Organic Finance Framework: Aligning Financing Complexity with Organisational Complexity (for Innovative Companies)

P. Pöltner and T. Grechenig

***Abstract*—The organic finance framework is a new tool for managing the challenges of corporate financing. This framework is especially useful for small and medium-sized enterprises in the time of a crisis, such as the COVID-19 pandemic. At its core, the framework forces a rethink of the manner in which companies initiate their financing approach. In contrast to finding potential external sources of finance, the organic finance framework starts by looking at the relevant stakeholders of the company. Alternative financing methods, such as crowdfunding and crowdinvesting, have demonstrated that companies can work with potential future customers at an early stage in the company lifecycle to finance the development of an offering. Thus, the organic finance framework presents a global structural visualisation of the corporate financing domain that can help business owners to better align the lifecycle of a company with its funding sources.**

***Index Terms*—Alternative financing, corporate financing, crowdfunding, start-ups.**

I. Introduction

Companies typically face multiple challenges during their lifecycles. Among these, societal changes force companies to adapt. With remote work, increasingly people are not only increasingly working from home in terms of location but also within their own one-person companies (through self-employment). This work structure warrants that organisations should develop alternative forms of incentives [1], [2]. Moreover, in the search for talent, companies are forced to look outside their home countries, not to reduce wage costs but to gain access to the required trained workforce. [3]

Service delivery and production are becoming increasingly interconnected across organisations. Consequently, organisations are becoming more complex [4], [5]. This increased complexity has upped the pace of international development, thus boosting competition in both the domestic and international markets. Therefore, companies need to focus on the local and the international markets to ensure that they are not replaced. Continuous innovation throughout the lifecycle of a specific product or service has become a core element of the organisations processes already.

In view of these changes, companies must find a way to finance their activities. They must attract investors and build the required connections at an early stage to ensure that they do not exhaust their cash reserves and file for insolvency. The proposed framework considers the dynamics of various financing sources and outlines how these sources can be better aligned with a company's lifecycle. The overall goal is to reduce pressure on the company, so that the management and the employees can focus on the operative tasks of the company and not on the complexities of financing.

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Authors are with Institute of Information Systems Engineering Research Group for Industrial Software (INSO)), Austria (e-mail: Paul.poeltner@inso.tuwien.ac.at).

II. Traditional Way of Financing

A. Funding Lifecycle

The traditional way of financing starts in the pre-seed phase, where a company researches possible solutions for the later implementation. In this phase, funding mainly depends on the entrepreneur and their family. In the United States, 80% of businesses are started with personal or family money, and only 18% ever access a bank loan. Additionally, only 0.6% businesses are started with venture capital (VC) [6]. Especially in Europe, grants play an important role in the funding of early-stage companies. According to the Austrian Startup Monitor 2018, 81.2% companies are financed with their own savings, followed by 55% with public subsidies. Angel investors follow in the third place [7]. In Germany, approximately 80.8% of all new companies are funded with their own savings, followed by 39.2% with public subsidies, and 29.3% with money provided by family and friends [8]. At the EU level, 77.8% of all new companies are funded with savings of the founders, 30.2% with money from family and friends, 29% with funds provided by business angels, 26.3% with VC, 20.7% with funds provided by incubators, and 20% with public subsidies [9]. In the seed phase, the first minimum viable product is developed and tested in the market. For this stage, business angels and crowdfunding are emerging funding sources. If an innovative company is able to prove the existence of a market, early-stage VC funds show interest in the company. A rule of the thumb is that a company should generate a revenue of 1 million EUR to appear interesting. From there on, company funding proceeds in ever-increasing follow-up funding rounds until the company goes public, is sold, or becomes profitable and distributes dividends (in the best case). Schuster evaluated the number of funding rounds in the early-stage fund speedinvest and visualized the associated activities [10]. According to Schuster's results, funding need not necessarily start with small investing rounds and progress to bigger investing rounds. Instead, it is a very company-specific process, with different ups and downs for each company.

According to the Austrian Startup Monitor 2019, the main challenge for a growing company is securing financial

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resources, followed by the development of networks and partners. In general, cashflow/liquidity is the main challenges facing innovative companies, followed by sales. Moreover, the report pointed out that the main funding source for start-ups in Austria is self-savings, followed by public grants [11]. The trend is similar in Germany, where the main funding source is self-savings, followed by grants. Compared to Austria, the rate of participation of family and friends is higher in Germany [8]. These results show that the main challenges facing start-ups are liquidity and finding customers to sell products to.

These two challenges must be solved separately in most cases, because investors, who provide funding, and customers, who buy products, do not overlap in the currently available financing instruments. Thus, the challenge facing a founder who is focused on fundraising is finding the time to simultaneously focus on sales, and the reverse is true as well. Especially at the beginning, founders are responsible for most of these tasks.

B. Business Angels

Throughout Europe, the average investment per business angel was approximately EUR 20,000 in 2014, and it increased to approximately EUR 24,000 by 2018. The average investment per company in 2018 was EUR 200,600 [12]. Moreover, the study pointed out that co-investment with other business angels was the norm [12]. It is easy for the majority of business angels to find co-investors among other business angels and difficult to find them among VC companies [13]. In his lecture, Brettel pointed out that there are four types of business angels. The first type is the selective caretaker, who spends a considerable amount of time with a start-up. This type of business angel is very selective and, in most cases, highly experienced as former manager or serial entrepreneur. The second type is the part-time angel, who spends less time with a start-up. This type of business angel normally has a full-time job and enough money to invest. The third type is the portfolio investor, who has many investments but spends less time with the companies in their portfolio. Normally, portfolio investors have young investment portfolios. The fourth type is the full-time angel investor, who has a diverse portfolio and spends time with the promising start-ups in the portfolio. [14] summarized in [15]. The majority of business angels are between 45 and 54 years old and have previously created their own ventures as entrepreneurs [13].

C. Venture Capital (VC)

VC is a form of investment in which private money is collected in a fund and invested into start-ups. Typically, a VC firm creates a limited partnership with other limited partners who invest in the fund. The VC firm acts as the general partner. The limited partners contribute funds in every round of investment ("capital call") [16]. VC is different from private equity (PE). Both VC and PE firms invest in non-listed private companies through a fund. Where VC firms invest in young risky companies and typically own fewer than half of the shares, PE firms invest in later-stage companies, which are either private or are delisted by the firm in an attempt to secure 100 % ownership [17]. The dominant market in this space is North America, but it has been diminishing. By contrast, deals in Europe and Asia are rising. According a PwC study in 2019, 6,366 deals with a total investment of USD 113 billion were made in North America, followed by 5,295 deals with a total investment of USD 63 billion in Asia, and 3,345 deals with a total investment of USD 32 billion in Europe [18]. In 2016, Gompers *et al*. conducted a study involving 681 different VC firms in the US. They found that out of 200 screened companies they make on average 4 deals, whereas 30 % of the deals come through the network. The most frequently mentioned factor, according to the study, for selecting a target was the management team (47 %), followed by business-related factors. Interestingly, the least important factors were fit with the fund and value addition. The investments themselves were valued using the metrics cash-to-cash return and internal rate of return (IRR). In terms of exit, the study showed that nearly 75% of the investments have been exited through acquisitions, not initial public offerings (IPOs). VC firms normally provide a variety of services to their targets, but quite interestingly, these services were not indicated as a success factor for companies. The team was mentioned as the most important success factor [19].

III. Challenge for Companies

Companies should find the appropriate sources of funding depending on their lifecycle and status. Each type of funding source comes with specific requirements for a company. At the beginning, the company structure can be very simple. The founders are investing only their own money in the company. At that stage, they are required to report only to themselves and to the state for tax purposes. Following the line of funding, in the next stage, family and friends are asked for help. Normally, there is a high level of trust, and they are personally reliable for this funding. The company structure at this stage is still not very complex. As discussed in the previous chapter, grants are a common form of funding. However, one must consider that grants require the grantees to report to the granting organisations in some additional ways. This increases the overhead of internal processes.

If the company able to develop the first prototype, business angels and VC organisations start showing interest in the company. With every new investor, the complexity of the company structure increases. A supervisory board is subsequently established, and additional reporting processes are put into place. The highest level of complexity of company structure is associated with listing of the company on a stock exchange. A separate position for investor relations has to be created fulfil the additional reporting requirements and ensure compliance with strict rules pertaining to communication. Banks play a special role because they support companies that either belong to established and well-known industries or have considerable assets and a predictable business model. In terms of the industries in which VC firms invest, approximately about 40% of the companies are from the ICT industry, 22% from services, 17% from life sciences, 11% from manufacturing, 8% from green technologies, and 2% others [20]. Based on these numbers, it can be said that VC firms largely invest in specific industries. Accordingly, it can be inferred that a company must adapt to the requirements of the type of funding source it selects. To reiterate, the selection of a more

complex form of funding requires the company to have a more complex structure, which, in turn, is more resource-intensive.

Sisney defined the universal formula for success as a function of integration over entropy (Fig. 1).

$$\text{Success} = \sum \left[\frac{\text{Integration}}{\text{Entropy}} \right]$$

Fig. 1. The universal formula for success explains why any system in the universe will fail or succeed [21].

In this function, "integration" measures the amount of energy gained by the system in form of money, resources, etc. The more energy the system gets, the better is its level of integration. Entropy refers to the amount of energy required to maintain the system, make decisions, and get work done [21]. The formula is based on the first and second laws of thermodynamics. The first law of "conservation" states that "*at any given point in time, the potential energy available to a system is finite*". This means that new energy has to come from outside. The second law of "entropy" states "*that every system falls apart over time*". Disintegration and disorder are all synonyms of entropy, and they deteriorate the system constantly from the inside. Furthermore, Sisney stated that "*The energy available to a system must always flow first to manage its entropy needs. Only after those needs are met, and if any energy is left over, it will be made available for integration. Therefore, the higher the level of entropy, the lower the level of success*" [21].

As the company lifecycle changes, the form of execution must be adapted to meet the requirements of the company's structure.

Thus, the company must select a company structure that fits the complexity of its lifecycle. Conventionally, financing starts with one's own savings, followed by family and friends. If a company gets some traction, business angels start showing interest and invest in the company. If the innovative company is able to grow at some point, VC organisations show their interest and support the company to grow faster. If the company is able to fulfil these growth expectations, banks provide support to bring the company to the financial market with the expectation that the company will be able to finance its own growth based on the cashflows acquired from selling their products/services to customers.

However, normally, companies do not follow this theoretical funding path. Instead, a company's path has multiple ups and downs. Moreover, as the number of funding rounds increases, the pressure from the investors on the company increases. The complexity introduced by the funding sources increases very rapidly, and the company is required to adhere to the resulting requirements. If this is not possible, the company must file for bankruptcy because it cannot overcome its own entropy, even though the product itself would have found a market.

IV. Organic Finance Framework

A. Core Elements of the Framework

The organic finance framework proposed herein is the result of our efforts to resolve the challenges facing today's companies. In traditional financing, a company is under high levels of pressure to acquire external sources of funding at a rate faster than that at which cash is spent for managing the company's internal complexity.

Therefore, the ultimate goal of any alternative to traditional financing should be a focus on achieving a positive cashflow. A positive cashflow is achieved by selling products or services. At the start, every company is necessarily financed with the founder's savings. Thus, the goal of the company should be to finance itself from its own cashflow at some point, which is the difference between revenue from customers and internal costs.

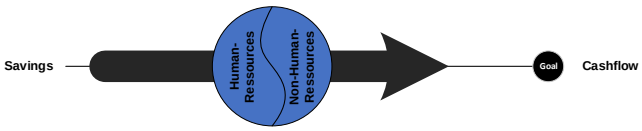

Fig. 2. Savings to cashflow.

To achieve this goal, the company needs to employee people or develop non-human resources that can deliver the proposed products or services (Fig. 2). With digitalisation, it is the responsibility of the organisation to find a good trade-off between using technology and enabling humans to be productive. Notably, this is normally not a one-time activity but rather a path or process, and the company must align itself with this path by walking it. With this view, in Fig. 2, company resources are denoted using the Yin and Yang Symbol. The two parts of the symbol represent different approaches to delivering a product or service, but they are strongly interlinked to provide an effective outcome to the customer.

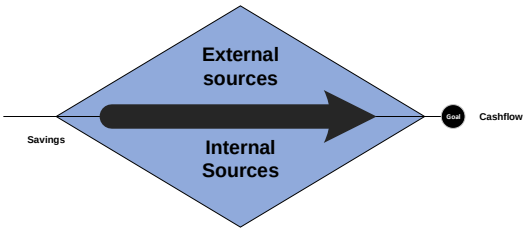

Fig. 3. External and internal sources of funding.

For achieving its goals, a company can use external and internal sources of funding (Fig. 3). The main internal sources are savings, followed by cashflow.

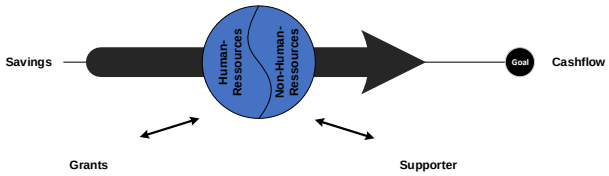

Fig. 4. Grants and supporters.

In the previous chapter, we showed that after own savings, grants are a major source of funding. These grants (public or state grants) support companies with taking the first steps towards developing the business. Additionally, some people in the company ecosystem support the company to develop itself (Fig. 4), even in the absence of direct monetary return. Thus, grants and supporters supplement the internal sources because these sources do not expect monetary return.

Then, there are external sources. The first component of external sources consists of the traditional forms of financing

(Fig. 5), which starts with funding from family and friends. If the company is able to gain some traction and the company operates in an industry that is interesting to business angels, they finance the company. Further up the financing ladder, at some point, the company will attract VC firms. They will support the company in taking the next steps until the company is sold to a large corporation, undergoes a management buyout, or is listed on a stock exchange through an IPO. Banks play a special role in company financing. Especially in the founding phase, they support a company only if it operates in a specific, well-known industry. Companies operating in other industries can get funding only at a later stage. Banks come into play again if there are VC companies invested in the company to support the company to take the next big steps, such as management buyout or listing on a stock exchange.

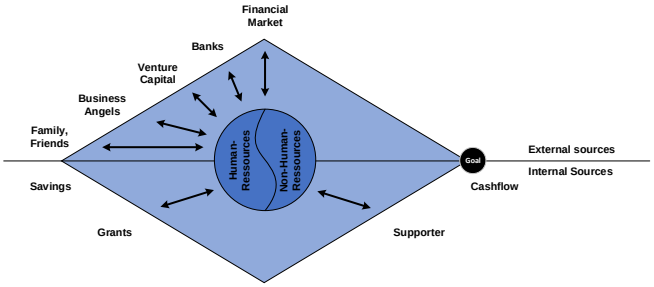

Fig. 5. Traditional external sources.

Additionally, as will be analysed in the next paragraph, with the addition of each funding source, company complexity increases. Funding from family and friends increases the level of complexity compared to that when using one's own funds. With business angels and, subsequently, VCs, additional forms of reporting and decision making are introduced, which increase the complexity and, therefore, the internal resources required to fulfil the requirements of various financing sources.

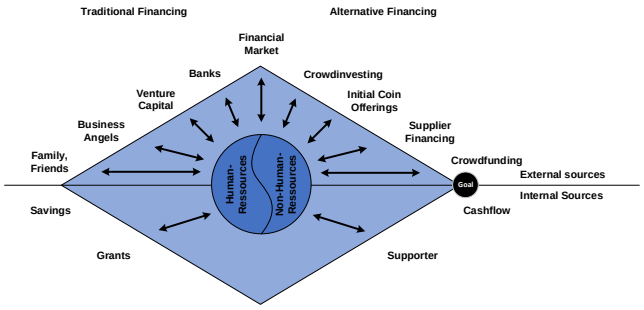

Fig. 6. Traditional financing vs. alternative financing.

In recent years, multiple alternative forms of financing have been established and used by companies. For instance, the first crowdfunding platforms were introduced in 2003 [22], followed by the establishment of large international platforms such as Kickstarter or Indiegogo in 2009/2008. At its core, a company that is seeking crowdfunding is essentially selling a concept-stage product or service, as opposed to a tangible product or service, to interested customers. The money collected in this manner from customers is used to develop, produce, and ship the product or service to the customers. Another route for raising money in this manner is supplier credits. Suppliers can support a partner company by providing a moratorium to pay for the ordered products. For a supplier, this can mean that a new sales channel (e.g., a social media sales channel) is developed by the partner company, which the supplier cannot develop by themselves. Another motivation for suppliers to provide support in this manner could be building a strong new customer or using the innovative company for its own reputation management.

A form of financing that was introduced in 2015 but has been heavily used since 2017 is the so-called initial coin offering. In this case, a company gives out a voucher or its own currency, which can be used at a later stage to buy the company's products or services. In contrast to crowdfunding, customers do not purchase a specific product or service when providing funding, but they get a voucher that can be used to avail the products or services of the company that are under development. Thus, cash flow occurs much earlier than the delivery of the product or service.

In general, crowdfunding can be segregated into various types. All types involve the use of digital forms of communication and payment to reach a broader community. In addition to product selling, there is the so-called reward-based crowdfunding, in which supporters fund a company with the expectation of recouping their investment. This form of funding is called crowdinvesting, and it can be structured as a loan or as a form of equity or mezzanine instrument. Thus, crowdinvesting can be used by a company to collect small funds from investors who have a strong interest in the company. The average investment with crowdinvesting is approximately EUR 1,000.

For a company, it is important to differentiate among the various financing instruments because each instrument imposes different internal requirements, thus increasing company complexity to different extents, as is the case with traditional forms of financing.

B. Dealing with Complexity

A company is not rigid and fixed over its entire lifecycle. Rather, it is very flexible and dynamic to ensure that it can adapt to upcoming changes. Fig. 7 shows that a company should adjust its structures and processes based on the different phases in its lifecycle.

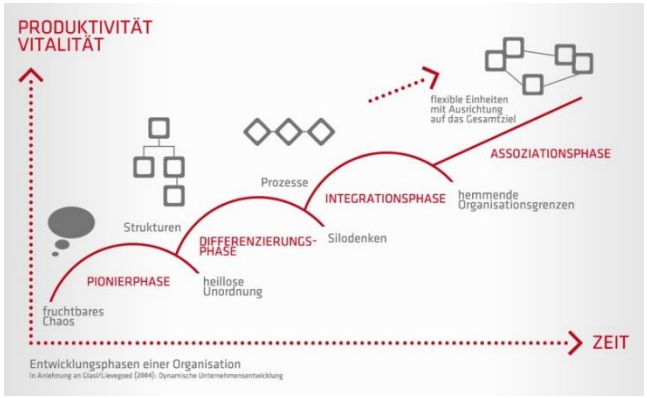

Fig. 7. Lifecycle of a company [23].

Moreover, the complexity of a company's structure changes and adapts to circumstances throughout its lifecycle. At the beginning, a company is rather chaotic and must be bound by a structure. Achieving this structure can lead the company to become too rigid to adapt. Thus, the company

must accept and adapt to a period of chaos to form a new structure. During the lifecycle of the company, different forms of funding can be used to support the implementation of various changes in the company.

In the organic financing framework, it is important to understand that the complexity of a company must be adjusted based on the complexity of its financing structure (Fig. 8).

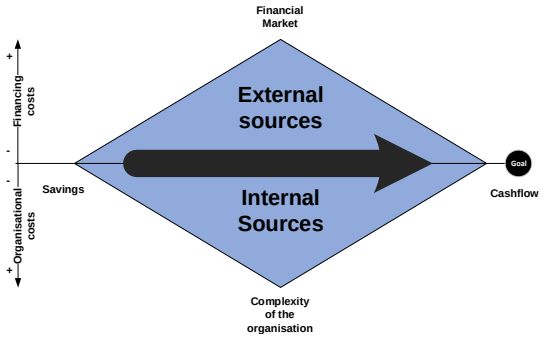

Fig. 8. Complexity.

In sum, the higher the complexity of a company, the higher are its internal costs, which means more external resources are required to overcome the entropy. Therefore, if the company complexity is high and the external sources of funding are low, the company is at a high risk of insolvency. By contrast, if the liquidity buffer of the external sources is high, the company has the room to experiment (Fig. 9).

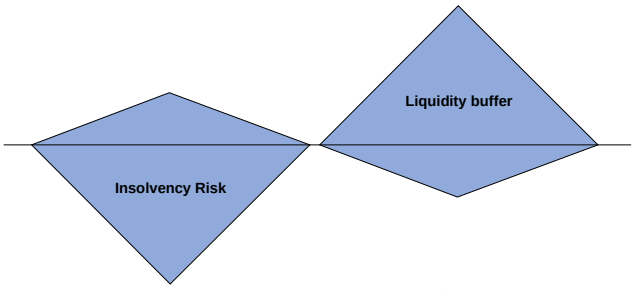

Fig. 9. Company success in terms of liquidity.

Therefore, it is very important for a company to adjust its complexity in line with its funding sources. Using excessively complex funding sources at a stage in which the company is unable to deal with the resulting complexity can harm the company.

C. Incentive Systems

Clark and Wilson identified three types of incentives [24]. The first type consists of material incentives, for example, money. The second type consists of solidary incentives, which are intangible (socializing, congeniality, sense of group membership and identification). The third type consists of purposive incentives. They are intangible as well, but they drive one to achieve the proposed end status (e.g. support to end corruption). They state that companies are yield by individuals because of incentives. These incentives are, by definition, scarce (like money the company has or the intangible resources that are not distributed equally throughout the company). Additionally, the incentive output must not exceed the available incentive resources (like payment of excessive wages will lead to bankruptcy). The goal of the company is to obtain a net surplus of incentives, which is what executives do to sustain the company. Depending of the type of company, different types of incentives can be more relevant [24].

Especially at the start of a company's lifecycle, only external sources can be used to finance the company's activities. Therefore, the company must build up an incentive system for external funding sources to reman liquid. The most common form of incentive is to pay interest. Interest refers to the payment of a fixed percentage of the borrowed money at predefined instants of time. To the borrower, this provides an estimate of the quantum of return. However, if the company is not generating income at that moment, it may not be able to pay interest. The more vulnerable the company, the higher will be the interest rates. At one point, the interest rate will exceed the potential of the company to pay. At that point, other types of funding must be considered, for instance, equity or equity-like funding sources. In this case, the investor does not receive a fixed interest but owns a part of the company. This means that the investors get a share of the profit and a share of the company's assets. In sum, investors can be incentivised not only through fixed interest payments but also through increases in company value.

Participation in a crowdfunding project triggers not only a financial return but also an intrinsic motivation to ensure that the specific product is developed and the feeling of being involved in the community [25]. Access to investment opportunities [26], [27] is a major driver for equity-based crowdfunding. Normally, investments are limited by location and ticket size. Moreover, only a limited group of people can invest in new big ideas. Crowdfunding offers the potential to expand this group of people. Early access to new products [26], [28] is, under some circumstances, a highly valued community benefit. At its core, reward-based crowdfunding takes advantage of this perceived value. In equity-based crowdfunding, bundling of product access with equity is an option. Moreover, participation in the development of the initiator [26] is a form of social activity. Supporters are also rewarded in the form of recognition from the initiator. This includes support towards product development for philanthropic reasons.

Belleflamme *et al*. analysed the conditions under which crowdfunding is more favourable for companies over traditional financing. In the first proposition, it is pointed out that the equilibrium profit decreases as with increases in the required capital and the minimum number of regular consumers needed to generate a community benefit. The higher the capital requirement, the higher must be the discount to attract a larger crowd. This reduces the company's profit. Furthermore, an increase in the magnitude of community benefits increases the profit equilibrium. In most cases, community benefits are less cost-intensive for companies that raise capital through crowdfunding. Crowdfunding allows companies to employ price discrimination between the crowdfunders and non-crowdfunders. The higher price can only be argued with the increase in the community benefit. This means that the company's capital is limited by the community benefit that can be provided and the number of regular consumers of the product who generate the community benefit. Lastly, an entrepreneur must have the credibility that they will not vanish with the money without delivering the product [28].

Therefore, in the proposed organic finance framework, it is important to consider the motivations and the driving forces of the people that support the company. As has been discussed earlier in the paper, monetary return is not always the driver. By specifically looking at people's intrinsic motivations, a company can better adjust its lifecycle and status with the funding sources it uses. In doing so, the company complexity can be reduced because its interests are better aligned with those of its investors. This reduction in complexity drives down the company's internal costs, thus hypothetically increasing the company's potential for success.

D. The Organic Financing Way

Putting all the elements together leads to a rethink of the forms of funding for companies (Fig. 10). A company should not start with attempts to attract traditional forms of funding. Instead, it should first look at its potential customers. Customers constitute the ultimate source of funding for any company. By using tools such as payment-in-advance or crowdfunding, a company can gauge the level of customer interest in its product or service offerings, in addition to securing the required funding for product or service development. Moreover, the complexity associated with setting up a reward-based crowdfunding campaign is aligned with the complexity associated with building a customer base for the company.

Supplier credits can be an additional source of funding for a company. As pointed out before, the incentive of having access to a new distribution channel or being involved in the development of a new product can be more valuable to a supplier than getting a high interest rate. This allows the company to build its supplier network and secure the funding required to develop the entire business.

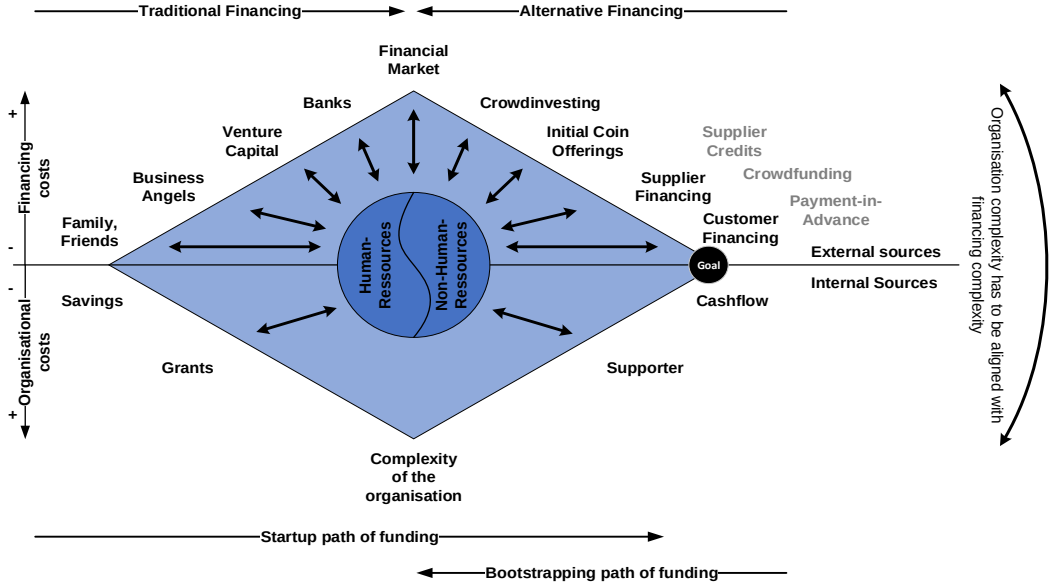

Fig. 10. The organic financing framework (or the organic way of company financing).

Traditional forms of funding should come into play when they can really trigger the big next step for the company or when they are considerably cheaper to attract. A bigger trigger can be to work with business angels and VC firms for securing support to build an international network, expand into new markets, or obtain the knowledge to scale up the company. Alternatively, a focus on the cashflow alone can create a situation in which banks might provide a line of credit to the company in its early stages, which might be cheaper than using other forms of funding.

The managing team of a company must adjust the complexity of its funding sources based on the complexity of the company's possibilities to ensure a consistent focus on the business and to achieve a positive cashflow at the end.

Funding from grants and supporters plays a major role. They have been added as internal sources in the proposed framework because they do not require a direct financial return. In a broad sense, supporters are the people who use the tools or support the company because they believe in the general purpose. Being involved in the development of the company and getting the latest news about the company's current activities are the incentives for these supporters. Grants play a special role because they are heavily used by companies, but they do require companies to follow some form of internal organisation. Depending on the type of grant, different requirements are imposed on the company, leading to different levels of complexity. Therefore, at the beginning, local or state grants may better fit the needs of the company. A large European project with external auditors and stringent reporting requirements might overwhelm the internal organisation of a young company and would lead to a level of organisational complexity that cannot be fulfilled at that point in time with the existing resources.

In sum, the organic finance framework helps visualise various traditional and alternative funding sources such that they can be easily aligned with the lifecycle of a company. Company founders and managers can use this framework to better understand the relationship between company complexity and funding sources and rethink the potential sources to start with the customer.

V. Conclusion

In this paper, we proposed an organic financing framework that can help company owners and managers to rethink

financing. In contrast to the conventional route of starting the funding process with family and friends, followed by business angels and VC, the proposed framework starts with the customer. A company's goal is to sell its products or services. In this light, gaining traction with customers to sell a product on the one hand and raising adequate liquidity to be able to pivot the newly created business model on the other hand is an optimal alignment for a young company.

Alternative financing is increasingly becoming a part of the company financing culture. The proposed organic financing framework provides a structural background that can be easily used, even by non-finance professionals, to understand the different forms of funding sources and their implied complexity from the viewpoint of a company. By doing so, founders and managers can better align the company's liquidity requirements and lifecycle with the selected funding source.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

The research has been conducted by Paul Pöltner and Thomas Grechenig. Paul Pöltner has analyzed the data and written the paper. All authors have approved the final version.

References

[1] Buffer. (2019). State of Remote Work 2019. [Online]. Available: https://buffer.com/state-of-remote-work-2019

[2] K. Kurzawska, "Top 6 challenges of a remote work and how to overcome them," *TimeCamp*, Mar. 12, 2018.

[3] C. Mitchell and S. Odland, "Survey: CEOs are worried about 3 things this year – and No. 1 is whether you plan to quit," *CNBC*, Jan. 28, 2019.

[4] V. E. Krebs. (2018). Managing the connected organization-agility and innovation in a 21st century organization. [Online]. Available: http://www.orgnet.com/MCO.html

[5] P. Pöltner and T. Grechenig, "A joint infrastructure of 'digital corporate organisms' as facilitator for a virtual digital retail ecosystem," *ResearchGate*, 2010.

[6] I. Samarajiva, "The best startup advice: Start rich," *Medium*, Dec. 17, 2019.

[7] K.-H. Leitner, G. Zahradnik, R. Dömötör, M. Raunig, M. Pardy, and E. Mattheiss, *Austrian Startup Monitor 2018*, 2018.

[8] D. T. Kollmann, D. S. Hensellek, B. Jung, and L. Kleine-Stegemann, *Deutscher Startup Monitor2019*, p. 87, 2019.

[9] L. Steigertahl and R. Mauer, *EU Startup Monitor 2018*, p. 36, 2018.

[10] M. Schuster, "We live in a post-series world," *Medium*, Jan. 25, 2020.

[11] K.-H. Leitner, G. Zahradnik, R. Dömötör, S. Jung, and M. Raunig, *Austrian Startup Monitor 2019*, AIT Austrian Institute of Technology GmbH, 2019.

[12] J. Losso, K. Chikhladze, and T. Basso, *EBAN Statistics Compendium 2018*, EBAN, 2019.

[13] H. Kraemer-Eis, A. Botsari, J. Brault, and F. Lang, *EIF Business Angels Survey 2019*, p. 56, Nov. 2019.

[14] M. Brettel, *Entrepreneurial Finance*, 2014.

[15] S. Dutta, *Financing Innovation: A Complex Nexusof Risk Reward*, p. 40, 2015.

[16] H. Apfel and H. Burson. (2019). National Venture Capital Association 2019 Yearbook. [Online]. Available: https://nvca.org/wp-content/uploads/2019/08/NVCA-2019-Yearbook.pdf

[17] F. Schmitt, "Venture capital & private equity: Unterschiede und gemeinsamkeiten," *CMS Blog*, Mar. 20, 2019.

[18] L. Bley, MoneyTree™ Report: Q4 2019, p. 122, 2019.

[19] P. Gompers, W. Gornall, S. N. Kaplan, and I. A. Strebulaev, *How Do Venture Capitalists Make Decisions?* p. 64, 2016.

[20] A. Crisanti, J. Krantz, and E. Pavlova. (Dec. 05, 2019). The VC factor: Data driven insights about VC-backed start-ups in Europe. [Online]. Available: https://www.eif.org/news_centre/research/the-vc-factor.pdf

[21] L. Sisney, "The universal success formula," *Organizational Physics by Lex Sisney*, Feb. 20, 2012.

[22] Wikipedia. (Apr. 10, 2020). Crowdfunding. [Online]. Available: https://en.wikipedia.org/w/index.php?title=Crowdfunding&oldid=950138061

[23] Lorenzen Consulting. (2020). Organisationsentwicklung, [Online]. Available: http://www.lorenzenconsulting.de/organisationsentwicklung.php

[24] P. B. Clark and J. Q. Wilson, "Incentive systems: A theory of organizations," *Adm. Sci. Q.*, vol. 6, no. 2, pp. 129–166, 1961.

[25] E. Ackermann, C. Bock, and R. Bürger, "Democratising entrepreneurial finance: the impact of crowdfunding and initial coin offerings (ICOs)," *Contemporary Developments in Entrepreneurial Finance: An Academic and Policy Lens of the Status-Quo, Challenges and Trens*, Springer, 2020.

[26] A. Agrawal, C. Catalini, and A. Goldfarb, "Some simple economics of crowdfunding," *Innov. Policy Econ.*, vol. 14, pp. 63–97, Jan. 2014.

[27] G. Bruton, S. Khavul, D. Siegel, and M. Wright, "New financial alternatives in seeding entrepreneurship: Microfinance, Crowdfunding, and peer-to-peer innovations," *Entrep. Theory Pract.*, vol. 39, no. 1, pp. 9–26, Jan. 2015.

[28] P. Belleflamme, T. Lambert, and A. Schwienbacher, "Crowdfunding: Tapping the right crowd," *SSRN Electron. J.*, 2012.

Paul Pöltner was born in Vienna, Austria, in 1981. After completing school, he studied software engineering at the Technical University of Vienna and Business Administration at the Vienna University of Economics and Business. Since 2009, he has been working as a project assistant and has been a PhD student in a research group on industrial software. He is researching the development of an infrastructure to automate cooperation between different organisations. He started his first computer services and software development company in 2001. After completing his master's studies, he applied for the position of a junior tax consultant and completed the course required to become a tax consultant at an international tax consulting company. Subsequently, he cofounded a crowdinvesting start-up in 2012. At that time, he was consulting the government on developing a crowdfunding law for Austria and was responsible for developing the processes and tools required to facilitate crowdinvesting in central Europe. Additionally, he led the working group on crowdinvesting in Austria at the Austrian Chamber of Commerce.

Thomas Grechenig is a professor for software engineering at the Vienna University of Technology and head of the industrial software research group (INSO), comprising specialist sub-groups from banking IT, medical informatics, interactive systems, software engineering to IT security.

In addition to his academic work, Prof. Thomas is founder and managing director of Research Industrial Systems Engineering (RISE), a serious R&D provider in large IT. Together with his team he is an IT architect for very complex large-scale systems and projects with a global industrial track record. Thomas Grechenig was involved in foundation and growth of the health telematics infrastructure in Germany, the largest autonomous certified IT infrastructure in Europe. He and his group are internationally active in the areas of industrial applications, global massive multi-user platforms, e-health, e-government, large corporate IT, mobility, telecommunications, IoT, and finance/insurance systems world-wide.