WORKING PAPER

Corporate Venturing Navigator:
Conceptual development

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Research Summary: Corporate venturing (CV) has become a very important business tool for both corporations and start-ups and has received considerable research attention. However, existing studies are ambiguous and incomplete in terms of the optimal set-up, operation and termination of a CV program and the capture of value that is generated for the parent company. Based on the available research, we developed the Corporate Venturing Navigator (CVN) holding two artefacts: 1) the CVN Framework and 2) the CVN Cockpit. The results provide initial guidance on how to improve CV activities and realize their full potential with first application in practice. We highlight the contributions of the CVN in terms of theory and measurement.

Managerial Summary: How can one prove that investments in CV operations are worthwhile for a parent company? CV programs are quite attractive for companies that want to take innovation to the next level, but most companies struggle with how best to structure and deliver such a program. It is critical that some performance impact is achieved, but this requires the right framework for a CV program and raises the question of how to actually capture and measure financial and strategic CV value. This study, the *Corporate Venturing Navigator* (CVN) concept development, outlines the CVN Framework and CVN Cockpit. It therewith provides a practical tool for building, executing, and terminating a CV program while achieving a return on innovation, encompassing all the nuanced CV elements and interactions and their practical contributions to a parent company.

Keywords: Corporate venturing, design science research, return on innovation.

Introduction

Corporate venturing (CV) has experienced tremendous growth and has received very positive attention in recent years from academia (Prügl and Spitzley, 2020). The increasing interest in CV, which is the entrepreneurial effort of established corporations to invest in and/or create new businesses, can be traced back to its unique opportunities for corporations to redefine innovation and investment practices (Dushnitsky and Lenox, 2006). Today, many corporations are challenged more than ever by the dynamic market fields and various disruptive technology advances (Fels et al., 2021). CV, in this regard, is often considered an organizational vehicle for building competencies and has thus turned out to be a promising vehicle for promoting innovation strength (Dushnitsky and Lenox, 2005b). CV has demonstrated that it is one of the fastest growth strategies for transforming a traditional closed, linear approach to corporate innovation into a more collaborative, open and agile model based on new research and development partners (Napp and Minshall, 2011).

However, most scholars have found that past research has not sufficiently provided efficient insights into and academic explanations for the reoccurring lack of performance and growth concerning CV investments (Huang and Madhavan, 2020; Fels *et al.*, 2021). More research is needed to better understand the fundamentals and mechanisms of how to best set-up, run and close CV investments. Insights into the causal relationships of CV investment objectives, the organizational structure, the governance and the many more essential CV elements are needed to make CV programs successfully contribute to parent corporations as promised. CV programs are to be made more robust to better cope with internal changes such as management changes and changes in activity foci, as well as external alterations such as amended market fields, competition, customer demands or new technologies. In this context, several researchers have emphasized again that in accordance with the further examination of CV launch and management, the strategic value-add extraction of CV investments is key (Chiang, 2018). In accordance with the identified research gap, a *Corporate Venturing Navigator* (CVN) concept is developed to answer the research question: *"What (additional) value-adds can be achieved for a CV program by applying the CVN?"*

The navigator aims to develop a conceptual model to (a) properly set-up, manage and close or calibrate CV activities (CVN framework) and (b) to capture and measure generated value throughout the activity (CVN cockpit). Both elements are expected to result in better self-assessment capabilities and the ability to handle change and disruption. In turn, enhanced CV activities are anticipated to have a positive impact on sustainable competitive advantages and thus contribute to the performance of the parent company.

For academia, contributions to multiple research streams such as the literature of corporate venturing and innovation will be generated. Implications on how the CVN concept can take CV theory and practice one step forward to optimize CV performance, will be outlined in detail. The application of the attention-based view and the behavioural theory of the firm is expected to augment and offer explanations on corporate decision-making processes in the CV context, while design science research is applied in the conceptualization process.

For corporations, the ultimate implications of the CVN are achieving improved or promising new CV operations that are supported by data-driven decision-making and a better understanding of the neural system of CV investments. CV performance targets that can be realized as financial and strategic returns on innovation will be made transparent and tangible.

In general, the CVN is based on the *St. Galler Start-up Navigator*^{TM}, which was created at the Institute of Technology Management at the University of St. Gallen in 2018. The *St. Gallen Start-up Navigator*^{TM} evolved based on a systematic approach to building new ventures and a quantifiable system for data-driven decision-making. Insights were generated by evidence-based findings from academia and practice through literature reviews and semi-structured interviews. Thus, the CVN has been conceptualized as a dynamic tool to guide corporates through an intuitive step-by-step approach with a total of four main concept categories and eighteen elements. The methodology applied is design science research.

Artefact development

DSR foundation applied in general

The methodology used in this paper to conceptualize the CVN is design science research (DSR), which seeks to expand the capability boundaries of corporate management by developing two novel, innovative artefacts:

- the CVN Framework, and
- the CVN return-on-investment tool.

These are expected to provide answers about how CV investments are initiated, managed and potentially completed and how organizations derive value from the CV process. The DSR fundamentals of Hevner (2004) and the most commonly used DSR process of Peffers et al. (2013) are applied to develop the artefacts. The two artefacts developed were aimed toward practitioners, which could lead to recognition of the relevance cycle through close collaboration with the CV industry. The underlying reasoning is to understand and address the real needs of corporations within CV activity while considering the prevailing environment and the application domain. Accordingly, we sought close collaboration with several CV programs through interviews and informal talks to evaluate the phenomenon at hand and all its technical and operational requirements (relevance cycle). CV programs hold a very international background and cover a wide range of industries. The corporations that we collaborated with include PM Equity (Phillip Morris Venture arm), Shell Ventures, Samsung Catalyst Fund, Axa Venture Partners, Deutsche Bank Corporate Venture Capital, Siemens Healthineers, Nestlé and Bertelsmann Investments. In addition to working closely with companies conducting CV investments, we sought to embed the artefacts in the existing knowledge base (rigor cycle) so that they can both meet corporations' current needs and contribute to future research. Currently, the present relevant literature and theoretical foundations indicate that the existing knowledge base is insufficient to meet the requirements (see requirements and design principles). Therefore, bringing together the needs of practitioners in an advanced research area and the prevailing knowledge base was key. As a result, we first used the identified needs and given knowledge base as a foundation for the artefacts, which were then continuously iterated, tested and evaluated until the derived requirements were met (design cycle).

Requirements and scope

We started with investigating the urge for solutions that can provide companies with a guideline in the form of a framework to establish and operate CV investments in the best possible way and to create transparency and measure the added value generated during the process. Such solutions are designed to help key stakeholders in a CV program make data-driven decisions with the ultimate goal of establishing CV spillovers for the corporate parent, which ensures long-term competitiveness and survival.

The conducted semi-structured interviews, which were held with eight CV programs from very diverse industries and regional backgrounds (see Appendix Table 4). The CV programs ranged from rather old programs to recently established ones and held very different mandates and objectives. This scope was particularly chosen to cover a wide range of requirements while considering the specifics of individual industries, regions and mandates. Accordingly, the interviews confirmed the identified need for such CVN solutions. They revealed that each CV program has gone through the same process of determining how to properly launch and operate a CV program. The programmers were continuously facing obstacles to meeting set objectives and a changing ecosystem and demands. The CV programmers who were interviewed also expressed the strong need for a tool to harvest the value-add generated, which is not fully possible yet or transferable from other companies. Many programs have struggled to survive and justify their existence on a constant basis. We found that there are many isolated solutions available, but none cover the overall CV program process as one interconnected ecosystem that is applicable throughout the same industry or region. Academia has emphasized the need to better understand how CV programs can achieve their objectives and thus remain competitive and survive over the long term, while scholars have increasingly called for tools to capture and measure CV's strategic impact.

Practical requirements (PR) were developed along the recognized need for data-driven solutions using a development process that was similar to Meth et al.'s (2015). Requirements were developed in 1:1 online meetings and corporate-oriented, practical

studies that dealt with individual CV elements. PR are listed in Table 1 for the CVN Framework and cockpit.

Theoretical requirements (TR) were developed from the literature review, which aimed to cover previous discovered research gaps to establish CV program survival and make its impact more tangible and justified. TR for the CVN framework are represented in Table 2 and the TR for the CVN Cockpit are presented in Table 3. The practical and theoretical requirements were summarized into overarching design principles for both artefacts, respectively in Table 1.

Artefact #1: CVN framework

When applying the DSR process that was developed by Peffers et al. (2008), the first step is the identification of the problem and the motivation accompanied by the problem-centred initiation. As outlined in the theoretical background and the DSR foundation section, the ever-changing environment requires companies to become more entrepreneurial for their long-term viability (Dushnitsky and Lenox, 2006; Abernethy, Dekker and Grafton, 2020). CVC is thus seen as an external vehicle to increase a corporation's innovation and strength for its competitive advantage and future survival (Ceccagnoli, Higgins and Kang, 2018; Röhm, 2018). Yet, a comprehensive and coherent practical tool that can optimally establish, manage and terminate a CV program is lacking; corporations need a tool to improve current and new CV programs that positively impacts sustainable competitive advantage and leads to long-term existence. The problem of this absence and its relevance to corporations' needs means that companies are often not able to meet the expectations and aspirations set by highlighting the benefits of CV investments for the company's leaders. Many companies are also often unaware of their inability to properly respond to internal and external changes, which can jeopardize the benefits of a CV program that contributes positively to the parent company's business. This indicates a lack of understanding regarding how to best operate a CV program to take advantage of its various benefits while converting its purpose into benefits for the corporate parent. The motivation, then, is to have a tool that provides a framework for CV programs and thus insights into how CV investments can be initiated, implemented and best used. This means

providing guidance on how to profile and design a CV program or readjust one according to the ecosystem it is in and understanding which CV program elements are needed and how they are interconnected and interdependent and offering guidance to run the CV program or terminate it successfully. The underlying motivation of the CVN Framework is, thus, to offer guidance to make the best use of CV investments for the corporate parent.

The next step in the DSR process is to define objectives for a solution that can be complemented by objective-centred solutions**.** This goes in line with the previously mentioned practical and theoretical requirements, which basically meet the set objectives. The overarching objective for the solution is to address the scientific and practical issues raised in ensuring that continuing CV programs better fulfil their CV charters, increase their survival rates and thus realize the promised impact on the corporate parent. To achieve this, all stakeholders involved must improve their understanding of how best to structure and run a CV program to achieve the set objectives within a given mandate.

Table 1: Practical requirements of the CVN framework and cockpit

PR, #	Requirement description
PR1	The artefact should be standardized for all different types of CV programs, different industries, and regional backgrounds.
PR2	The artefact should be applicable to new and established CV programs.
PR3	The artefact should be flexible to grant specifications across CV programs and to handle dynamics and interdependencies.
PR4	The artefact should be easy to use for all stakeholders involved and should be considered a “non-bureaucratic” tool guide.
PR5	The artefact should be embedded throughout an organization to ensure its effectiveness.

Source: Authors own analysis and illustration.

Table 2: Theoretical requirements of the CVN framework

TR, #	Requirement description	Relevant source(s)
TR1	The artefact should describe and cover influencing factors of CV investments.	Kann (2000)
TR2	The artefact should indirectly relate to CV value creation and program success to better understand and avoid recurring CV failure and add value to corporate performance.	Dushnitsky and Lenox, (2006); Keil et al., (2008)Hill and Birkinshaw (2008; 2012); Teppo and Wüstenhagen (2009); Fischer (2019)

Source: Authors own analysis and illustration.

Using terms that we derived from these specific practical and theoretical requirements, we defined "ease of application", "profundity and breadth" and "value contribution to corporate performance" as the overarching design principles for the artefact per March and Smith (1995). The tool was considered easy to use if there are no bureaucratic obstacles or unnecessary complexity and if the interests of the stakeholders involved are considered and being reflected and emphasized (PR4). The tool was also seen as profound and broad when having a rather flexible instrument that can capture rather generic and specific CV programs characteristics is possible (PR3). As there are currently only isolated solutions on how to set up and run a CV program, a generalizable, standardized tool that will not miss the dynamics and interdependencies of an overall CV program has been requested (PR1). The CVN is to be embedded throughout an organization to ensure its effectiveness (PR5).

The next step covers design and development, which were supplemented by the design- and development-centred initiation. The CVN framework consists of four phases: (1) profiling, (2) designing, (3) operating and (4) harvesting. It contains 18 CVN fields, which are all interrelated and interdependent, and cover the overall CV program lifecycle to apply to all types of industries and/or regions (PR1). The CVN framework should be viewed as an iterative process that continuously provides input to previous, subsequent and other CVN elements. All the framework's elements are interconnected as they provide and

receive input from each other (TR1). Additionally, the CVN framework should be viewed from the perspective of the CV program as a whole, as well as from the perspective of individual projects within a portfolio during the last two phases (the operations and harvesting phases). The CVN framework should be applied to new CV programs and current CV programs for optimization (PR2).

CV navigation will be based on the **Profiling phase**, which will begin with providing answers the main question of what the CV mandate is to accomplish. As a next step, this phase will support a CV program to determine what CV profile is aimed for, which stakeholders to be involved and which ones are key players. Then discussion about budget availability and budget requirements for a chosen CV mandate are to be made as well as discussion taken on what business progress to be sought. This is where the foundation of the CV program is built - the CV cornerstones provide the impetus to move forward in subsequent phases. Goal of this first phase is to have a clear understanding about what the objectives are, and which expectations are pursued.

In the **Designing phase**, corporates will be able to navigate through all the elements required to build the CV program, while defining a corresponding rollout plan. The Designing phase defines the underlying structure and governance. The organizational and legal structure will be disclosed, upon which the CV program is built on. This can range from a very independent CV unit, e.g., in the form of a subsidiary, which is self-sufficient in terms of budget and decision-making, to a fully integrated unit under the umbrella of the parent company. In analogue, the reporting line will be laid out as well as the committee constellation, e.g., an investment committee or advisory committee. As soon as the structure and governance form are organized, the CVC team with a corresponding background and culture is then set-up. The team size is to be determined, the compensation structure and, eventually, the additional non-monetary incentives required to gain high-quality personnel. Finally, the location of the team, which can be either close to the mother company or locally separated, is decided. Building on the structures now established, it is then important to install excellent communication systems and an appropriate ecosystem. This requires identifying which tools are already available to be used to guarantee the best

communication and reporting between all promoters involved transparency and a consistent up-to-date exchange of information is key. Relatedly, available networks and ecosystem attributes can be determining, and are hence to be clarified and installed. By the end of the phase, corresponding details about what kind of CV program is run, which portfolio approach is followed and which CV program USP is hold, are elaborated.

Subsequently, the **Operating phase** then builds on the established components and decisions from the previous phases. Here, support will be received in the actual operation of the CV program. The CVN will facilitate the sourcing and portfolio management and will provide tool components for optimized deal flow management. However, the CVN also supports collaboration with ventures, the parent company including management and the Business Units, and collaboration with other parties—not forgetting the shared resources and syndication. Through the navigator, access to partnerships, a suppliers/ consumer network, R&D expertise amongst others, will be provided. Resources from and beyond the mother company are there to be leveraged for you as much as possible. The goal of this phase is to learn where and what CV value is generated. That is the main task-adding value to drive corporate innovation.

After the long phase of value creation, in which many ventures will perish but a few will shine, comes the **Harvesting phase**. In this phase, the question of whether objectives have been achieved, stakeholders satisfied, and value realized must be answered to decide whether companies should receive follow-on investment and whether the CV program should continue or end.

Artefact #2: CVN cockpit

Along with the unresolved dilemma of CV survival and the inability to successfully set up and operate a CV program (Hill and Birkinshaw, 2014; Prokop, Huggins and Bristow, 2019), there is also an absence of tracking and measuring strategic value and the process of the CV program as such (Chiang, 2018). This lack of transparency and traceability of CV investments is a major problem as CV programs offer no way to track the success of investments or tweak certain aspects if they are not performing as they should. Therefore, a practical tool to decipher the overall innovation return is needed. When

they are unable to display or track the performance of their CV portfolios, companies often find themselves in a situation where they need to justify CV investments without "throwing money out the window" (Huang and Madhavan, 2020) simply because they are not able to share the progress and value created by the program. Therefore, the motivation to establish transparency and better communication about the process and the opportunity to optimize the CV program are very strong. Accordingly, this problem and motivation lead to the artefact that concerns the objective of developing a sound academic approach to achieving financial and strategic value through CV investments. The goal is to provide a comprehensive understanding of the mechanisms behind achieving expected CV performance to make CV programs more robust and deliver the value promised to the corporate parent. The artefact thus holds the ultimate implication for achieving improved or promising CV operations as it is supported by data-driven decision-making and better insights into the CV investment neural system. CV performance goals can be realized as the financial and strategic returns on innovation are made transparent and tangible. The practical requirements that emphasize those objectives are reflected by the “relevance cycle” and are presented in Table 1. The theoretical requirements, which are identified by the literature on the “rigor cycle”, are represented in Table 3.

Table 3: Theoretical requirements of the CVN cockpit

TR, #	Requirement description	Relevant source(s)
TR1	The artefact should be a reproducible approach to measuring the strategic value for widespread adoption of these methods.	Chiang (2018)
TR2	The artefact should represent a more complete picture of CV investment.	Napp and Minshall, (2011)
TR3	The artefact should be easy to apply with minimum effort (minimal manual involvement) to guarantee great application in practice.	Bassen et al. (2006)
TR4	The artefact should improve corporate decision-making to better leverage the benefits of synergistic CV investments.	Kann (2000)

Source: Authors own analysis and illustration.

After deriving appropriate terms from these specific practical and theoretical requirements, we defined "coverage of the big picture", "ease of use" and "broad application" as overarching design principles for the artefact per March and Smith (1995). The artefact is considered easy to apply if there are no bureaucratic obstacles or unnecessary complexity and the interests of the stakeholders involved are taken into account, reflected and highlighted (TR3). The challenge in this case is to adequately understand the individual CV elements of sometimes specific CV programs, despite their ease of use. As only isolated solutions for capturing strategic value added are currently available, a generalizable, standardized tool has been requested, but it must not miss the dynamics and interdependencies of an entire CV program.

Once the problem, motivation, objectives and corresponding requirements were established, the next step that followed was design and development, which was complemented by design- and development-centric initiation. The CVN cockpit concept encompasses several tools and levels and aims to take a reproducible, holistic approach that makes all CV values measurable (TR1; TR2). Overall, the cockpit comprises the cockpit sheets (the CV specs) for each phase and different tools that can help stakeholders and the CV team facilitate and improve the CV processes throughout the CV program cycle. CV decision-making is to be facilitated and simplified to better reap the benefits of synergistic CV investments (TR4). Then there are two levels to examine: the investment level and the portfolio level, with the benchmarking level acting as a third perspective for future enhancement.

For optimal use of the CV components, an intuitive and easy-to-use CVN cockpit is developed, which is the framework and steering wheel of the CVN. Here, one or more outcomes of each CVN phase is to be found, to make results tangible and applicable in practice. The mechanisms and dynamics behind this are to be applied in practice and enriched by research. Each CVN phase leads to a CV program memorandum, which feeds the CVN cockpit with essential information and data. All phase outcomes combined, collected in the CVN cockpit, then result in the ideal, self-contained, coherent CV program concept. The cockpit is also divided into four parts:

(1) Cockpit Phase I

The Cockpit Phase I contains the “Cockpit Specs I” (Appendix Figure 2) and the tools “Know Your Profile” (Appendix Figure 3) and “The Onion” (Appendix Figure 4).

The “Cockpit Specs I” were designed to help CV teams and other stakeholders develop a clear understanding of the different options and choices to be made at each stage. It highlights the available options and clarifies interrelationships and dependencies within a phase and beyond. Accordingly, in Phase I, deciding the direction of a CV profile is the first action to be taken. Objectives are to be clearly stated and ranked in order of importance. Information on the budget must be filled in, starting with the amount, time horizon and availability. Then, the stakeholders to be involved are to be named, especially stakeholders from the company management, as well as any potential sponsors, if applicable. Finally, business advancements must be made clear (i.e., which CV investment direction is to be targeted, whether that is core business, adjacent businesses, or new business areas, if not a mixture of these). In summary, a very clear and structured overview of the elements of Phase I of a CV program and the preferred CV preferences are provided.

The "Know Your Profile" tool was designed to provide CV stakeholders with a support instrument to define their predominant CV profile orientation. The tool has two layers: the input layer and the output layer, which is also known as “the spider web”. In the input layer, the four most common directions (strategy renewal, financial return, innovation and culture) are indicated along with their underlying objectives. Each objective is to be scored on a scale of "0" to "2," with 0 meaning <<no importance>>, 1 meaning <<certainly importance>> and 2 meaning <<important>>. The total points are then added to obtain a score that indicates the tendency of the profile. Dual direction is possible but rather unusual and should be bypassed to avoid conflicts. As a result, a visualization of the CV profile is provided in the output layer.

According to the CV profile type chosen, the investments must be mapped with the support of “The Onion” tool along three investment options:

- Core business areas.
- Adjacent business areas.
- New business areas.

Investments in core business areas have little distance from the corporate parent and inside-out innovation. Investments in adjacent business areas have medium distance from the corporate parent and inside-out and outside-in innovation, while investments in new business areas are the furthest distance from the corporate parent and have outside-in innovation. What needs to be considered is the risk level. The risk increases when:

- investments are further away from the core business due to missing knowhow on the business area and increasing uncertainty about the investment environment;
- the further innovation originated outside the corporation due to an increasing loss of control.

Regarding the selected CV profile direction, it is necessary to decide how business development should be designed and what level of risk is acceptable. This tool presents potential options.

(2) Cockpit Phase II

The Cockpit Phase II contains the “Cockpit Specs II” (see Appendix Figure 5) and several tools such as the “Organizational Structure Modes” (Appendix Figure 6) and the “Legal Structure Modes” (Appendix Figure 7), as well as the “RACI” tool (Appendix Figure 8).

Analog to the “Cockpit Specs I” in Phase I, the “Cockpit Specs II” act as a guideline for making decisions during the design phase. The first decisions to be made concern the organizational and legal structure (e.g., autonomy vs. integration or subsidiary vs. within the company). Then decisions about the budget, fund or balance sheet and the size of the budget are required, which are typically followed by establishing the reporting line and general handling decision-making. All of these decisions must be reconciled with each other and with the chosen CV mandate. This step is followed by the determination of co-

investors, as well as whether they are desired and whether they can lead. This also involves the number of board mandates, the members of the investment committee and possible advisory committee and, finally, compliance and other governance factors.

Regarding structure and governance, there are two additional tools at hand. First, the “Organizational Structure Modes” instrument (see Appendix Figure 6), which details the various possibilities that were mapped out during the design phase, such as the integrated, dependent CV solution up to the self-sufficient, independent CV solution. Second, the "Legal Structure Modes" tool (see Appendix Figure 7) describes the two main options for the CV program: the independent entity and the corporate entity (subsidiary) with all its sub-options. These two tools should enable management and the CV team to better understand the options available to them and the resulting degrees of freedom and design.

Decisions about the team are also required: the size of the team, the desired background (e.g., corporate or entrepreneurial), the recruitment process (e.g., by the CV unit or the company), the compensation structure (e.g., corporate vs. VC structure) and other incentives for initiation need to be determined. Furthermore, the location of the team needs to be decided to create transparency and awareness.

As the team plays a very important role in the CV program, a specific tool, the "RACI", was developed to help CV stakeholders better understand the responsibilities within the CV process (see Appendix Figure 8). The project leadership, the project team and the business units or other functions are assigned corresponding responsibilities that relate to the various phases and tasks that need to be completed. The responsibilities include the roles "R: Responsible", "A: Accountable", "C: Consulted" and "I: Informed". The desired outcome of using this tool is the development of a clear picture of the involvement and roles of each stakeholder group.

After the decisions have been made about the structure, decisions must be made about the communication. The management and the CV team need to decide on the communication style (e.g., hierarchical, or flat) and the communication tools to be used (e.g., additional tools and channels to those of the parent company, such as channels and

tools for interacting with start-ups). Internal and external communication also must be distinguished, while decisions on the reporting form and timing are required.

The next point in the Cockpit Specs II is the ecosystem. The aim is to clarify which networks are available and should be used and which ecosystem attributes, such as centrality, should be assessed. The development of ecosystem relationships should then take place, which can comprise personal ties or business connections. This can then potentially play a critical role in the success of the CV program. Management needs to clarify what expertise is available and accessible, among other ecosystem factors that could be important.

The final section of the Cockpit Specs II is the portfolio approach, which should be determined in accordance with the selected CV mandate. The decisions within the portfolio approach cover the following factors: the number of companies to invest in; the industry, sector and stage to focus on depending on business advancements that were decided on previously; the number of investments to choose in line with the available budget; the instruments (stakes) that are preferred (e.g., minority investments, pure collaborations, strategic alliances, etc.); the holding period for the ventures and the USP to offer to them; and other factors. In addition to the specification aspects defined for Phases I and II, the specs and milestones for the subsequent phases must also be discussed and determined in the rollout plan to enable implementation.

(3) Cockpit Phase III

The Cockpit Phase III contains the "Cockpit Specs III" (Appendix Figure *10*), which cover the deal flow and portfolio management, the collaboration, shared resources and syndication and the capture and measurement of CV value that is generated.

The first step of this phase involves determining the screening process. It can be either active or passive venture sourcing, thesis-based, topic-based or based on the business-advancement agenda of the parent company as indicated in the CV mandate. Screening can span multiple stages and require certain approval mechanisms that must be applied. The duration of the screening process and the dynamics of portfolio development and monitoring also require management decision-making.

Collaboration with ventures, BUs, management and other parties requires a set framework. Collaboration with ventures includes potential board or observer seats, access to partnerships and networks and R&D or technical expertise, as well as finding co-investors, other types of financial transactions, marketing and PR. Collaboration with BUs and management in general may include sharing information about the needs and development of the business, regular updates on the development of the portfolio or possible steps to integrate the ventures and financial or general participation in the progress of the CV.

As part of the collaboration, decisions need to be made about potential shared resources, such as whether to have access to partnerships and supplier/customer networks, access to R&D and technical expertise, access to infrastructure, access to marketing and PR and recruitment support, information about capabilities and opportunities and threats, knowledge flows, or training on certain topics and skills.

The main outcome of the cockpit is then to capture and measure CV's added value. Therefore, evaluation elements need to be selected, such as the tracking tool, frequency of reporting, form of reporting, reporting tools, certain robustness checks (such as the alignment with established objectives and mandate) and other evaluation aspects that are specific to an industry or region. An initial design for measuring CV value was developed as part of the tool "Value-Add Generator". CV value generation must be looked at from three perspectives, the single investment, the portfolio and the benchmark. The first two were set in focus for this tool. Lens 1 is the generated CV value "per investment" that provides insight into the objectives set, prioritized and achieved and illustrates the evolution of CV investments over time. Lens 2 is the generated CV value "per portfolio" that demonstrates how CV investments feed into overall CV portfolio goals. The evolution of the overall portfolio, and thus the generated CV value, is viewed over time. Lens 3, CV value "as a benchmark" is included but left outside the cockpit. The idea was to simply illustrate the CV return on innovation development from the benchmarking perspective against other CV programs. An overview of the lenses is provided in Appendix Figure 9. The value-add generator then describes the five subsequent steps of how value is generated.

(i) Objective standardization of an investment: Along the CV profile, the priority objectives pursued are displayed and ranked in order of importance. (ii) Objective prioritization: The objectives, which are ranked by importance, are then weighted upward to bring them into better proportion. This approach was chosen because some of the CV directions contain more possible targets than others. (iii) Objective measurement: Objectives are measured along three options: conditional measurements (yes/no), monetary (EUR) and non-monetary measurements (numbers). These are supported by measuring the enablers that contribute to the achievement of the defined objectives. Enablers include the budget, skills and capabilities, business and business unit collaboration, and management and other party involvement and are measured using planned vs. achieved outcomes and additional specific information (those are listed in more detail in the cockpit specs for Phase III). (iv) Investment development: This step presents an overview of all risk parameters (investment size, phase, etc.), the objectives sought, the mechanisms used, and the progress made in creating value in the form of a dashboard. (v) Adjustments: At last, the CV value that is generated contains the adjustment part, which is the iterative ongoing loop of validating the initial objectives that were set.

(4) Cockpit Phase IV

Finally, the Cockpit Phase IV with its "Cockpit Specs IV" (Appendix Figure 11) embraces the evaluation of the CV program and involves the decision-making for the next steps. These can be threefold: the termination of the CV program and, at a more detailed level, the termination of the venture investments; the continuation of the CV program with follow-up investments; and the integration of the venture into the parent company. The direction can be set at the beginning of the CV program's launch by specifying whether integration is the ultimate goal. The cockpit sheets and the value creation generator are largely identical to those from Cockpit Specs III; the only difference is that here, the final decisions and the measurement of specific investments and the portfolio are made and evaluated instead of the development of the CV program being recorded and measured toward set objectives.

The CVN Cockpit, which covers the entire CV program lifecycle, should be viewed as an iterative process that continuously provides input to previous, subsequent and additional CVN elements. All individual cockpit phases are interconnected and provide and receive input from each other. The CVN cockpit was designed to be applied to new and ongoing CV programs for optimization, the creation of value-add transparency and measurability along the program. Detached from the cockpit phases and the tools provided, the CV cockpit is to be viewed through a two-layer architecture. Accordingly, this involves the following factors:

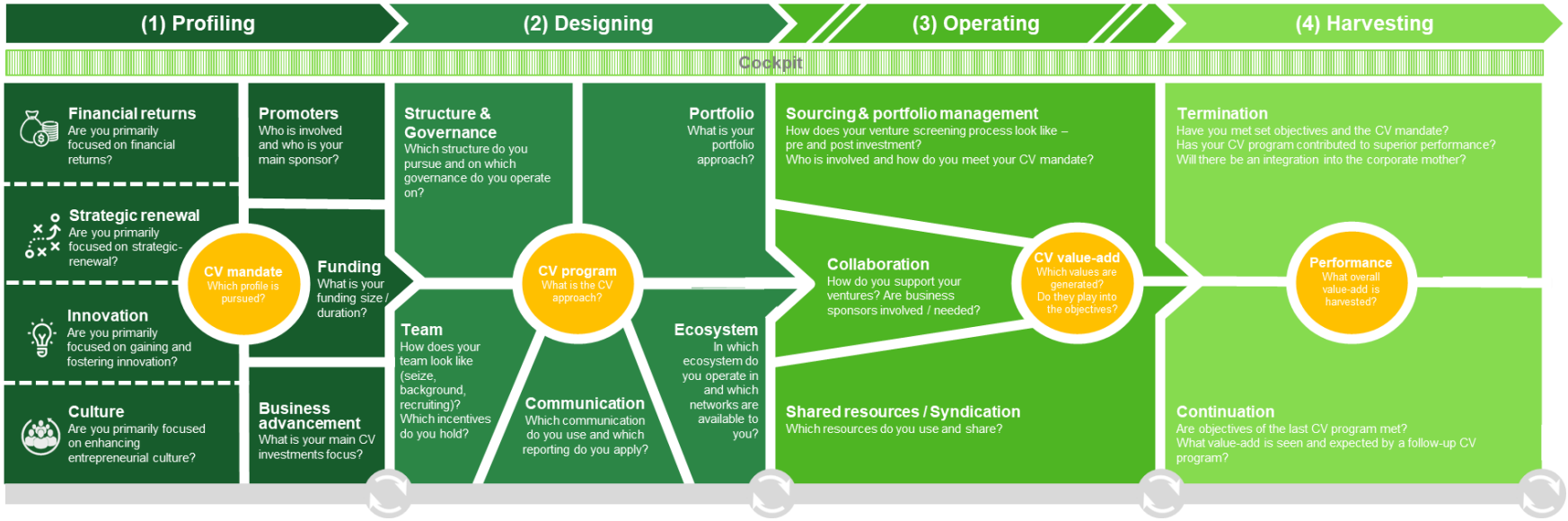
(i) Return on innovation per investment;

(ii) Return on innovation per portfolio.

Overall, the first two phases can be viewed without a perspective differentiation as the decisions made in those phases are independent of the individual investments and the entire portfolio. However, a distinction must be made in Phases III and IV as the phase elements apply to each individual investment but must also be considered for the overall portfolio as a whole. Certain mechanisms and dynamics apply to the two perspectives.

Evaluation of the artefact and communication about it are important parts to be looked at. The evaluation measured the extent to which the artefact provides a solution to the stated problem, and the goals were compared to the actual observed results of using the artefact in context. A decision was made regarding whether to return to the design and development step to enhance effectiveness of the artefact or to proceed to the communication part, in which all aspects of the problem and the designed artefact are presented towards the stakeholders. These steps are to be addressed in the future. Focuses is to be laid on evaluating the artefact's concept in practice to test and further improve the artefact and anchor it in the business environment in the best possible way.

Figure 1: Corporate Venturing Navigator



Source: Author's own illustration.

Discussion of the artefacts

Target audience and intended usage

CVN's primary target audience is companies that either already have a CV program in place or are thinking about implementing one. There are no restrictions in terms of industry or regional reach. Target customers include parent company management, business unit managers, innovation departments, business development and strategy departments, support functions such as human resources and finance, the CV unit or independent units that include the CV manager and operational team and SMEs. The SMEs may come from within the company or outside it. Other external parties that are part of the CVN's target audience include law firms (regarding the contractual part), VC players (regarding co-investments), ventures, and the start-up ecosystem. Rather insignificant target groups are governments and universities, which have also started to conduct corporate venturing activities but have not been targeted directly with the CVN.

Overall, the CVN, the framework and the cockpit should be used before the start of a CV program and during the development of a CV program (PR2). The target audience has demanded a standardized tool for all different types of CV programs, with different industrial and regional backgrounds (PR1), while the CVN should be flexible to allow requirements across CV programs and to deal with dynamics and interdependencies (PR3). Companies have asked for a tool that is easy to use and does not impose high bureaucratic hurdles (PR4); such a tool should be embedded throughout an organization to ensure its effectiveness (PR5). Companies see the greatest benefit of the CVN as continuing to create value for the parent company, fostering business innovation and securing the company's future raison d'être.

Validity of the application method

Considering the first iterations of the CVN, we summarize and discuss the benefits and the market needs for the two artefacts, which were originally derived from the practical and theoretical requirements in advance of the outstanding in-depth evaluation.

First, the overall goal of applying the DSR method in this paper was to produce an artefact (in this case, two artefacts, the CVN framework and the CVN cockpit) that would be thoroughly evaluated before its implementation in the real ecosystem where the problem must be solved. As described by March and Smith (1995), key contributions of this approach include the activities of discovery (making or proposing scientific claims) and reasoning (testing scientific claims for validity) in the natural sciences. Those are separate from (but concurrent with) the activities of building (constructing an artefact for a specific purpose) and evaluating (determining how well the artefact works) the artefact using design science (March and Smith, 1995). Such a distinction was later revised by Hevner et al. (2004). This required relevant and rigorous research but may have also led to ambiguity about how to view theory development and validation in DSR. In addition to DSR, the ABV and BTF offered further insight into enabling and explaining CV and its effectiveness on the corporate parent. The application of the ABV provides an explanation for corporate behaviour, particularly management attention, as companies seize, decipher and focus on novel opportunities while arguing that attention is not synonymous with success. However, drawing on the BTF provides the necessary answers as it explains management's reactions and thus the company's responses to performance feedback. Consideration of these two theories was paramount to developing an artefact that could create and enable an optimal CVN.

Second, both the CVN framework and the CVN cockpit have come under increasing demand in recent years, which highlights the need for and lack of satisfactory research studies. This paper demonstrates that existing research is unclear and incomplete on how best to build, operate and terminate a CV program and achieve value for a parent company. Several researchers have highlighted that the continuation of CV activities is conditionally guaranteed as many CV programs have failed and have not contributed to business performance and growth as expected. Simultaneously, initial approaches that were made by scholars or island solutions that were developed by corporates were not yet sufficient or implemented as general practice. Initial discussions with companies, therefore, highlighted the current, challenging problems of CV programs. These companies perceived the CVN

as a useful tool for overcoming existing shortcomings. The CVN framework and CVN cockpit have attracted considerable interest from companies as they have the potential to become a "best-in-class" solution (i.e., a single-source solution that encompasses a common and coherent approach to set-up and operation, thus enabling, in particular, the capture and measurement of value generated along the process and the systematic execution of CV programs).

We therefore conclude that the *Corporate Venturing Navigator* that has been presented is a valuable and significant move towards a practicable and essential solution, although the current version needs further development to reach full market readiness. Proper evaluation and iteration have not been covered in this paper as it will be covered in a separate evaluation study. This is a matter of observing how effective and efficient the two artefacts are and then feeding them back to the design for improvement. The final step is communication and complete embedment in the business environment. The following section outlines the current limitations and future areas of research regarding the tool.

Limitations and future research directions

This study was affected by several limitations that require further research. First, the most important limitation stems from the inherent methodological decision to make a trade-off between research breadth and research depth. The qualitative study focuses on the available academic research, which tends to be fragmented, if not partially contradictory, while relying on collaboration with a handful of CV programs to provide practical insights into otherwise closed decision-making processes and data. This also limits the breadth of the study. As a consequence, the artefact development phase, including the derivative of practical requirements, was largely dependent on the perspective of the collaborating firms, and generalizability should be viewed with caution. For this reason, the evaluation study, should place great emphasis on extensive evaluation iterations of the developed artefacts in the form of dedicated case studies to ensure the external validity of initial exploratory results. In line, biases may have been present up to this point as the companies involved in the development process may have had a limited view of certain requirements. The application scope should be expanded to cover more industries and regions. In particular,

industries such as financial services and pharmaceuticals are subject to more complex regulations and have different or additional requirements, but certain regions such as highly regulated countries may also have very different requirements than others.

Second, the development and iteration periods of the artefacts was short and should be prolonged. As previously indicated, the CV program goes through different maturity stages throughout its set period. This lens was not considered in the artefact development phase and requires further research, especially regarding the CV Cockpit artefact that captures the value generated during the CV program development.

Third, a key benefit of the two artefacts is the growing database for the further and better standardization of processes as specifics are uncovered and as certain dynamics and mechanisms become known. This holds true in particular for the CV Cockpit, which was designed to capture and measure CV value-adds that are generated. Further improvement on the strategic measurement KPIs is seen as beneficial and needed. This call for further research accompanies the development of a technical, automated tool that is fed and evaluated by an underlying, growing database. At this stage, the artefacts are only available as an initial theoretical concept but would be more useful and add more value to organizations as a dynamic, technical tool with, for example, a dashboard to depict the specifications of a CV program, its development and its contributions to the corporate parent. For future consideration, the technical tool could even be used as a benchmarking instrument that presents industry, regional and general competitor benchmarks that relate to certain CV program aspects. This would lead to greater transparency throughout the entire CV market, Shortcomings in innovation progress could be easily identified, and improvements could be easily initiated, which would benefit the overall CV ecosystem's development. Other considerations for the future include analysing past and present data and using the function of forecasting the future of CV activities to create even more scope for improved planning and adaptation and, thus, increased CV investment activity.

Conclusion

We have developed two artefacts, the CVN framework and the CVN cockpit to provide a practical guide for setting up, managing, closing, and calibrating CV activities while adding value to CV program development. The CVN framework serves as a useful blueprint for efficiently and effectively launching and operating CV programs to take business innovation to the next level. The CVN cockpit makes a valuable contribution in this context as it is one of the first tools that not only enables transparency within the CV program process but also makes the value generated measurable and thus ultimately more controllable. As a result, the comprehensive and coherent CVN provides a deeper understanding of the underlying dynamics and mechanisms with distinction regarding the specifics of the different CV activity phases. The CVN approach helps improve current and new CV investments by identifying pitfalls and future policy issues and enabling management to better deal with internal and external forces of disruption and change, thereby achieving positive impacts for sustainable competitive advantage. This is enabled by the CVN cockpit, which has the capability to decipher the return on innovation for both financially and strategically oriented CV practices. New management insights on CV advancement led to better self-assessment capabilities for financial and strategic value creation. Insights into the impact and origin of CV-added value impulses were created, and weak points were identified. Current barriers and future opportunities that were identified through the created transparency regarding CV value creation can be made visible and put into practice. An enhanced academic understanding of CV operations is expected to contribute positively to business performance. By developing the artefact, we have contributed to the further application of design science research while referring to the theories of ABV and BTF as both theories in combination provide profound explanations of when CV practices are required, how a particular CV effect can be realized and what pattern of organizational attention influences firm survival. Overall, the research question "what (additional) value can be added to a CV program by applying the CVN?" is answered.

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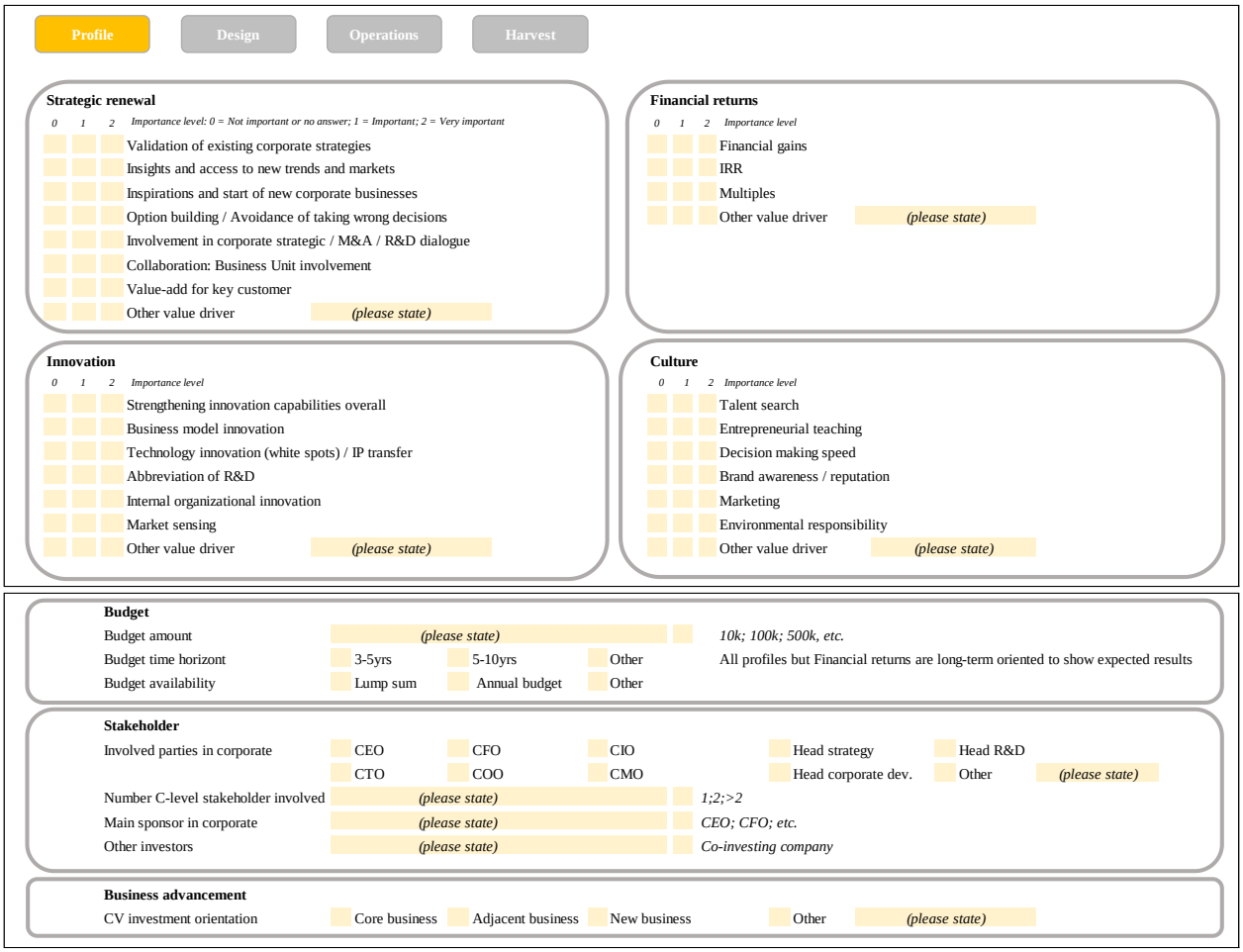
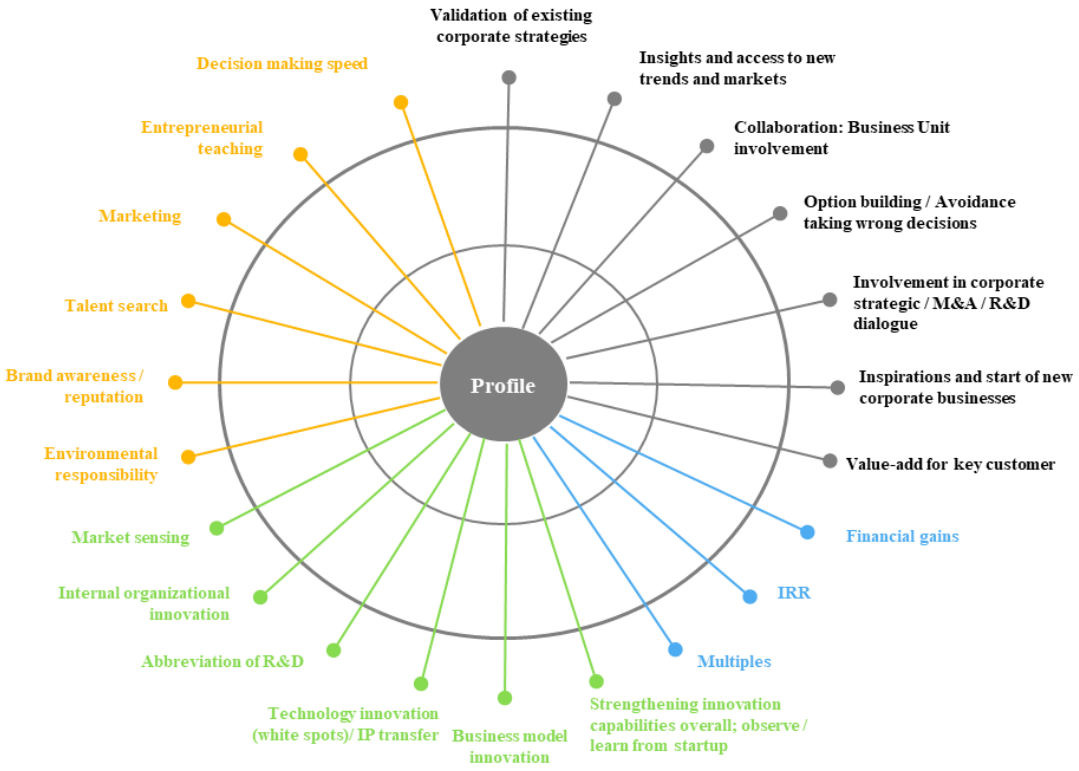
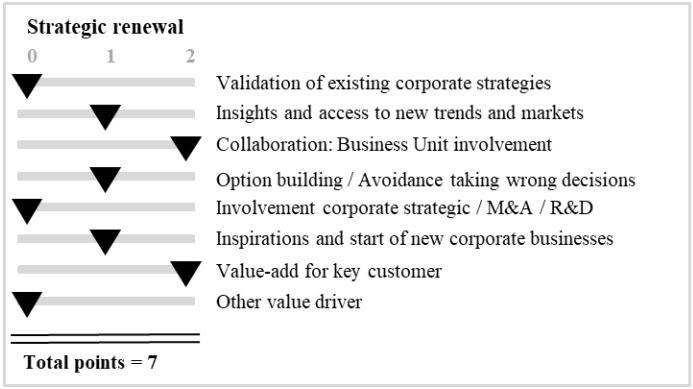
Appendix Figure 2: CVN Cockpit specs (Phase I)

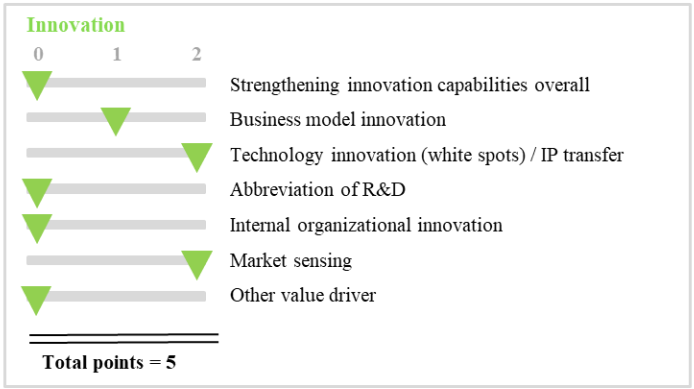


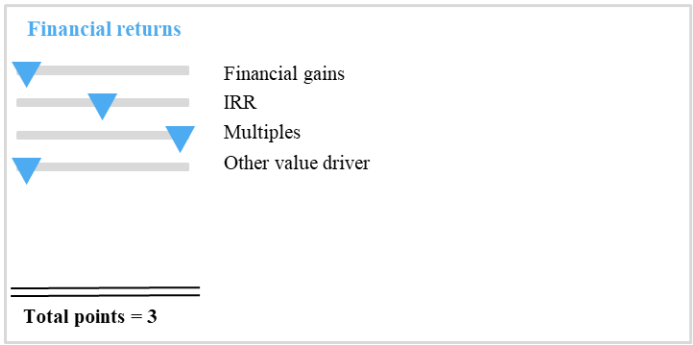
Source: Author's own illustration.

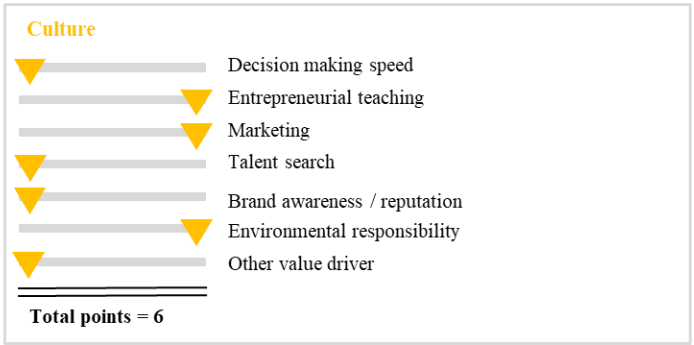
Appendix Figure 3: CVN Cockpit: Know your profile tool





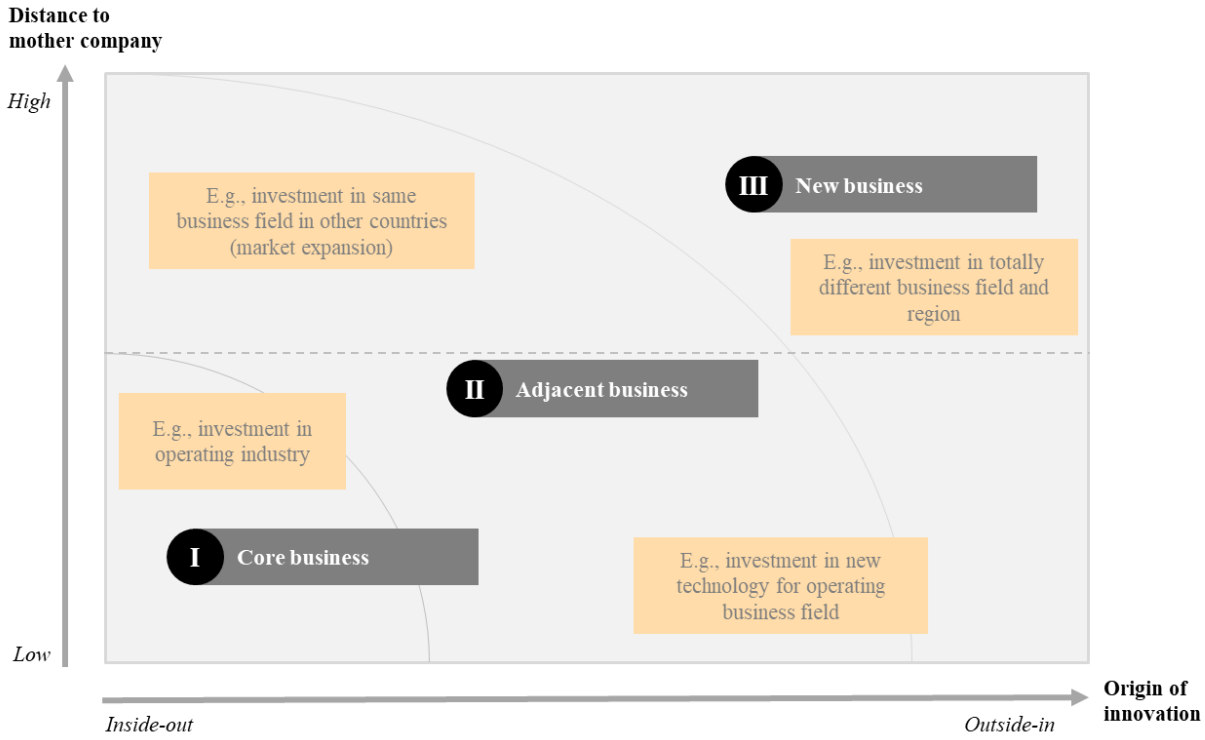






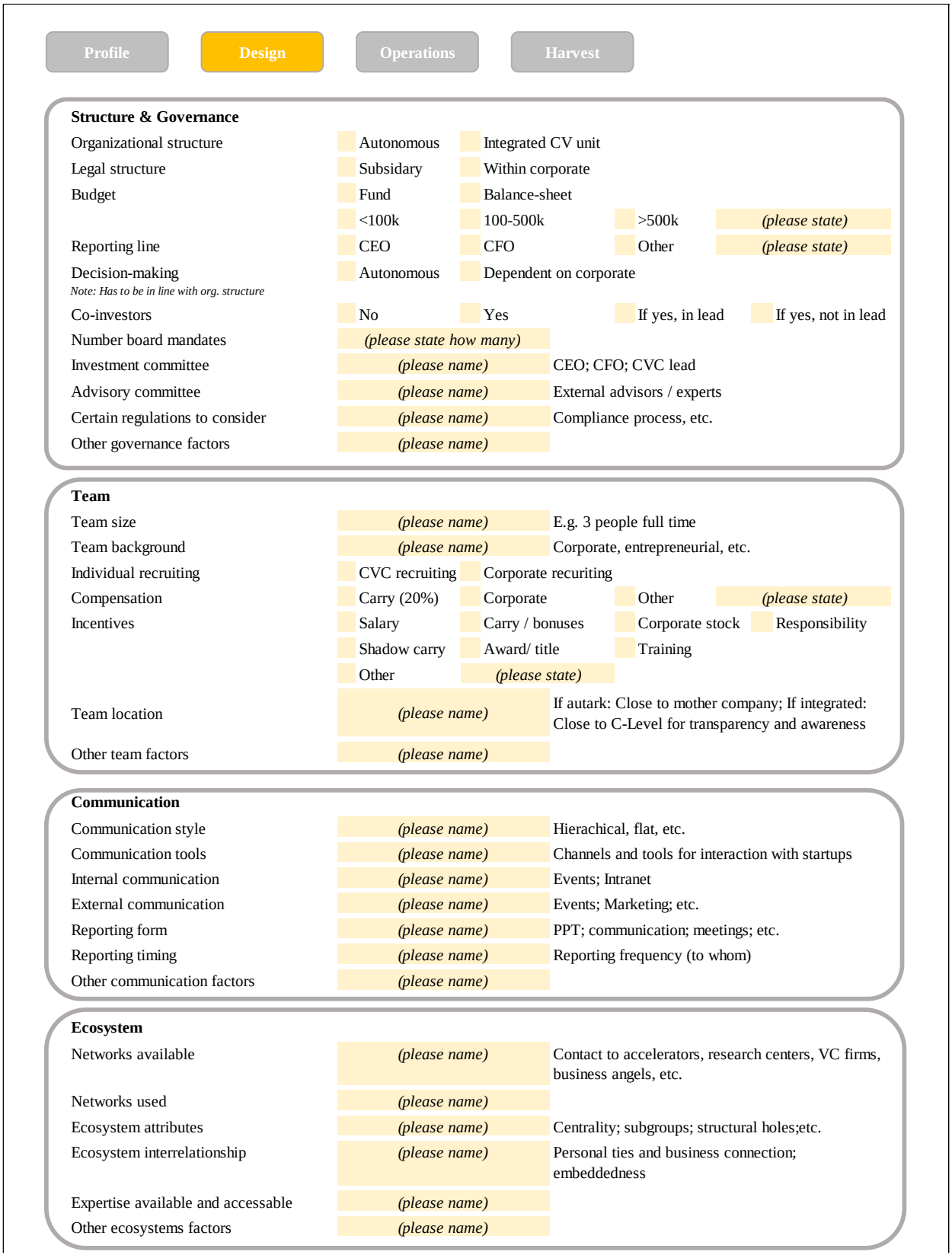
Source: Author's own illustration; Note: « 0 »= Not important or no answer; « 1 » = Somehow important; « 2 » = Important.

Appendix Figure 4: CVN Cockpit: The Onion



Source: Author's own illustration.

Appendix Figure 5: CVN Cockpit Specs (Phase II)



Portfolio approach		
Focused number of startups	*(please name)*	<5; 5-10; 11-15;16-20;>20
Focused industry	*(please name)*	Automotive; Pharma; Energy; Retail; etc.
Focused area	*(please name)*	GSA; Europe; US; etc.
Focused stage	*(please name)*	Seed; Series A; Series B; etc.
Focused investment sum	*(please name)*	<10k;10-50k;>50k;
Instruments (stakes)	*(please name)*	Minority investment; collaboration only; strategic alliance; etc.
Holding time	*(please name)*	<3yrs; 3-5yrs;>5yrs
USP for startups	*(please name)*	Resources; brand; etc.
Other portfolio approach factors	*(please name)*	

Rollout plan		
Milestone: Profile overall	**Achieved**	**Open**
Profile/ CV orientation set	Achieved	Open
Budget set	Achieved	Open
Stakeholder known	Achieved	Open
Business advancements known	Achieved	Open
Milestone Design overall	**Achieved**	**Open**
Structure set	Achieved	Open
Governance known	Achieved	Open
Team set	Achieved	Open
Communication set	Achieved	Open
Networks set	Achieved	Open
Portfolio approach set	Achieved	Open
Rollout plan set	Achieved	Open
Milestone Operations overall	**Achieved**	**Open**
Dealflow set	Achieved	Open
Collaboration set	Achieved	Open
Evaluation set	Achieved	Open
Milestone Harvesting overall	**Achieved**	**Open**
Termination set	Achieved	Open
Continuation set	Achieved	Open
Performance known	Achieved	Open

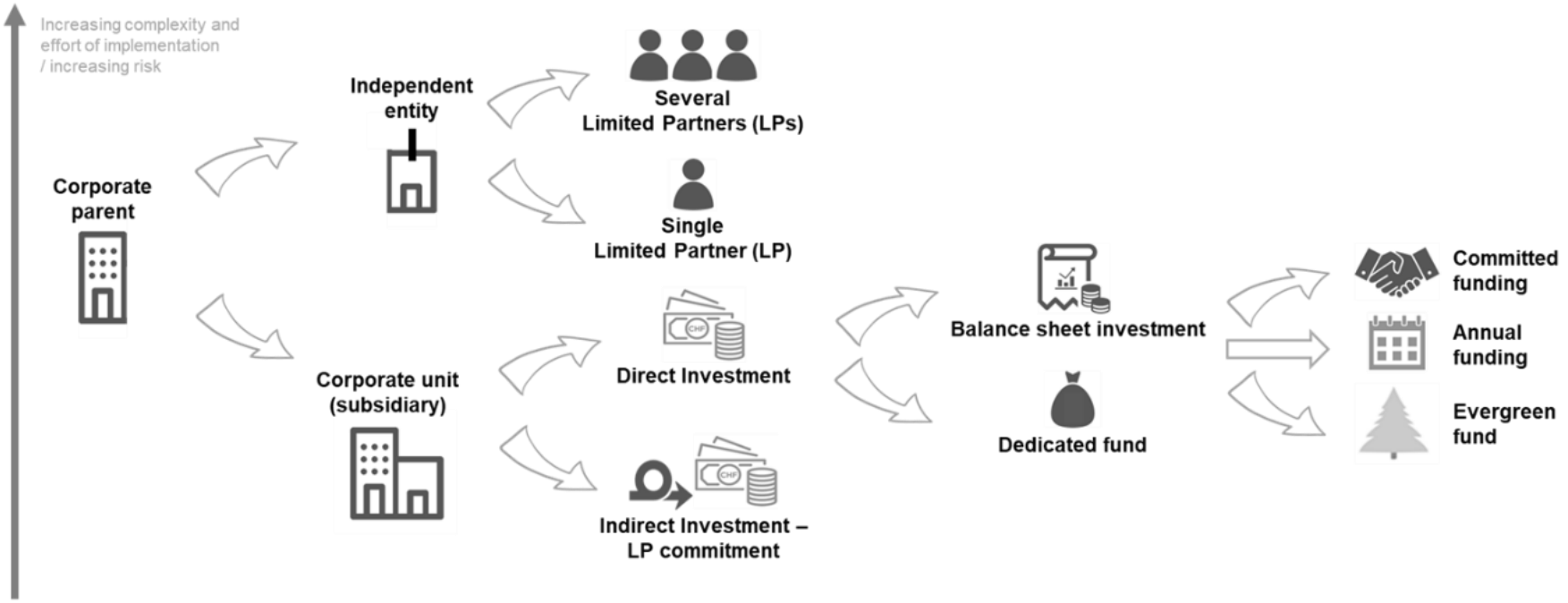
Source: Author's own illustration.

Appendix Figure 6: CV organizational structure modes

	Integrated (Business Unit alignment)	Independent but integrated	Independent
Positioning in the market	Integrated in mothership / corporate unit / department	Independ positioning but systematically aligned with mothership	Independent positioning and clearly independent from mothership
Strategic industry focus	100% aligned with parent; regularly updated through corporate business; Horizon 1 and Horizon 2	>50% aligned with parent; regularly updated through corporate business but with flexibility; Horizon 1, 2 and 3	Generally aligned; otherwise completely independent Horizon 2 and 3
Team	Staffed with corporate personnel	Mix of corporate staff and external experts	Mostly external experts
Compensation/ incentives	Standard corporate compensation and incentives	Standard corporate schemes and optionally additional VC-like incentives	VC-like compensation and incentives
Investment committee	Staffed by corporate management	Staffed by corporate management and optional external experts	Selected corporate management and mostly external experts
Restrictions/ specifications	Corporate bureaucracy; use of corporate processes, systems, regulations	Partly corporate bureaucracy if not independent system and processes	Independent system and processes; rather lean and agile
Examples	Axa; Siemens Healthineers; Straumann; Nestlé; Deutsche Bank	PM Equity Partners; Bertelsmann Investments; Hitachi Ventures; Samsung Catalyst Fund; Shell Ventures	Intel Capital; GV

Source: Author's own illustration.

Appendix Figure 7: CV legal structure modes



Source: Author's own illustration inspired by a report on 500 start-ups, 2019.

Appendix Figure 8: CV team: RACI

R: Responsible
A: Accountable
C: Consulted
I: Informed

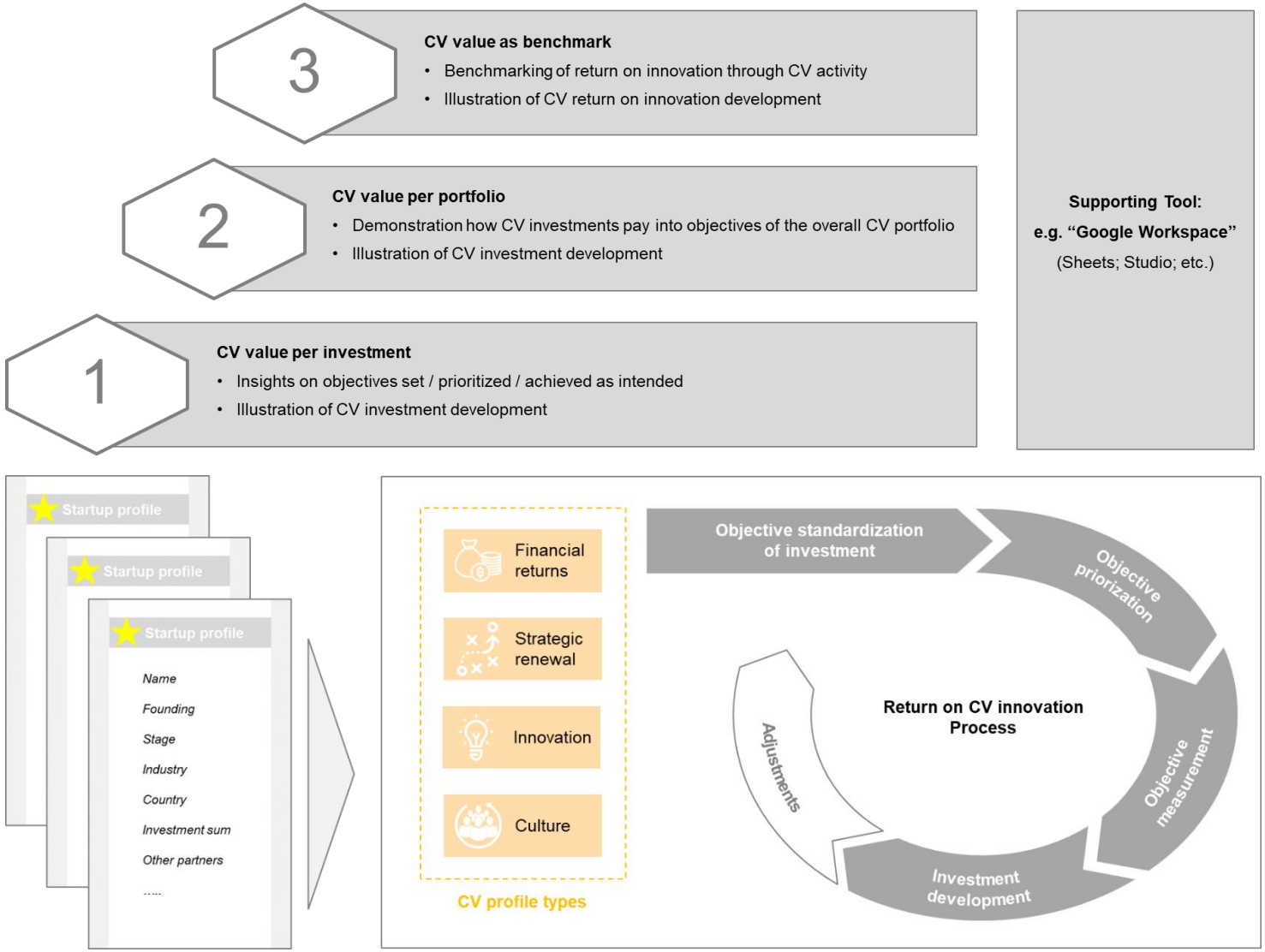
CVC program	Executive sponsor	Other executive(s)	Investment committee	Advisory committee	CVC unit leader	Senior invest. professional	Junior invest. professional	BU head(s)
	Project leadership				Project team			Business Unit(s)
CV program **profiling**								
Defining CV mandate								
Specifying CV objectives								
Determining budget								
Determining promoters								
Setting business advancements								
CV program **designing**								
Set-up structure								
Set-up governance								
Build team								
Install communication systems and process								
Establish ecosystem								
CV program operating								
Investment portfolio strategy / development								
Deal flow sourcing / DDs / business modelling								
Build and manage external networks for deal sourcing								
Reporting and program performance								
Collaboration startups (active / passive)								
Collaboration with BUs / R&D / strategy department								
Events / Marketing								

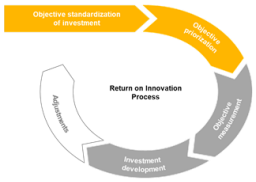
R: Responsible
A: Accountable
C: Consulted
I: Informed

CVC program	Project leadership				Project team			Business Unit(s)
	Executive sponsor	Other executive(s)	Investment committee	Advisory committee	CVC unit leader	Senior invest. professional	Junior invest. professional	BU head(s)
CV program **harvesting**								
Program termination								
Program continuation / follow-up rounds								

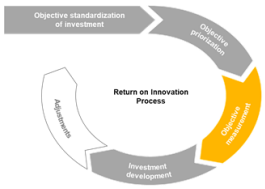
Source: Author's own illustration.

Appendix Figure 9: CVN Cockpit dynamics





Objective standardization	Objective priorization	Weighting
Market access	RANK 1: e.g. Market access	2x
Market insights	RANK 2: e.g. Tech access	2x
Tech access	RANK 3: e.g. Market insights	2x
Tech insights	RANK 4: e.g. Options	1x
Options	RANK 5: e.g. Tech insights	-
….	RANK XX: ….	….



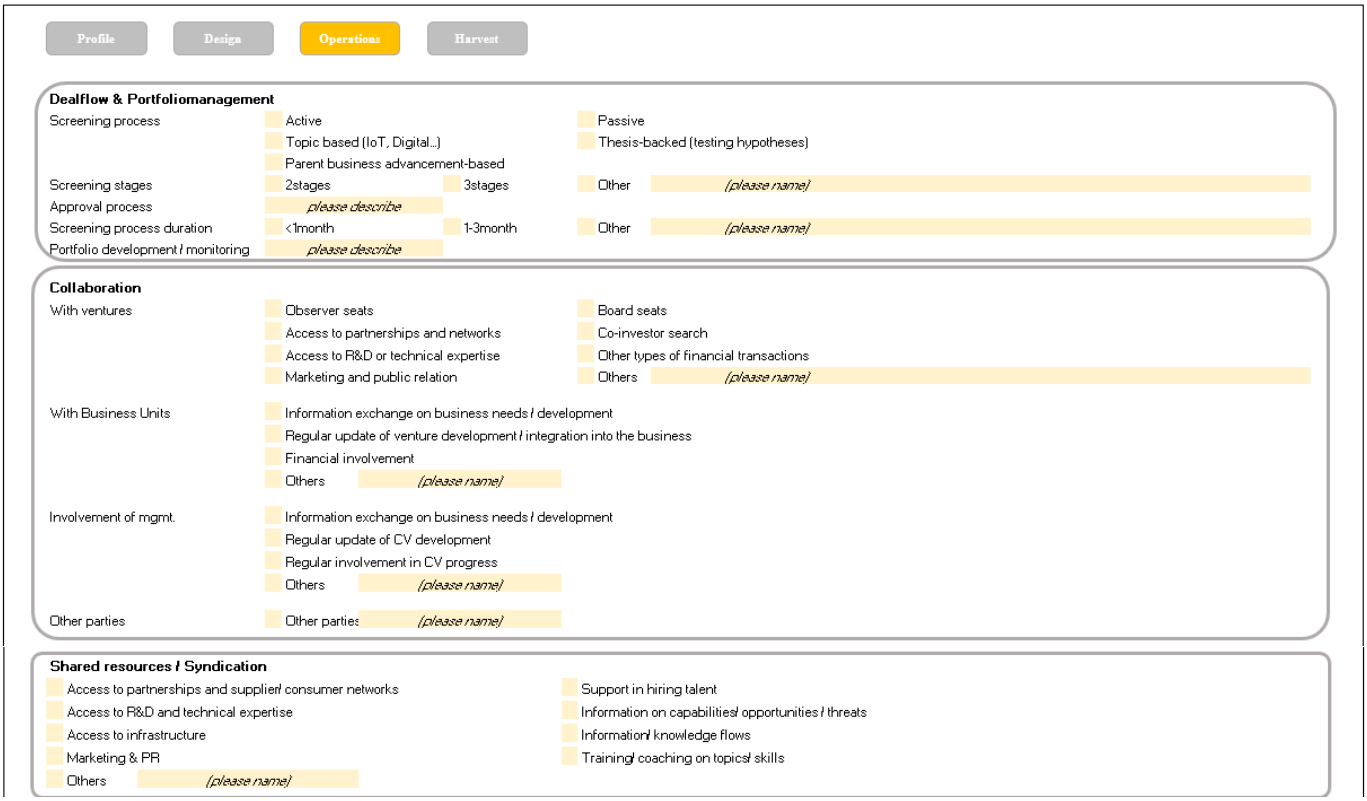
Prepared objectives
RANK 1: e.g. Market access
RANK 2: e.g. Tech access
RANK 3: e.g. Market insights
RANK 4: e.g. Options
RANK 5: e.g. Tech insights
RANK XX: ….

Matching

Measurement	
CONDITIONAL 1 - Yes 0 - No	• Milestones met on time • New markets covered • New technologies integrated • Startup engagement • Reputation & brand building • …..
QUANTIFIABLE: NON-MONITARY Ranking 0-5 0 is lowest 5 is highest	• Number new customers / contacts through collaboration • Number of signed contracts and joint agreements • Number dialogues with startups • …..
QUANTIFIABLE: MONITARY In EUR	• Revenue from new introduced products / services • Cost savings through collaboration • Employee Turnover Rate (ETR) • …..

Source: Author's own illustration.

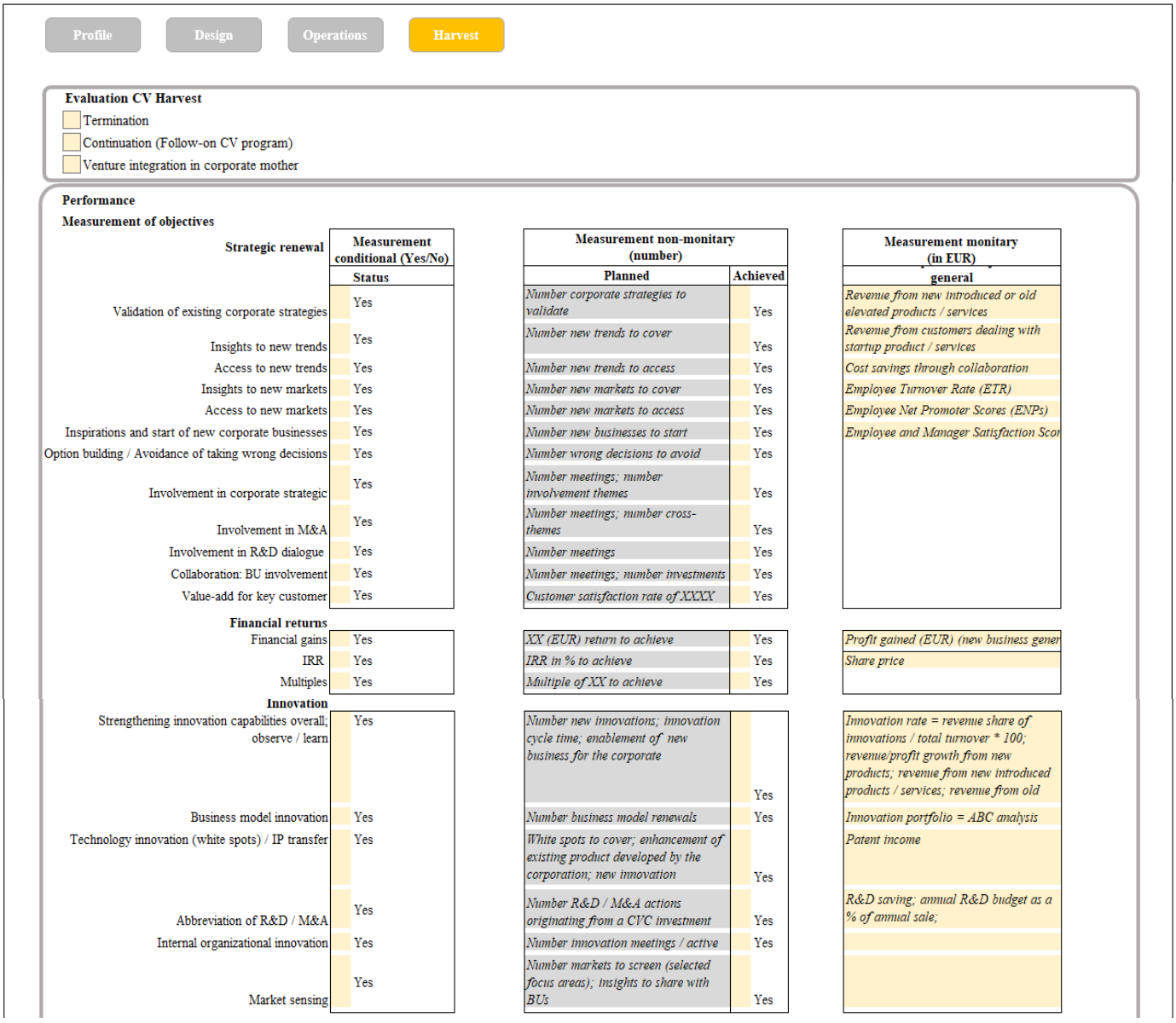
Appendix Figure 10: CVN Cockpit Specs (Phase III)



Note: Same KPIs for value-add measurement as in Phase IV (see Appendix Figure 17).

Source: Author's own illustration.

Appendix Figure 11: CVN Cockpit Specs (Phase IV)



Profile | Design | Operations | Harvest

Evaluation CV Harvest

- ☐ Termination
- ☐ Continuation (Follow-on CV program)
- ☐ Venture integration in corporate mother

Performance

Measurement of objectives

Strategic renewal	Measurement conditional (Yes/No)	Measurement non-monitary (number)		Measurement monitary (in EUR)
	Status	Planned	Achieved	general
Validation of existing corporate strategies	Yes	*Number corporate strategies to validate*	Yes	*Revenue from new introduced or old elevated products / services*
Insights to new trends	Yes	*Number new trends to cover*	Yes	*Revenue from customers dealing with startup product / services*
Access to new trends	Yes	*Number new trends to access*	Yes	*Cost savings through collaboration*
Insights to new markets	Yes	*Number new markets to cover*	Yes	*Employee Turnover Rate (ETR)*
Access to new markets	Yes	*Number new markets to access*	Yes	*Employee Net Promoter Scores (ENPs)*
Inspirations and start of new corporate businesses	Yes	*Number new businesses to start*	Yes	*Employee and Manager Satisfaction Scor*
Option building / Avoidance of taking wrong decisions	Yes	*Number wrong decisions to avoid*	Yes	
Involvement in corporate strategic	Yes	*Number meetings; number involvement themes*	Yes	
Involvement in M&A	Yes	*Number meetings; number cross-themes*	Yes	
Involvement in R&D dialogue	Yes	*Number meetings*	Yes	
Collaboration: BU involvement	Yes	*Number meetings; number investments*	Yes	
Value-add for key customer	Yes	*Customer satisfaction rate of XXXX*	Yes	
Financial returns				
Financial gains	Yes	*XX (EUR) return to achieve*	Yes	*Profit gained (EUR) (new business gener*
IRR	Yes	*IRR in % to achieve*	Yes	*Share price*
Multiples	Yes	*Multiple of XX to achieve*	Yes	
Innovation				
Strengthening innovation capabilities overall; observe / learn	Yes	*Number new innovations; innovation cycle time; enablement of new business for the corporate*	Yes	*Innovation rate = revenue share of innovations / total turnover * 100; revenue/profit growth from new products; revenue from new introduced products / services; revenue from old*
Business model innovation	Yes	*Number business model renewals*	Yes	*Innovation portfolio = ABC analysis*
Technology innovation (white spots) / IP transfer	Yes	*White spots to cover; enhancement of existing product developed by the corporation; new innovation*	Yes	*Patent income*
Abbreviation of R&D / M&A	Yes	*Number R&D / M&A actions originating from a CVC investment*	Yes	*R&D saving; annual R&D budget as a % of annual sale;*
Internal organizational innovation	Yes	*Number innovation meetings / active*	Yes	
Market sensing	Yes	*Number markets to screen (selected focus areas); insights to share with BUs*	Yes	

Measurement of enablers

		Planned	Achieved	
Budget				
Budget used	Yes	*XX amount to use*	Yes	*XX EUR*
Capabilities / Skills				
Top mgmt. support (companywide acceptance of	Yes	*Planned mgmt. representation of CV (events; announcements; etc.)*	Yes	*Income through new IP generated*
Expansion of network	Yes	*Number network parties; specific relationship secured through*	Yes	*Employee Turnover Rate; Employee Net Promoter Score;*
Scouting, startups under review	Yes	*Number startups screened*	Yes	-
Targets evaluated in detail	Yes	*Number DDs*	Yes	-
Investments negociated and signed	Yes	*Number new startups*	Yes	-
Startup used / knowhow or skills incorporated	Yes	*Startups knowhow / capabilities incorporated*	Yes	-
Milestones met on time	Yes	*Number milestones met*	Yes	-
First mover advantage	Yes	*Number one on the market; press*	Yes	-
Risk acceptance	Yes	*Number risk taking; number project failures*	Yes	-
Talent available	Yes	*Number of hires with venture background*	Yes	-
Culture				
Talent search	Yes	*Number interviews; new staff*	Yes	
preneurial teaching	Yes	*Number teaching units and participants; knowhow and skills gap covered; award; number culture*	Yes	*Educational budget used*
Decision making speed	Yes	*Number meetings per project planned; errors made; number culture conflicts; Agility (lean time scales, reduced customer complaints, better*	Yes	*ROI; project budget saved*
Brand awareness / reputation	Yes	*Customer satisfaction; Net promoter score*	Yes	
Marketing	Yes	*Number of startup events hosted / participated; number of netions (social listening for reputation); Number of "likes" / "followers" /*	Yes	*Marketing budget*
Environmental responsibility	Yes	*Number environmental projects; % of innovations that include sustainability goals; % sustainability awareness training penetration; acore energy / emission / emission footprint*	Yes	*Environmental costs or budget; percentage of environmental targets achieved; CSR index*
Collaboration with ventures				
Observer seats	Yes	*Number meeting participat*	Yes	*Cost savings through collaboration;*
Access to partnerships and networks	Yes	*Number usage; number new customers / contacts*	Yes	
Access to R&D or technical expertise	Yes	*Number usage; Usage of*	Yes	
Marketing and public relation	Yes	*Good press*	Yes	
Board seats	Yes	*Startup involvement*	Yes	
Co-investor search	Yes	*Number co-investor search*	Yes	
her types of financial transactions	Yes	*Number transactions*	Yes	
llaboration with Business Units				
Information exchange on business needs / development	Yes	*Number of meetings/ round*	Yes	*BU savings through collaboration; revenues generated; (time saved)*
Regular update of venture development / integration into the business	Yes	*Number of updates / briefi*	Yes	
Joint investment theme developed	Yes	*Number of themes develop*		
Financial involvement	Yes	*Number involvement*	Yes	
Involvement of mgmt.				
nation exchange on business needs / development	Yes	*Number meetings; announc*	Yes	*Revenues, savings, risk reduction,*
Regular update of CV development	Yes	*Number updates; frequency of engagement*	Yes	*Anecdotal parent business impact success stories*
Regular involvement in CV progress	Yes	*Number invovlements*	Yes	*Mutual benefit metrics such as startup co*
Collaboration other parties				
Other parties	Yes	*Number of partnerships or co-development effort; partnership engagement*	Yes	

Source: Author's own illustration.

Appendix Table 4: Interview list CVN

Corporate parent	CV arm/ Corporate unit	Contact person
Philipp Morris	PM Equity	Managing Director
Shell	Shell Ventures	Managing Director
Samsung	Samsung Catalyst Fund	Managing Director
Nestle	R&D	Head of
Bertelsmann	Bertelsmann Investments	Managing Director
Axa	Axa Venture Partners	Head of
Deutsche Bank	Strategic Projects and Transactions	Head of
Siemens Healthineers	New Business Development	Head of

Source: Author's own illustration.