





'START-UP WANTED'

A NEW MISSION FOR ENERGY COMPANIES

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IF WE HAD GOOGLED THE TERM 'OPEN INNOVATION' IN 2003, WHEN HENRY CHESBROUGH COINED THIS TERM IN HIS FIRST BOOK, WE WOULD HAVE GOTTEN ONLY 200 RESULTS. TODAY, WE WOULD GET MILLIONS.

>> During this 16-year period, many new open innovation job titles have emerged (e.g. open innovation manager, technology scout, innovation hub manager, start-up project manager, etc.). Corporate Venture Capital (CVC) has burst onto the scene, and there has been an explosion in the number of programmes that have been launched by large companies to connect and collaborate with other companies, research centres, innovators and start-





THE ENERGY **INDUSTRY HAS** NOT BEEN AN EXCEPTION, **ALTHOUGH ITS IMPLEMENTATION** OF OPEN **INNOVATION HAS BEEN RATHER** ATYPICAL FOR TWO REASONS:

A. the adoption came late in comparison with other industries, with the first initiatives occurring in 2012

the main motivation to implement it.

Early adopters were looking to speed up new product launches (i.e decreasing the time to market) because consumers were constantly demanding new products and brands, leaving the in-house innovation departments 'exhausted' and searching for new ideas and technologies. In contrast, in the energy industry, 80% of the open innovation initiatives have pursued new business models (compared to an average of 65% in other industries). The most widely used open innovation model is to look for knowledge outside and bring it into the organisation (the 'outside-in' model), which occurs mainly through collaborations with start-ups.

One of the reasons for these differences is the way in which the energy industry has evolved. Today, many energy companies understand that successful business models from the past, which have been used 'since the beginning', will not exist in the future. The industry is currently experiencing a paradigm shift, which can be seen as either a threat or a huge opportunity.

THE ENERGY INDUSTRY
Starts implementing it in 2012

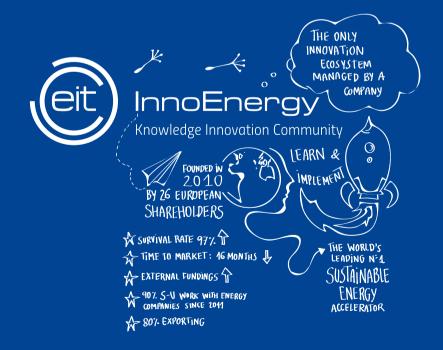
MAIN REASON?

DEVELOP NEW 280% Business models

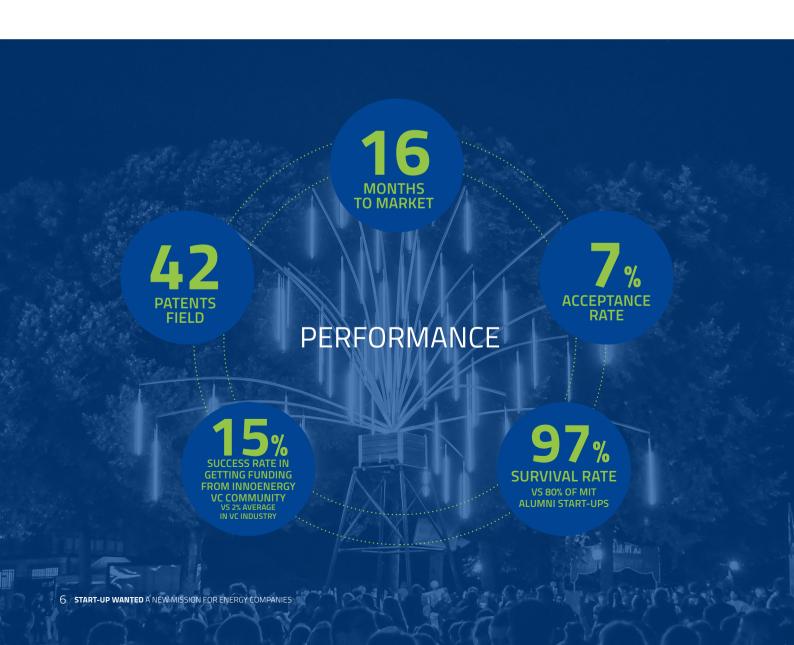
"The industry is currently experiencing a paradigm shift, which can be seen as either a threat or a huge opportunity"

IN 2010, THE WORD 'INNOVATION' RARELY APPEARED IN ENERGY COMPANIES' ANNUAL REPORTS, AND THE TERM 'START-UP' SIMPLY DID NOT EXIST. TODAY, THE SITUATION IS COMPLETELY DIFFERENT, INNOVATION (SPECIFICALLY COLLABORATION WITH START-UPS) IS SEEN AS A WAY TO LEARN AND IMPLEMENT NEW BUSINESS MODELS. IT HAS BECOME A STRATEGIC NECESSITY THAT IS DIRECTLY RELATED TO EACH COMPANY'S PLANNED EVOLUTION FOR ITS FUTURE.

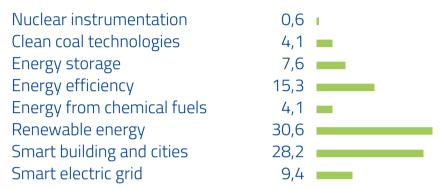
>> InnoEnergy has witnessed this evolution. Founded in 2010 by 26 European shareholders from the fields of education, research and energy, it is the only company that is recognised by the European Institute of Innovation and Technology (EIT) as a Knowledge and Innovation Community (KIC) for Sustainable Energy in Europe. InnoEnergy's mission is to drive innovation and entrepreneurship in sustainable energy through three business lines: educational programmes, collaborative innovation projects and start-up support. Collaborative innovation is part of InnoEnergy's DNA. The company was founded with the deep conviction that cooperation between education, research and industry would lead to more disruptive innovation and entrepreneurship that would reach the market in much less time.



IN THE SPECIFIC FIELD OF START-UP SUPPORT, WE HAVE BECOME THE WORLD'S LARGEST SUSTAINABLE ENERGY ACCELERATOR, AND WE BOAST THE INDUSTRY'S LARGEST INVESTEE PORTFOLIO. IN TERMS OF EARLY-STAGE START-UPS, OUR RESULTS EXCEED THE EUROPEAN AVERAGES FOR SURVIVAL RATE (97%), TIME TO MARKET (16 MONTHS) AND EXTERNAL FUNDING.



Start-up supported by thematic (%)*



^{*}All figures are data from January, 2019.

A distinctive feature of the support we provide to start-ups is collaborative innovation.

Entrepreneurship is no longer a path to be travelled alone.

>> Only by combining efforts and skills with the involvement of different but complementary players will it be possible to take better solutions to the market sooner and successfully reach more customers. This has required developing a systematic, continuous process that not only puts start-ups in contact with companies but also enables them to work together successfully.

Enhancing cooperation between start-ups and companies has been quite a challenge. In 2011, open innovation and start-ups were still unfamiliar concepts in this industry. Large companies used to make a clear distinction between 'them' and 'us', which were different worlds with no point of contact between them. Since then, we have supported the creation and growth of more than 230 start-ups, of which 90% are partnering with corporations.

The relationship between a company and a start-up is asymmetrical but nevertheless complementary; both parties bring different features that offer great potential for a 'win-win' relationship. Despite this beneficial symbiosis, such cooperation has complexities. Even when both parties want the relationship to succeed, it does not always happen.

While there are no magic formulas, over time, we have been able to identify certain factors that work in favour for successful company-start-up collaboration.



1. THE "WHY" OF COLLABORATION

"The highest level of knowledge is to contemplate the why" (Socrates)

ESTABLISHING A CLEAR GOAL MUST BE THE FIRST STEP, AND IT MUST VALIDATE THE EFFORT AND RESOURCES THAT WILL BE PUT FORTH.

>> One of the risks that we are seeing today is that company-start-up collaborations have grown so much in the energy industry that companies fear that they won't appear to be on the cutting edge unless they have a programme with start-ups. Many companies have

implemented these open collaboration programmes simply because their competitors have one. It is a cosmetic implementation that primarily seeks a return in terms of brand, image and/or reputation, but it is not recommended.

LEAVING COSMETIC IMPLEMENTATIONS ASIDE, THE THREE MAIN GOALS THAT ARE PURSUED BY COMPANIES WHEN COLLABORATING WITH START-UPS INCLUDE THE FOLLOWING:

1. Creating an entrepreneurial culture within the organisation and encouraging creativity and innovation amongst the entire team.

Contact with start-ups exposes teams from large companies to more flexible and more disruptive environments, new ways of thinking, new businesses and new technologies, which in turn contribute to reinventing a more entrepreneurial corporate culture.



2. Solving specific problems within our business.

The idea is basically to innovate in our own market with the aim of either consolidating or maintaining our position. For example, if we want to accelerate market launches of innovative solutions, working with start-ups through the co-creation of new solutions offers substantial advantages, including less time to market and less risk.



3. Expanding into future markets.

Here, we are looking for more disruptive solutions that will enable us to enter new markets. Start-ups not only provide access to disruptive technologies and new business models but, through them, our organisation also learns about new markets with a rather limited risk.





>> HAVING CLEAR GOALS WILL ENABLE US TO

- A. CHOOSE THE **MOST SUITABLE** COLLABORATION MODFL.
- B. DESIGN KPIS THAT ARE ALIGNED WITH THE END GOAL.
- C. DETERMINE WHETHER THERE IS A 'STRATEGIC FIT' BETWEEN THE **COMPANY'S GOALS** AND THOSE OF THE START-UP.

>> Strategic fit is vital, and its absence is one of the most common causes of failure in collaborations. It not only implies an alignment (or complementary goals) between the two organisations but also complementary time horizons, remembering that 'short term' for a large company does not mean the same thing as it does for a start-up.

Obviously, the senior management's task here is to define these goals and support the project. Without management engagement and support, this type of project cannot possibly succeed.



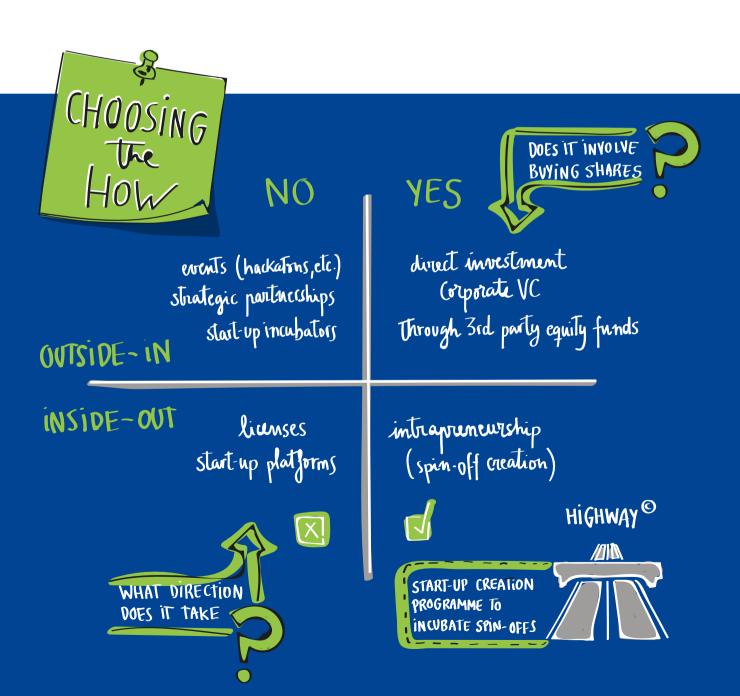
2. CHOOSING THE "HOW":

"Would you tell me, please, which way I ought to go from here?"
"That depends a good deal on where you want to get to."
"I don't much care where —"
"Then it doesn't matter which way you go."
("Alice in Wonderland")

THERE IS NO ONE COLLABORATION MODEL AVAILABLE THAT CAN BE USED FOR EVERYTHING AND EVERYONE.

- >> However, to give us a reference framework, we can classify models on the basis of two variables:
- whether or not they involve buying shares
 - \cdot the open innovation model: 'outside-in' or 'inside-out'

BY COMBINING THESE VARIABLES, WE CAN IDENTIFY FOUR START-UP COLLABORATION **MODEL TYPOLOGIES:**



WHAT MODELS ARE **COMPANIES IN** THE ENERGY INDUSTRY USING?

MOST ENERGY COMPANIES ARE USING AN 'OUTSIDE-IN' MODEL, AND THEY OFTEN COMBINE DIFFERENT ACTIONS WITHIN THIS MODEL, SOME EXAMPLES ARE BELOW.

Engie has chosen a model that includes buying shares in start-ups, either directly through its business units or through its venture capital unit (Engie New Ventures).

>> However, the most commonly used model is one in which only the corporate venture capital unit invests. It is used by BP Ventures, ABB Technology Ventures, Equinor Energy Ventures and Iberdrola Ventures (Perseo).

Schneider-electric and **ENEL** have opted for models that do not involve acquiring equity holdings.

>> ENEL has implemented a highlystructured model that is centred on the business units' needs. Their Innovation Hubs look for start-ups that can address those challenges and can develop solutions jointly with ENEL's business unit. If the pilot trial is successful, the next step is the business agreement. This model aims to resolve business challenges and seeks specific implementations with clear obiectives.

In recent years, we have been running the 'Cleantech Camp' with Naturgy.

>> It is an annual event that attracts start-ups that align with specific challenges for Naturgy. The goal is to identify organisations with which strategic partnerships can be established. Thus, a specific event is used to achieve our proposed goal of establishing a strategic alliance with a start-up.

Supporting the development of start-ups is another possible path for collaboration.

>> Three years ago, corporate incubators reached record numbers; these include one-third of the incubators in Europe. There have been some successful initiatives in the energy industry. These include Shell, with its social innovation incubator, which is linked to its foundation, Fundación Repsol, with its 'Entrepreneurs Fund' programme, and EDP Starter. However, there have also been quite a few failures. Why? According to these companies, they started these programmes to gain access to start-ups and learn new business models, with the intention of integrating them quickly into their own organisations. The fact is that corporate incubators are not the best tools for achieving this goal. Many of the companies that have discontinued these initiatives concluded that their know-how did not lie in creating start-ups, and the investment required was considerable. Overall, a great deal of effort yielded minimal results.

TV9 TON OU... YOUR EGGS IN THE SAME BASKET.

LESS COMMON BUT NOT LESS SUCCESSEUL IS HF "INSIDF-UT" MODEL.

"Enagas Emprende" is a good example.

>> Enagas Emprende is a good example. Enagas has chosen to foster corporate entrepreneurship; that is, they support the creation of start-ups that are generated by ideas and teams within their own organisation. This is a smart move that enables them to not only solve problems that are directly related to their business but also to explore future markets with a low level of

These programmes normally face two challenges:

- a) We have the opportunity, but we don't have an entrepreneur!
- b) Once everything is in place, where does the start-up grow from there? Inside or outside?

InnoEnergy is working with Enagas Emprende precisely to mitigate these risks. We are firstly helping identify entrepreneurial profiles within its organisation (what we call the team's 'due diligence'). By using a proprietary tool that we designed a few years ago to select the start-ups in which we were going to invest (which we have already used with more than 1,000 entrepreneurs), we have helped Enagas Emprende analyse not only to what degree each individual fits into the entrepreneurial profile but also to what degree the teams complement each other. For the second challenge, Enagas has chosen our start-up creation programme 'Highway®' for incubating its spin-offs. This allows start-ups to grow freely in a flexible environment and also reduces the risk by using a programme with a survival rate of 97%.

IS ANY SINGLE ROGRAMME FTTER THAN THE OTHERS?

No, it is a question of consistency between the component parts and the goal.

>> For example, if we want to create an entrepreneurial culture within our organisation, events that are organised specifically either for this purpose or corporate entrepreneurship programmes are suitable models. However, if the primary goal is to solve concrete problems that are affecting our current business, we would consider strategic partnership programmes with start-ups or even acquisitions.

CORPORATE VENTURE CAPITALS (CVCS): ALMOST A UBIQUITOUS MODEL

IF THERE IS ONE MODEL THAT DESERVES A SECTION TO ITSELF, IT IS THE CORPORATE VC.

Today, it would seem that no reputable energy company can afford not to have a venture capital fund to invest in start-ups. An example of this trend is seen in our 'InnoEnergy VC Community'.

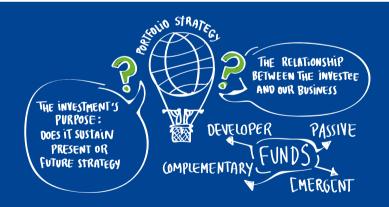
>> In 2013, we created the first Venture Capital Community that specialises in sustainable energy. At that time, only two of its members were CVCs: Perseo (Iberdrola Ventures) and ABB Ventures. Today, 50% of its members are CVCs.

The entry of this new player on the energy start-up investment scene has undoubtedly had a positive impact. It is a 'patient' investor that does not seek short-term gains. This investment profile aligns perfectly with a capital-intensive industry that has a long time to market. Furthermore, it is an investor that the start-up perceives positively and as strategic because it not only provides funding but also contributes more value,

particularly at the time of market entry.

The downside is the lack of a clear investment portfolio strategy in some of these funds. They have capital to invest in start-ups, and they usually have a clear mandate regarding the scope (where they want to invest); however, from there, things become blurred.

TWO **DECISIONS** EXTREMELY HELPFUL IN STRATEGY.



The first is to determine the investment's purpose (i.e. either supporting the present or the future strategy).

The second is to determine what type of relationship the investee portfolio will have with our businesses, including whether this relationship will be close and particularly whether there will be a close relationship with our operational capacity.

THESE TWO DECISIONS ARE **ESSENTIAL BECAUSE THEY** DETERMINE FOUR DIFFERENT PORTFOLIO PROFILES DEVELOPER, COMPLEMENTARY, **EMERGENT AND**

A PATIENT INVESTOR WHO DOES NOT SEEK SHORT TEPM GAINS AROUND 9-10 INVESTMENTS WITH A CLEAR MANDATE

>> A developer fund will be composed of investees who are related to my strategy, and they will have a close relationship with my business. The fund will be an effective instrument for establishing collaborations with start-ups, which will help me progress and improve my competitive position in the market.

PASSIVF.

A typical example would be a fund that invests in start-ups that, in the near future, may either enable vertical integration with the company or reduce its costs. An example would be a wind turbine manufacturer that invests in startups that reduce its turbines' maintenance costs, such as drones for inspecting the blades or predictive maintenance systems. In this case, the investment's financial return will not be the most important factor because I am looking for future integration in my business.

>> A complementary fund will also be related to my strategy, but the relationship with my business will not be as close. For example, it will be a fund that invests in start-ups that stimulate demand for my product. Thus, a battery manufacturer may find it attractive to establish a strategy along these lines, and it would invest in e-mobility start-ups, such as electric motorcycles for last-mile logistics or electric car sharing software.

>> However, if I want to explore new territories and/or learn about new markets with new customers. I will want to take a less active, less interventionist stance and promote learning. This would be an emergent portfolio strategy: the relationship with my business is close, but it does not offer much to my present strategy, although it might be decisive in the future.

An example would be a boiler manufacturer that finds its potential future in the smart home market. In this case, its investees would be start-ups that offer different 'smart home' solutions.

>> Lastly, there remain passive portfolios. wherein the connections with both the present strategy and the present business are tangential. These portfolios may become emergent at a later stage because they may either play a role in the future strategy or they may be purely financial investments whose aim is to secure a successful and profitable exit in the future.

In addition to having a defined portfolio strategy, the **definition** of the mandate must be considered.

The traditional CVC has a portfolio of nine or ten investments; therefore, it is important to know where we want to invest. Who defines the fund's scope? The definition of the mandate must consider the viewpoints of senior management with more strategic, disruptive mandates and of the business units with mandates

that are more focused on the immediate future. It must also solve challenges that have already been identified. The use of the term 'challenges' instead of 'technologies' is deliberate. A CVC is acquiring shares in a company with a technology/solution, a business model and a team.

In recent years, we have seen the evolution of these mandates. CVCs previously focused primarily on mature start-ups with a proven track record and operation in highly-defined areas. Today, we are seeing an evolution towards younger start-ups. To offset the increased uncertainty, a diversification strategy is

chosen. The idea is not to 'put all your eggs in the same basket', to wait and to see how the investees develop, and then invest in subsequent capital increases only in those that we think are viable.

Notably, many of these investments are required prior to an acquisition. This is one of the advantages of this type of strategy because it enables observation from a distance and experimentation to mitigate the risk of an acquisition. I will only consider buying the company if the evolution is positive.

3. THE "WHERE"

'The best structure will not guarantee results and performance.' But the wrong structure is a guarantee of non-performance.'

- Peter Drucker

CREATING THE NECESSARY PROCESSES AND CULTURE

>> Once we know why the organisation is interested in collaborating with start-ups and we have chosen the most suitable model, we will need to prepare an environment that is conducive to such collaboration. Is our own environment suitable? Large companies are geared towards efficiency, effectiveness, volume and replication. It is a predictable, stable system. However, by its very nature, a start-up is the exact opposite. It is flexible, time is always short and it

faces uncertainty head-on; rather than replicating, it is geared towards creating and innovating. It is important to be aware of this fact and, after deciding which model we will implement, to ask ourselves the following:

a) What processes must I create or modify?

b) What values of my culture will affect this type of collaboration, either positively or negatively?

A. WHAT PROCESSES MUST I CREATE OR **MODIFY?**

B. WHAT VALUES OF MY CULTURE **WILL AFFECT** THIS TYPE OF COLLABORATION, EITHER POSITIVELY OR NEGATIVELY?

Let us suppose that we have decided to collaborate with start-ups because we want to speed up the market launch of our solutions. The model that is chosen will identify start-ups that are compatible with our organisation and develop a pilot project for launching new products. If it is successful, a business agreement will be signed.

What are the main challenges of this type of model?

ON THE PROCESS LEVEL:

It is becoming increasingly important to be good at scouting.

>> it is not easy to find 'a needle in a haystack', and it has become even more difficult with start-up ecosystems growing and decentralising. Costs are increasing, and the number of start-ups is constantly growing. It is also important to provide a contact point. The start-up must be able to easily find the entry point into our organisation.

Adapting purchase processes to start-ups is critical.

>> If we want to sign a business agreement with a start-up, we cannot force it to go through long, tedious processes with excessive guarantees and payment periods that are beyond the reach of small organisations, which lack the financial clout of a large company. We need to understand their reality and have a process that is parallel to the usual process and that can adapt to this type of organisation.a parallel process to the usual process that can adapt to this type of organisation.



TO ASSURE A START-UP'S INTEGRATION WITH THE BUSINESS UNIT, THE ASPECTS THAT HAVE THE MOST INFLUENCE ARE THOSE RELATED TO PEOPLE AND CULTURE:



>> The 'not-invented-here' syndrome has a significant impact on integration. Few companies recognise that this syndrome exists, but it is fairly common. The examples that are set by management (e.g. the creation of an incentives system and the acknowledgement of good practices) help attenuate this syndrome. Senior management engagement with start-up selection processes or encouraging employees to undertake this type of collaboration project, with the possibility of returning to their previous job at a later stage, are examples of good practices.



>> The organisation can only integrate something that comes from outside if it has **absorptive capacity**. This depends on its human capital, which correlates positively with the diversity of its professional experience and degree of experimentation.



>> Lastly, the level of complexity increases if it is necessary to **create collective skills** to successfully complete the integration, as would be the case of a co-creation process; teams will need to spend time working together until they attain a mutual understanding and create a product or solution collectively. The result will be more disruptive, but more time will be needed.



IF WE CHOOSE AN EQUITY HOLDING MODEL, WE WILL AGAIN HAVE TO ADDRESS PROCESS- AND CULTURE-RELATED CHALLENGES.

On the process level, it is important to adapt legal processes and financial analyses.

>> When investing in start-ups, many organisations rely on their powerful legal and financial departments to carry out their due diligence and make contractual arrangements. It often happens that these teams are lacking in experience in dealing with start-ups. They are more accustomed to consolidated companies, and start-ups' income statements rarely pass the risk analysis test. Hence, it is advisable to either have someone on the team who is familiar with analysing start-ups or to work with an intermediary who can assist in the analysis or negotiation.

On the cultural level, it is important to create a 'David vs. Goliath' relationship and to avoid being excessively interventionist with the start-up. If we have Board membership, we should not forget that our job is to protect the startup's interests. Therefore, it is important that the two entities are strategically aligned; otherwise, there is a high risk of conflict of interest.

CONCLUSIONS

>> Collaborating with start-ups has become a standard practice in recent years in the energy industry. While this collaboration offers multiple advantages to both players, achieving the hoped-for results is not easy.

With the experience acquired in nine years of fostering collaborations between our start-ups and companies that are operating in the industry, we have identified three key factors that contribute to the collaboration's success.

The first factor is knowing why we are choosing to collaborate with start-ups. Do we want to revitalise our organisation's culture, make it more innovative and find a solution for specific challenges in our organisation, such as new product launches, or do we want to expand to new markets? Answering these questions will enable us to achieve the following: a) choose the most suitable collaboration model, b) design KPIs that are aligned with the end goal and c) determine whether there is a 'strategic fit' between the company's goals and those of the start-

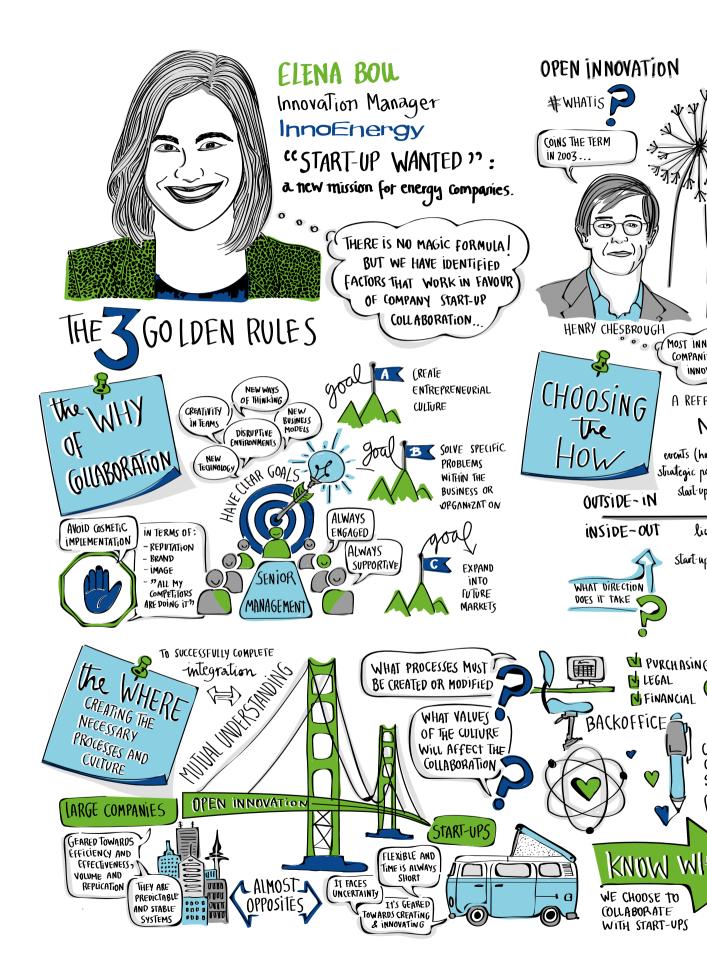
The second factor is to choose the best model for achieving the goal. As we have seen, there is no single collaboration model that fits all situations. Although there are many options, on a conceptual level, we can distinguish between four generic collaboration models based on two variables: whether or not we acquire equity holdings and the open innovation model that has been implemented.

Finally, it is important to create a suitable environment, including processes that have been adapted to the start-up's

reality, and to identify the values of our corporate culture, which this type of collaboration will affect either positively or negatively. It is precisely the cultural and people-related aspects that have been identified as the main obstacles in this type of collaboration.

Are there any magic formulas?

>> Unfortunately, we have not found any, but correctly addressing these three factors is a sine qua non condition for success. In this article, we have analysed the company-start-up collaboration from the company's viewpoint. However, we should not forget that the start-up also has to do its homework, which will be the subject of another article.





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