationales behind participating in this instrument. This attempts to a) unveil their sense-making and b) examine the use of the instrument. The combination of these two elements allows us to fully grasp and analyse the gradual institutionalisation of Swissnex. In addition, the chapter will identify the political objectives which are associated with Swissnex.

der Schweizer Diplomatie: funkelnd, oszillierend, wertvoll - und fragil“ (Egger (2013, p. 54)).

