Article

Monitoring the Implementation of Exponential Organizations through the Assessment of Their Project Portfolio: Case Study

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Abstract: Many organizations are currently face significant challenges in terms of sustainability and technological development. Achieving sustainability in business activities, interweaving social, economic, and environmental perspectives, is one of the most challenging goals for companies. On the other hand, as technology advances exponentially, organizations grow in a linear way. This fact causes a gap which increases over the time. Models and tools have been developed to try to solve both problems separately; on one side to make the organization grow exponentially, and on the other side to incorporate sustainability into the business model. However, they do not allow enough time to know if the actions carried out really achieve their aim. The model presented provides a solution to both problems by monitoring the evolution of organizations towards an exponential structure through the analysis of the project portfolio. The main objective is to know how the orientation of ongoing projects has changed during the last period, in order to position them in terms of achieving the desired sustainability-oriented transformation. With the model designed, it is possible to know if the actions developed by the company are really heading towards a sustainable model and exponential growth. With the aim of validating the model, it has been applied in an innovation organization. With this model, the level of exponential progress of the organization was determined, as well as the goals that have been attained best and worst so far.

Keywords: exponential organizations; project management; project portfolio; business development; sustainable development

1. Introduction

Businesses today face two challenges that dominate the strategic thinking of organizations: stakeholder demands for greater corporate responsiveness to environmental and social issues, and current technological advances [1].

The first concerns sustainable activities. The social requirements of organizations have evolved from the demand for clean business operations to the achievement of a state of sustainability [2]. The original environmental challenge has evolved to include social and ecosystem ethics, each supported by stakeholders from all parts of society. Incorporating sustainability into business activities by interweaving social, economic and environmental perspectives is one of the most challenging goals that organizations have to face [3]. Changes in business models are recognised as a fundamental approach to implementing sustainability [4], but to implement changes and make them operational is a difficult task [5,6]. While individual actions are always important, it is also essential that large corporations and organizations get involved in protecting the environment and improving our society [7]. According to McKinsey [8], despite the importance of sustainability in business, only a quarter of executives say it is one of the top three priorities on the agendas of their CEOs. The lack of weight leads to a relatively small number of activities that companies actually carry out that are related to sustainability.

The second concerns emerging technologies. The exponential rate of development of emerging technologies has created an unprecedented scale of change, mainly because many technological advances are occurring simultaneously, being built on one another [9]. In all industries, technology changes the way companies work and grow, which has a direct impact on the way organizations are created and managed [10]. The Fourth Industrial Revolution has already begun, and brings with it much more than a simple digital transformation [11,12]. This revolution represents a convergence of technological capability, intelligence, and connectivity all under the idea of sustainable development [13]. It is a fusion of new physical, digital, and biological technologies. As technology advances exponentially, organizations grow in a linear way. This fact causes a gap which increases over the time (Figure 1a), so that organizations remain in obsolescence. Clearly, while slow and steady growth initially appears to be more successful, an exponential growth strategy far outpaces linear change [14] and enables long-term organizational performance.
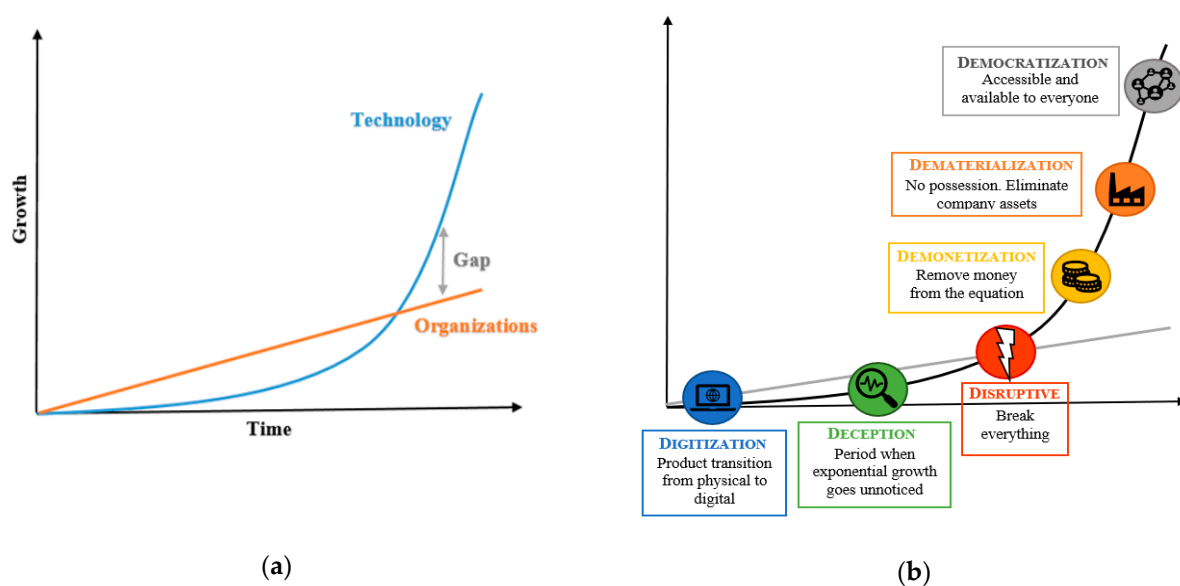

(**a**)   (**b**)

Figure 1. (**a**) Exponential growth of technology vs. traditional organizations (linear); (**b**) 6D's of exponential model.

The value of traditional companies comes from sale products or services whose offer is limited. The linear mindset focuses on making something better while the exponential mindset, something different. Exponential growth has become more relevant in the last few years and has become almost a necessity for companies. Until now, the limiting factor of a company's growth was directly related to the number of resources (staff and material) and capital expenditure [14]. However, that growth takes a long time and requires a huge capital investment. In addition to the economic issue, this model is not viable in a society that is increasingly struggling for sustainable development.

According to statistics [15], 40% of Fortune 500 companies will become obsolete in the next few years. Richard Foster of Yale University [16] estimates that the average life span of an S&P company has declined from sixty-seven years in the 1920s to fifteen years today. Indeed, that useful life is going to be shortened even further in the coming years. At this rate, 75% of the S&P will be replaced by 2027. Traditional big business competes (and loses) against a new generation of organizations that harness the power of exponential technologies, from data mining to synthetic biology and robotics [17]. Diamandis and Kotler [18]. have identified "6D's" or six phases by which a technology achieves a massive impact through a chain reaction (Figure 1b). This growth cycle takes place in six key steps. The first three D's help to understand how technologies are changing the business models and the next three ones foster exponential growth.

Studies related to the first step (digitization) suggest that digital technologies can make a positive contribution to the efforts of organizations and society to become more

sustainable [19–21]. However, this is not quite clear and there are different opinions [22]. Exponential growth removes the need for material resources, pursues a strong social commitment all with significant economic benefits [23]. It is vital for companies to ensure their permanence in the market and must be aligned with sustainable development.

Furthermore, the exponential transformation was a necessity to avoid the obsolescence of companies before COVID-19. However, after this global pandemic, this change is already a must. The way of living, socializing, and working has changed and many companies have gone bankrupt because they could not adapt [24,25].

This approach requires a complete organizational change, which therefore involves a lot of problems [26]. The members of the organization have established work methods and roles that they hardly want or can change [27], especially when they do not fully understand the objectives requested. This lack of definition and experience makes the implementation of these models difficult. In addition, this challenge occurs at any level: from subordinates to managers and leaders of the organization.

It is essential to develop methods that allow organizations to know if their actions are well directed towards becoming an exponential organization aligned with sustainable development. This will make an accurate and independent assessment and can provide essential knowledge for company development. Projects and especially project portfolios have proven to be "powerful strategic weapons" [28], towards a conceptual framework for sustainable project portfolio management [29] and, in this case, it is also considered a very useful tool to analyze the exponential development of organizations.

Although sustainability is a fundamental pillar for organizations, few actually manage to implement actions aimed at a sustainable business model. On the other hand, the change of organizations towards exponential growth is a vital task, but very difficult to implement without subsequent monitoring. This paper provides a solution to both problems, developing a simple and easy-to-implement monitoring model. Until now, the methods developed for these purposes either required a lot of time and effort or failed to identify the gaps within the organization. The model presented in this study offers the possibility of analyzing the behaviour of the organization at all levels and without large investments to help make day-to-day decisions.

Therefore, this paper proposes a model for monitoring the evolution of organizations towards an exponential and sustainable structure through the analysis and evaluation of the project portfolio. The model developed is based on the identification, selection and evaluation of projects according to their adaptation to the exponential performance, with team leader's collaboration. In addition to tracking change, the company will be able to analyze what activities are really focused on sustainable development.

The main objective is to know how the orientation of ongoing projects has changed during the last period, in order to position them in terms of level of achievement of the desired transformation. This paper has six sections. After the introduction, in Section 2 we review the state of the art of the main exponential implementation models. Subsequently, in Section 3, we present the methods followed to carry out this work. In Section 4, we detail the model developed and an application to a particular case in Section 5. Finally, the main conclusions and future lines are presented in Section 6.

2. Background: Models for Implementation and Monitoring

The exponential transformation is quite recent; we are living the first years of this transition. However, the exponential growth approach was addressed long ago by Kendall in 1997 in his work [30], where he presents an in-depth management roadmap for exponential improvement in any organization using a combination of parabola, methodology and case studies. Donald Mitchell [31] also exposes how companies can achieve exponential growth using different examples. According to his theory, the basic problem of any organization is to decide what to pay attention to and what to reject, as there are tons of information. Most recently, there are already some methods developed to try to implement the exponential model in organizations which are set out below.

Ismail et al. [10] identified a new generation of companies that offer 10 times more impact compared to their peers and analyzed the shared attributes that led to their hyper growth. These Exponential Organizations (ExO) do not use hundreds of people and huge physical locations nor buildings, in fact, they are built on information technologies. They take what was once physical in nature and dematerialize it in the digital world and on demand.

One of the most widespread models for implementation this transition was developed by Ismail et al. [10]. In his research they claim that the way to become an Exponential Organization is through the so-called ExO Sprint. This can be done from coaching and training programs or with the rules set out in the book Exponential Transformation [32]. For that purpose, the first step on the road to exponentiality is to understand what they call the ExO Model. Exponential Organizations have 10 common elements or attributes and a Massive Transforming Purpose (MTP), i.e., a very high aspiration purpose or intention. The attributes are differentiated into two types: SCALE and IDEAS and they are related to the creative (right) and rational (left) hemispheres of the brain (Figure 2). The acronym SCALE is used to reflect the five external attributes and IDEAS for the five internal ones. Not all ExOs must have these ten attributes although the more they have, the more exponential they tend to be. According to Ismail et al. [10], at least four of these attributes are necessary to really become exponential. The five externally (SCALE) focused ExO attributes allow organizations to access global abundance. Access to existing untapped abundance is the basis for building an Exponential Organization. The other five internally (IDEAS) focused ExO attributes enable organizations to manage abundance and drive culture, enabling them to grow exponentially.
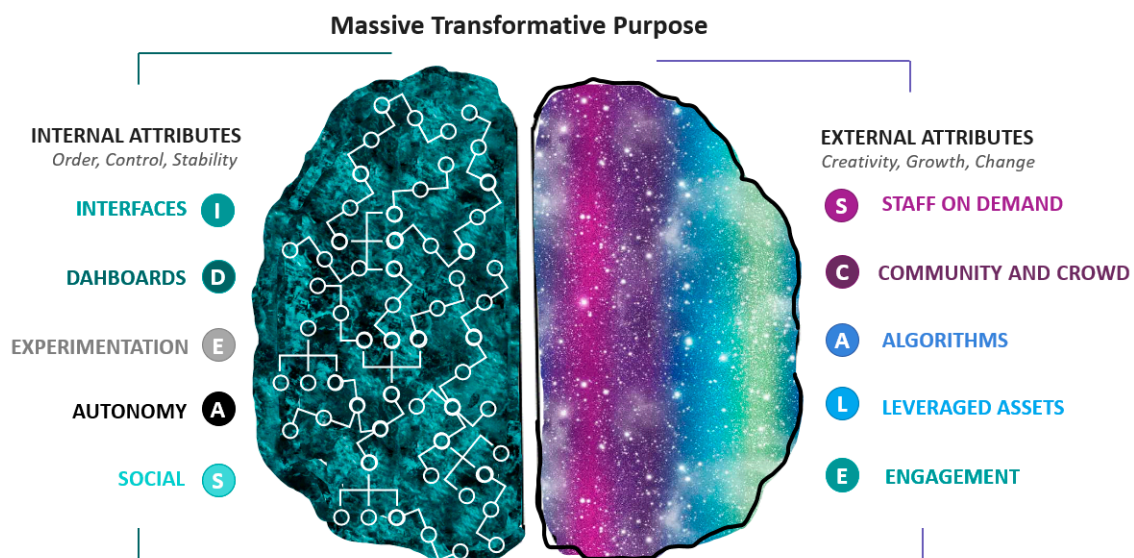

Figure 2. ExO Attributes.

A list of questions is associated to each of these ExO attributes that according to Ismail must have an Exponential Organization. These questions are kind of a checklist to verify if the company has or does not have these attributes. For the implementation of these attributes, Ismail et al. [32] developed the ExO Canvas based on the Business Model Canvas [5], which is a one-page tool created to help design the exponential organization by providing an overview of all the attributes of the ExO Model [33]. This method intends to know the potential of the organization to achieve exponentiality, all under the MTP that defines the organization. The final step to reach exponentiality is the ExO Sprint that is a 10-weeks process to implement the ExO Model.

Considering the important role that digitalization plays in exponential organizations, Schallmo and Williams [34] tries to give a roadmap for the digital transformation of business models. They identify 5 different phases with a series of specific objectives and questions:

- Digital reality: this phase describes the digital state of the organization.
- Digital ambition: based on the previous stage, transformation objectives are defined.
- Digital potential: a guide of good practices and enablers for the transformation is established.
- Digital fit: design of the digital business model.
- Digital implementation: implementation of the digital business model.

They also offer a case study of the transformation of a company. However, as explained in the previous section, an exponential change is not just a digital transformation, but it is only one of the stages.

Another implementation model is the one developed by Dgroup, which is a management consultancy and digital agency which offers advice to companies in the digital world [35]. This, like Ismail's study, brought together more than 300 digital transformation projects and asked 1000 C-Suite executives in Austria, Switzerland, and Germany to discover exactly what these exponential organizations do differently [36]. In this case, they identified five attributes: purpose, exponential technology, liquid organization, agile processes, and intrapreneurial culture. They also identified four predominant patterns in the combination of attribute values that represented more than 90% of the organizations analyzed. These four stages of development are shown in Figure 3. As a result of the study, Dgroup developed a practical guide for achieving exponential growth that offer a recommendation of the different initiatives (Figure 3). These approaches address the key levers for updating an organization's operating system.
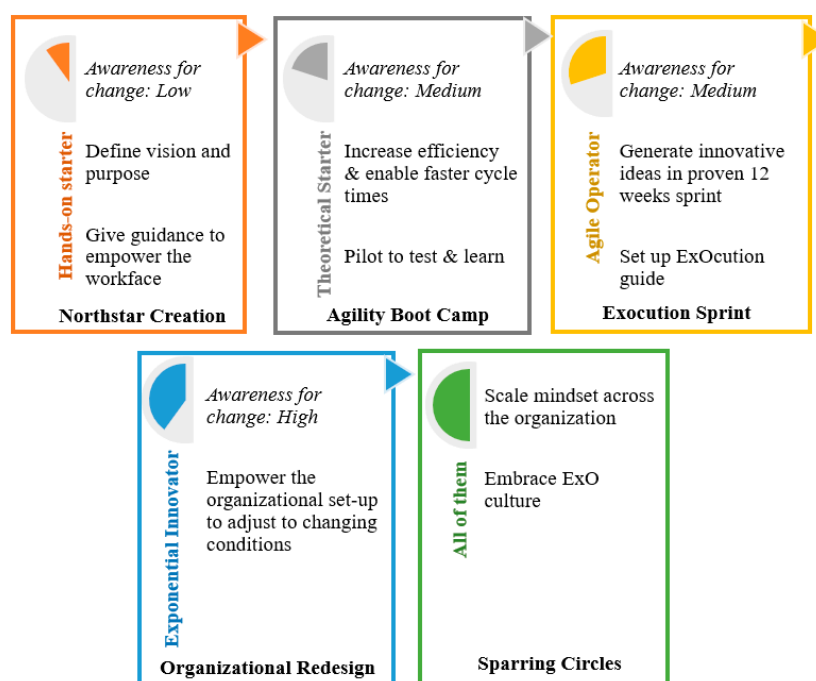
Figure 3. Key levers for updating an organization's operating system.

In the same vein, the Exponential Business Systems program is an integrated approach for creating or transforming, running and leading an exponential enterprise [37]. It is a one-year process consisting of several courses and coaching programs that covers the following aspects: conceptual, leadership, brand development, marketing, sales, management, and technology. In this case, courses try to mentor the organization covering five fields: exponential leadership, branding, product and presentation, creative teams in flow, and marketing.

Most of the application models mentioned are very similar, based usually on a series of steps and training sessions that last from a few weeks to a year. Most of them are focused on implementation from scratch, which is the simplest, however, others neglect the transformation of the organization. The implementation of exponential organizations in a new company is clearly defined and it is relatively simple as everything is new and starts from the beginning.

Apart from this, there are also other internal factors that are established and difficult to change, such as roles, no referents, ignorance of the process, and rejection of change. Organizations need to make changes, but as Lawrence said [27], one of the main problems with business executives face is employee resistance to change. The need to shift mind-sets is the biggest block to successful transformation. The key of all this lies in making the shift both individual and institutional at the same time [38].

In addition, the problem with the implementation of exponential systems does not lie in the initial moments, since the organizations can develop punctual efforts to carry out an adaptation to new forms of operation. The models developed so far establish a point of change and provide the guidelines to implement an exponential organization, which is what sustainability really represents. Clearly, a change of this magnitude does not take place in 10 weeks, but this is the starting point for developing the key aspects (Figure 4). In this way, transformation is not a simple event, but an essential and perpetual task of leadership [39].
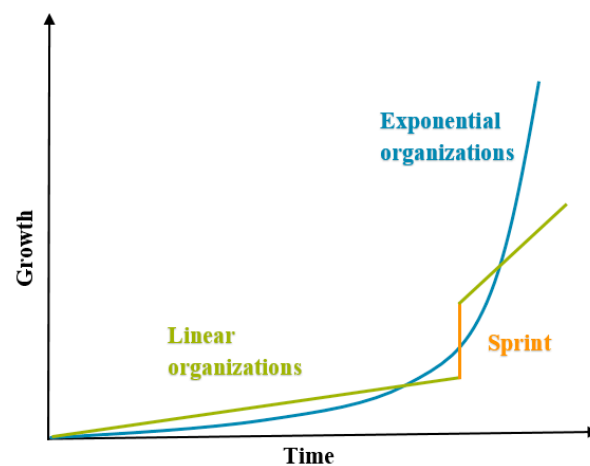

Figure 4. Companies growth with external intervention.

Based on this approach, organizations must develop work routines to maintain a continuous change for truly exponential reach. Otherwise, the change will simply be a false adaptation of traditional business models [40]. In order to do this, the organizations can continue to request specialized consulting and coaching services, or they can form its own resources, but not all key aspects of the company progress in the same way. They must develop methods that allow them to know if their actions are well directed towards their conversion into an exponential organization. This will make an accurate and independent assessment and can provide essential knowledge for company development.

One of the problems of the ExO is they tend to focus only on the actions that have the most important or short-term returns. Monitoring is a key element for the construction of the organization; thus, all these aspects should be monitored frequently to check that they are well developing and to identify gaps. According to Walton [41], in a changing environment, change needs to be built into the business-as-usual business architecture and culture, and a change ecosystem must be developed. This effective change needs repetition and continuous attention, or else the memory of the change connection will decay and the similarity of future success with change will diminish [41].

However, in this aspect, there are no references to ensure that monitoring identifies the situation of the organization on the road to exponentiality. As a recommendation,

the follow-up part of the implementation model analyzed is based on doing the coaching sessions once again in order to repeat them until it is no longer necessary. Like something different, Ismail et al. [32] incorporate a checklist to assess the progress of the exponential organization by introducing a series of 68 questions related to each of the 10 aspects or attributes considered. This list of questions is called "Checklist for success" and the questions are related to the level of implementation of different attributes in the organization. Each of the items on the list asks a question to verify what is done and what is not done in the company to achieve that attribute. There are 37 questions associated to the SCALE attributes and 31 to the IDEAS, but the answers are not so simple. They may help to verify if that attribute is being worked on, but they hardly specify "how much".

However, a follow-up by questions has serious shortcomings; firstly, the concepts presented are too complex for people in full transition; secondly, some questions are redundant and generate an ambiguity that is reflected in vague answers, so they are not representative and are difficult to compare; finally, the questions are subjective, which means that they do not have metrics that allow them to be compared.

To try to measure this exponential development, Clevertap designed a the formula for exponential growth [42]. The first component (X_0) is the starting value of whatever metric the company is measuring—for example, revenue. Then, the company must evaluate the percent increase over a given duration of time (r). The final parameter is the number of equal times intervals being measured.

$$X_t = X_0 (1 + r)^t \tag{1}$$

Based in this formula, Clevertap developed a mobile app with access to different statistics to follow this exponential growth. However, the app does not provide guidelines for getting the required information and is focused on the company's top management.

As far as the sustainability part is concerned, there are different studies that analyze how it has been tried to be incorporated into the management models [43,44]. Traditionally, the development of tools for sustainability has focused mainly on products or has taken a broad view of eco-innovation [45,46]. However, increasingly attempts are being made to integrate sustainability into the organization's business model. Broons and Lüdeke-Freund [47] analyze the gap between how business models and sustainable innovations are interrelated in the current literature. They make an important contribution to closing this gap by proposing regulatory requirements under which business models should operate to connect to corporate sustainability and sustainable innovation. This research provides a starting point with the questions for future research on sustainable business models.

It is difficult to find a general definition of sustainable business models in the context of technological, organizational, and social innovation [47]. However, it has been shown that changes in business models are a fundamental approach to making innovations for sustainability [48]. In consequence, tools have been developed to incorporate sustainability into the business models [49–51]. The project portfolio is a commonly used instrument for these purposes [52,53]. Nevertheless, the studies do not define how the company can check that the efforts made are on the right track.

Therefore, the aim of this paper is not to develop another tool for integrating sustainability. The study seeks to analyze whether the practices carried out by the company are on the right track and are being applied correctly. In this sense, the models analyzed do not describe an afterthought in their implementation, which does not allow the organization to know if its actions are really oriented towards sustainability.

Various conclusions can be drawn from the analysis carried out in this section. The first one is that the development of an exponential organization cannot just reside in the control process done by external experts, since all daily decisions are part of the process. The team itself needs to be able to guide its progress. The second one is that implementing sustainability in the business model is something that is increasingly necessary for companies, but there are still no tools that allow them to know if their actions are geared towards this objective.

For this reason, a new radically different approach is proposed, based on the analysis of the projects in progress, in order to situate and make the team aware of its own progress towards the exponential structure. For this purpose, a model for monitoring the evolution of organizations towards an exponential and sustainable structure, through the analysis and evaluation of the project portfolio, is developed. This will ensure that all projects are focused and aligned toward organizational sustainable development. The main objective is to know how the orientation of ongoing projects has changed during the last period, in order to position them in terms of level of achievement of the desired transformation.

3. Methodology

In order to develop the model, a large multi-national firm that comprises multiple independent business units was engaged. Input was obtained mainly from the R&D unit of the firm. For the design of the model, an adaptation of the development framework proposed by T De Bruin et al. [54] has been followed. The authors have stated a general methodology for developing maturity models to measure competency. Although focused on maturity models, the paper outlines the main phases of generic model development applicable across a range of domains. The methodology involves six phases:

1. Scope
2. Design
3. Populate
4. Test
5. Deploy
6. Maintain

The authors consider the main starting point as the purpose for which a model may be applied, with three categories: descriptive, prescriptive or comparative models. When descriptive, the application of the model would be seen as single point encounters with no provision for providing relationship to performance. A prescriptive model provides emphasis on the domain relationships to business performance and indicates how to approach maturity improvement in order to positively affect business value. A comparative model enables benchmarking across industries or regions. According to this taxonomy, the model of this study is a prescriptive model. The model is initially viewed as a diagnostic tool, that first enable assessment of an entity (the discovery session). Then, the model is used to assist in the determination of the strategy for improving the position from 'as-is' to 'to-be' (the reflection session).

The first phase was to determine the scope of the model. According to Bruin et al. [54], the main decision made in this phase is the focus of the model: domain specific or general. The proposed model is generic, as it is not intended to a specific business sector or field. Conducting an extensive review of the existing literature is part of this phase. The most relevant was presented in the former section. Some ideas were taken from the existing models for the design of the new one. The main contribution was the Ismail et al. [10] attributes.

The second phase consists of determining the design for the model. Points to be determined here are the audience (internal or external), the method of application (self-assessment, third party assisted, or certified practitioners) and the respondents (management, staff, and business partners). In particular, this is a self-assessment internal model and the respondents are both managers and staff. Bruin et al. recommend focusing the design of the model turning around the needs of the intended audience: why they seek to apply the model, how the model can be applied to varying organizational structures, who needs to be involved in applying the model, and what can be achieved through application of the model.

The populate phase involves the development of the model. Brainstorming sessions, focus groups, and pilot or pre-testing were the instruments used. The focus group consisted of individuals selected from several business units for which the model was to be used.

The next step in the process was to test the model. The initial construct testing was accomplished by way of pilot testing, undertaken with a portion of one organizational

business unit to determine model acceptability. Subsequent brainstorming sessions identified the need to introduce some modifications on the model until it was finally accepted. The model has been finally deployed in the pilot organization. As a first step, the model has been deployed in the business unit where it was developed. As a further step, the model will be applied within business units that are independent of the model development. Additionally, as the model is applied across the organization over time, a revision and maintain of the model will be performed.

4. Results: Model for Monitoring the Implementation of Exponentiality

The model developed is based on the identification, selection and evaluation of projects according to their adaptation to the exponential performance, with team leader's collaboration. It is a combination of the project portfolio analysis and the group's valuation that ends up with a self-assessment of the current situation, weaknesses and strengths. At the same time, it will allow to know if its actions are really focused on sustainable development (bearing in mind that this is one of its objectives). This model is called Fostering the Route to Exponential Development (FRED) and is based on two sessions, done one week apart. The first one is called Discovery and the second one is Reflection. Each session has different steps summarized in Figure 5.
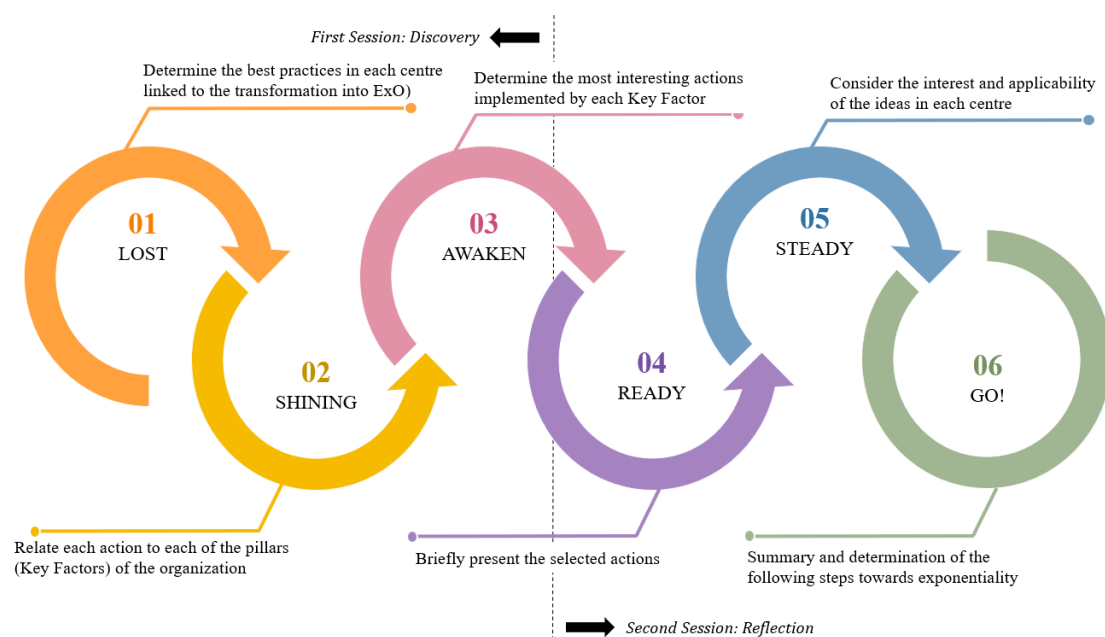

Figure 5. Steps of model developed.

4.1. First Session: Discovery:

In the first session discovery, is made up of 3 different sub-stages (lost, shining and awaken). In this session, the projects are analyzed and a poll is taken. This part will generally last 4 h, although it will depend on the number of participants.

(1) Lost

First, the key elements for organization development must be identified, which will be called Key Factors (KF): equipment, safety and health, environment, communication, internationalization, digitalization, etc. These Key Factors are critical aspects in the organization, and must be developed through its activities, and therefore, through its projects. In this first step, the first result about the importance of the sustainability within the organization can already be obtained. If it is not even one of the main pillars (KF), it means that it is not being taken into account in the business model. The next step is to identify the best practices of each department of the organization linked to exponential transformation.

First of all, generate a set of representative ideas selected from the best actions of each department, then, select the best actions based on expert knowledge and finally identify the ideas with the KF of the organization. The selection of ideas could have been made randomly. Particular actions are not relevant if they do not represent the overall behaviour of the organization.

(2)   Shining

At this step, the most representative projects are selected from those developed by the organization, ideally 10, and no more than 30. These can be of any type and area. In order to guarantee the diversity, each team or department leader proposes 2 or 3 of their own projects under development, the number of projects proposed depends on the number of attendees and its content is identified by a simple sentence or paragraph, but the proposer should not be identified. The projects must meet certain the following criteria:

- Projects must be active, avoiding those that are only initial ideas or not approved and they must be recent, i.e., have started in the last period or have changed significantly in this period.
- Cases must be especially relevant for some cause: theme, size, impact on the organization, etc.
- Proposers will associate each one of their projects with just one of the Key Factors (KF). This will result in a group of projects for each KF. Not all Key Factors may have the same number of associated projects.

Therefore, this stage aims to obtain a quick analysis on the distribution of the different actions or projects in the organization. The importance of sustainability within the organization will again be reflected at this point. if it has really been implemented within the business model, some of the actions selected should go this way.

(3)   Awaken

With the final objective of identifying 10 representative projects of the organization, in this stage these projects will be analyzed in more detail and will provide information about the exponential level of the company. The aim is to select the most homogeneous project across all areas or departments of the organization and from each KF. This promotes diversity and determine whether the organization performs its work equally in all its areas.

When all the team leaders are gathered, the session master (session organizer) presents the projects, so the proposer is not directly identified to avoid bias in the selection. The projects are subjected to collective opinion, rejected the irrelevant ones and giving more importance to what the organization, as a whole, considers relevant. Each participant will vote secretly on the project they consider the most appropriate within each KF. The result is a group of diverse actions that had been valued by peers as relevant to the organization.

The first performance can already be seen at this stage since it indicates the ability to generate projects necessary for the ExO transformation and focus on sustainability. First of all, with the number of projects assigned to each KF it is possible to detect which areas are preferentially dealt with by the organization. If a KF does not have any project, it will mean a lesser concern for that line and the need to reinforce the work on this factor. Those fields with the highest number of proposals demonstrate the real priorities of the organization, and even of the leaders. In addition, as the number of projects selected is considerably less than proposed, several teams may not be represented, in other words, some proponents will have all their projects chosen and others none, as well as all the intermediate options. This fact can indicate the different implication level of each department on the transformation to the new structure.

4.2. Second Session: Reflection

In this session, on the basis of the data collected and treated, the key aspects are evaluated and the actions are determined. This will last −2–3 h and is made up of these sub-stages: ready, steady, and go:

(4)　Ready

The proposers of the selected projects prepare a 5 min brief presentation that allows the rest of the participants understand the approach and scope of the project presented. It is not about presenting the technical content or the details of the project, but rather the general concept to identify its interest and novelty. Therefore, each project should include at least the following aspects: problem to be dealt with, degree of implementation, advantages of development, difficulties encountered in the application, acceptance level, and relationship to ExO. After the presentation, a new round of doubts will be opened to clarify the aspects that have not been fully understood.

(5)　Steady

Attendees must assess each of the projects presented from two points of view based on the interest of the action and the applicability to own case. For this evaluation, the participants will score from 1 to 5. There may be relevant actions that are not applicable to all cases, so this double valuation allows a double identification: the most significant actions and the most replicable ones. This stage aims to analyze the projects carried out, there may be projects that are very interesting but have no direct application or vice versa. In this way, gaps in the organization can be seen, for example, if there are projects that are considered applicable, why have they not been replicated in other areas?

(6)　Go!

This stage is based on Salim Ismail's attributes for exponential growth and checklists but with a reduced number of questions. There are 10 questions related to each attribute and 3 specific questions that are considered representative of the total group depending on the objectives of each company. These questions will be selected in Table 1. The model and sessions are identifying key elements for the organization, whose performance could be followed and analyzed with Objectives and Key Results (OKR). This is an internal working method that allows the company to organize the work, define work groups and track the progress of each employee. Therefore, the work of the entire organization is aligned with a single direction for all its members. The performance objectives that the organization wants to achieve will be set according to its maturity level.

Table 1. Questions and specific questions that suits the interest of the organization.

Attribute	Question
Staff on demand	Is the organization using any of the staff on demand services available to get started quickly?
Community and Crowd	Does the organization have the first movers and specialists?
Algorithms	Is the organization applying the algorithms for daily data-based decision making?
Leveraged assets	Does the organization have easy access to assets when it needs them?
Engagement	Is the organization creating customer loyalty?
Interfaces	Is the organization measuring the effectiveness of their algorithms and automated workflows?
Dashboards	Is the organization getting the information it needs to make better decisions faster?
Experimentation	Has the organization defined a smooth, flexible process for capturing and leveraging new knowledge, including the use of a tool to categorize results?
Autonomy	Does the culture of the organization support autonomy and independence?
Social Technologies	Are the organization's products and services defined considering the social element?
Specific questions	
Data Quality	Is the quality of the data high enough (i.e., to avoid junk in, junk out)?
Analysis	Is the organization using the analysis provided by algorithms to drive decision-making for its products or services?
Culture	Is the organization managing the resulting cultural shift within the organization?

5. Application in a Particular Case

The real usefulness of the model developed based on projects is that the organization produces its own knowledge and the transformation is adapted to its own needs. In order to validate the model, it has been applied to an R&D organization with nearly 2000 employees that involves 17 top-level managers from different areas, all of them are engaged in the search for organizational change. This change is not entirely exponential, but pursues a similar agile principle, although less ambitious. Once these KFs have been obtained, the FRED model is applied in the two discovery and reflection sessions as described below.

First Session: Discovery

The first session was scheduled for 3 h. Voting was done anonymously using Survey-Monkey tool that is a free online survey tool to capture information.

(1)   Lost

During this first part, the activity was presented and the steps to follow were commented. The first step is to identify the Key Factors of the organization. In this case, the organization has nine defined pillars, which are the Key Factors in its strategy (Figure 6). As can be seen, there is no "sustainability" pillar, but there are several of them aligned from the environmental and social pillars. Therefore, the organization has passed the first filter. As stated in the previous section, the next step is to identify the best practices of each department of the organization linked to exponential transformation and select the best projects based on expert knowledge.
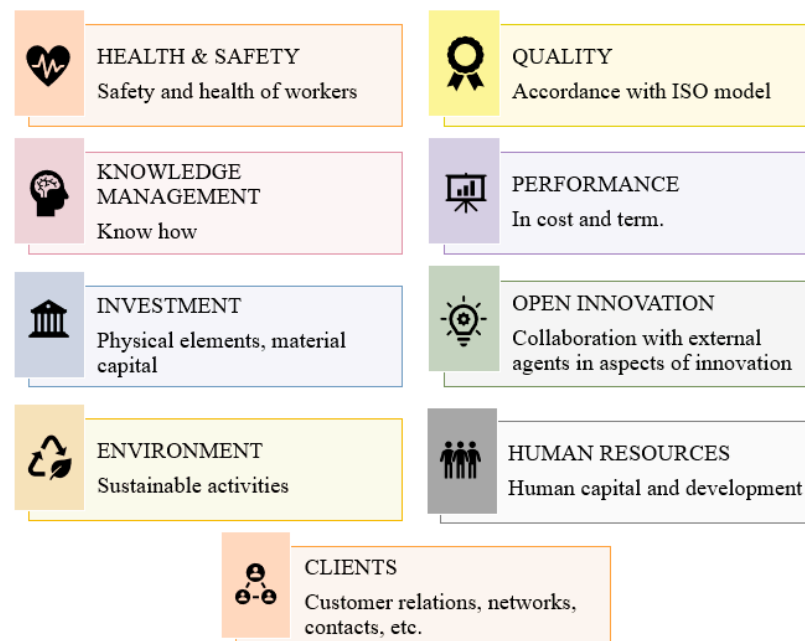
HEALTH & SAFETY	QUALITY
Safety and health of workers	Accordance with ISO model
KNOWLEDGE MANAGEMENT	PERFORMANCE
Know how	In cost and term.
INVESTMENT	OPEN INNOVATION
Physical elements, material capital	Collaboration with external agents in aspects of innovation
ENVIRONMENT	HUMAN RESOURCES
Sustainable activities	Human capital and development
CLIENTS	
Customer relations, networks, contacts, etc.	

Figure 6. Key Factors of the organization.

(2)   Shining

Once the best practices in each area had been identified, each department leader had to select 2 or 3 of their own projects under development, which they considered the most relevant ones. These projects had to be active and be especially relevant for some cause. The proposers associate each one of their projects with just one of the Key Factors (KF). This will result in a group of projects for each KF. Figure 7 represents the analysis of the proposed actions, each of them was assigned to one of the KF. The Key Factor Environment was the only one without associated projects. Although the company has the Environment as a fundamental pillar, no major projects are being developed in that direction. Therefore, although it seems that the company is moving towards sustainable development, here it

can be shown that this is not the case. Regarding Human Resources, only has one project associated with it. Most of the actions concerned operational aspects: Performance and Open Innovation. Although the organization seems to want to implement sustainability within its business model, there are really no actions towards environmental pillar. Here the usefulness of the model developed is already demonstrated, as it is the first indicator that things are being done wrong without meaning to. This simple analysis already provides the first result: the most interesting projects are not equally distributed. This fact allows management to make questions: "Should Environment really be one of the Key Factors?" If it is maintained, measures must be taken to ensure that it is developed to the same extent as other Key Factors. Otherwise, a reorientation of these priorities should be carried out.
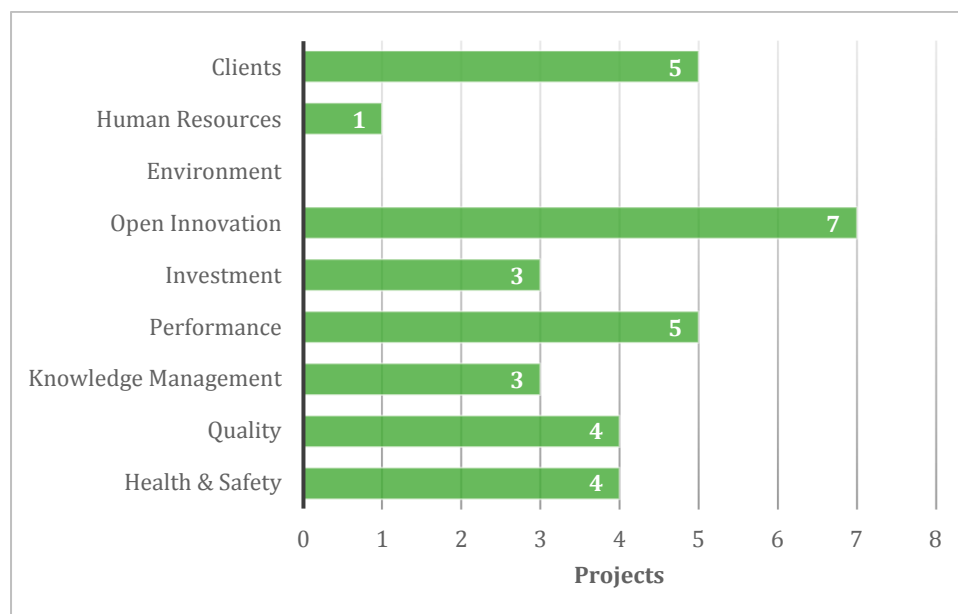

Figure 7. Proposed projects linked with the KF.

(3)   Awaken

Based on the ideas presented above, the most representative projects will be selected. This selection could be random, but a vote was chosen among the heads of each department. The aim is to select one project, selecting the most homogeneous across all areas of the organization and from each KF. Table 2 shows the percentages assigned to the most voted project in each KF versus the proposed department and the total number of projects. In the case of Quality, among the 4 projects, 50% of the votes went to the selected one, so it was considered interesting by an important part of the attendees. In the case of Human Resources, the percentage was obviously 100% since there was only one option. Particularly interesting is the case of Clients which, despite having 5 possible projects, the selected one accumulated 75% of the votes. Finally, the last column shows the department responsible for the idea. There are different levels of implication between departments. While A and B proposed more than one of the selected projects, others ended up with one or no project chosen. Knowing the origin of the projects brings the second conclusion under which, two departments have all their ideas selected, and 6 of them none. The question then is: "Do all departments have the same interest in the search for exponential actions?" With this model it is possible to know those departments that are not working enough.

Table 2. Valuation of the projects by the heads of department.

Key Factor	Projects	%	Area
Health and Safety	4	37	A
Quality	4	50	C
Knowledge Management	3	56	F
Performance	5	30	A
Investment	3	41	B
Open Innovation	7	37	B
Environment	0	-	-
Human Resources	1	100	G
Clients	5	75	D

Second session: Reflection.

At this point, all participants have enough information about the key projects that others in the same organization consider them successful. We then move on to the second 2-h session, where key aspects should be evaluated and conclusions reached.

(4)   Ready

Eight projects were obtained that were considered important by the most relevant positions of the organization. A 5-min explanation of each one was given by the session organizer, followed by a brief opportunity to ask questions. At this point, all participants had enough information about the key actions that people inside the organization considered successful.

(5)   Steady

A new poll was taken with a double question (from 1 to 5): "Is this project interesting for the organizational change of the company?", "Is this action applicable to your department?". There may be relevant actions that are not applicable to all cases, so this double valuation allows a double identification: the most significant projects and the most replicable ones. The results of that vote are summarized in Figure 8.
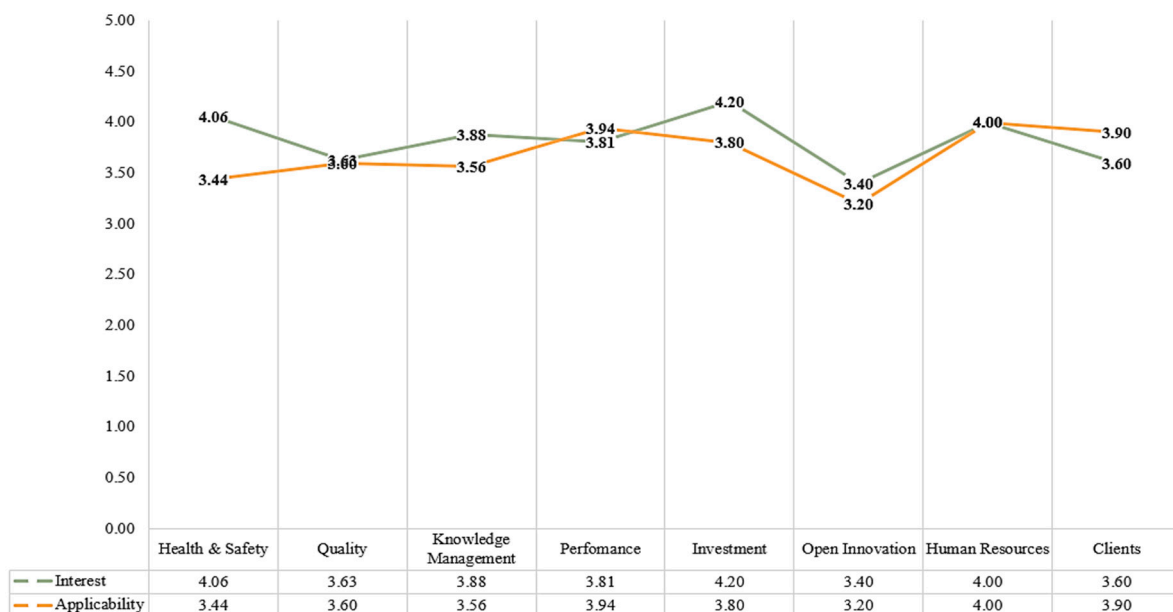

	Health & Safety	Quality	Knowledge Management	Perfomance	Investment	Open Innovation	Human Resources	Clients
Interest	4.06	3.63	3.88	3.81	4.20	3.40	4.00	3.60
Applicability	3.44	3.60	3.56	3.94	3.80	3.20	4.00	3.90

Figure 8. Interest and Applicability survey results.

The results always had an average higher than 3 because it is difficult for an action proposed by a department leader to be rated badly by a co-worker. Therefore, the actual assessment range would be from 3 to 5. It can be seen that the most valued actions do not necessarily coincide with the most applicable ones. In general, the actions are

more interesting than applicable, except in the case of Performance. Something similar happens with Clients. However, a more detailed analysis provides some new conclusions, in particular:

- If some of the actions, such as Performance, Investments, Clients or Human Resources, are applicable to other departments, why has this not already been done? This could show a problem in the transmission of know-how between departments or a lack of interest of their managers.
- The case of Open Innovation is very significant. In this KF, 7 actions were presented, so it is evident that many departments are carrying out activities in this area. However, the most relevant share has a very low valuation. In consequence, the actions carried out in this Key Factor are not adequate, even though important efforts are being made. Ideally, the solution would be to unify the actions and focus them into the right direction.

(6) Go!

Finally, once a group of relevant projects was analyzed and their interest was valued, it remained to be seen whether these actions were in line with the organizational transformation. For this purpose, the leaders were asked to give their opinion by voting on different questions about exponential development. The first step is to select the questions. In this case, the company chose 7 questions, related to 6 different attributes, and 3 specific questions that the company considered representative of the organization's efforts, or which were considered key to the exponential transformation (Table 3).

Table 3. Questions selected.

Attribute	Question
Staff on demand	Is the organization using any of the staff on demand services available to get started quickly?
Community and Crowd	Does the organization have the first movers and specialists?
Algorithms	Is the organization applying the algorithms for daily data-based decision making?
Leveraged assets	Does the organization have easy access to assets when it needs them?
Engagement	Is the organization creating customer loyalty?
Experimentation	Has the organization defined a smooth, flexible process for capturing and leveraging new knowledge, including the use of a tool to categorize results?
Dashboards	Is the organization getting the information it needs to make better decisions faster?
Specific questions	
Data Quality	Is the quality of the data high enough (i.e., to avoid junk in, junk out)?
Analysis	Is the organization using the analysis provided by algorithms to drive decision-making for its products or services?
Culture	Is the organization managing the resulting cultural shift within the organization?

The questions selected correspond to the 5 SCALE attributes, and only 2 IDEAS. Therefore, it can already be analyzed how the organization focuses its efforts mainly on capturing knowledge (access to the world of abundance), rather than on managing and driving it. Questions are related to each exponential attribute. Leaders must vote according to the contribution they think each project has on each question. The results are shown in Figure 9.
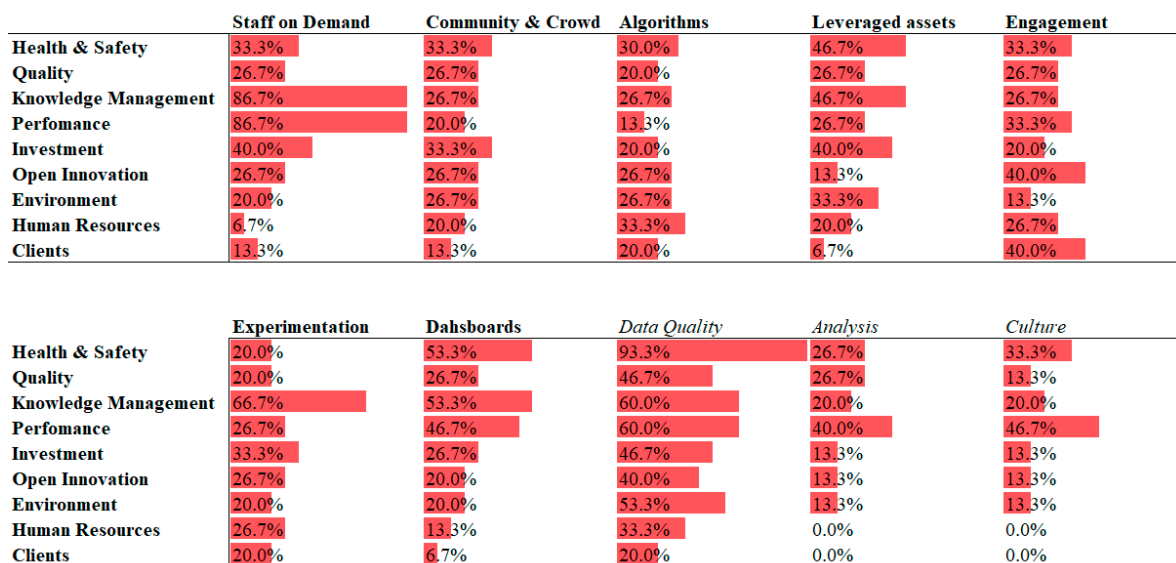
	Staff on Demand	Community & Crowd	Algorithms	Leveraged assets	Engagement
Health & Safety	33.3%	33.3%	30.0%	46.7%	33.3%
Quality	26.7%	26.7%	20.0%	26.7%	26.7%
Knowledge Management	86.7%	26.7%	26.7%	46.7%	26.7%
Perfomance	86.7%	20.0%	13.3%	26.7%	33.3%
Investment	40.0%	33.3%	20.0%	40.0%	20.0%
Open Innovation	26.7%	26.7%	26.7%	13.3%	40.0%
Environment	20.0%	26.7%	26.7%	33.3%	13.3%
Human Resources	6.7%	20.0%	33.3%	20.0%	26.7%
Clients	13.3%	13.3%	20.0%	6.7%	40.0%

	Experimentation	Dahsboards	Data Quality	Analysis	Culture
Health & Safety	20.0%	53.3%	93.3%	26.7%	33.3%
Quality	20.0%	26.7%	46.7%	26.7%	13.3%
Knowledge Management	66.7%	53.3%	60.0%	20.0%	20.0%
Perfomance	26.7%	46.7%	60.0%	40.0%	46.7%
Investment	33.3%	26.7%	46.7%	13.3%	13.3%
Open Innovation	26.7%	20.0%	40.0%	13.3%	13.3%
Environment	20.0%	20.0%	53.3%	13.3%	13.3%
Human Resources	26.7%	13.3%	33.3%	0.0%	0.0%
Clients	20.0%	6.7%	20.0%	0.0%	0.0%

Figure 9. Relationship between projects and exponential transformation.

When Figure 9 is analyzed by columns, it is possible to see that there are aspects covered with high levels of satisfaction and in various actions or projects. This is the case of Data Quality. However, in other cases, not even 50% is achieved. Specifically, it is interesting to analyze the three questions related to data and algorithms. The organization captures data in various projects and also captures knowledge with the Experimentation. However, the exploitation of this information is very low: Algorithms are not developed enough and they are not used to make data driven decisions. This would be equivalent to a level of development of 33% within the exponentialization of the organization in the field of information. Although the Environment did not involve any significant projects, when it comes to evaluating its exponential behaviour it is being contemplated through other projects and it is contributing to exponential development.

Internal and external relationships are another area of study common to several of the questions. While the Culture of the organization does seem to be affected by the actions taken (even if it is only at the level of Performance), no action is being taken to attract external leaders nor customers (Human Resources and Clients, respectively). So, the projects carried out have exclusively an external effect.

This problem can also be observed if the Figure 9 is analyzed horizontally. Neither the rows of Human Resources nor those of Clients have high values. Likewise, the action related to Open Innovation, i.e., external collaborators, does not add value to any of the questions, which shows the inadequacy of these activities. To sum up, new conclusions and needs are drawn from this new analysis:

- The organization has an adequate level of development in terms of mainly productivity data, but these data do not extend to the rest of the organization's activities and are not used in algorithms that help in the decision-making process.
- Although the culture is changing, the aspects related to the stakeholders are not being adequately treated and require improvements.

Therefore, key elements are proposed for the organization, which will be monitored using OKR, in order to present a clear direction of what the company intends to achieve.

The results analyzed show how it is possible to monitoring the exponential progress of an organization with the help of team leaders. Contrary to the models shown in Section 2, no external specialists or coaching sessions are needed to follow up. Moreover, it is not just intended for the organization's leaders, but can be replicated at any level.

The follow-up by questions, outlined by Ismail et al. [32], was a sound option but too difficult to implement correctly. By reducing the number of questions, more concrete answers and quantifiable results are obtained. Furthermore, it is the organization itself that

can choose some of these questions (specific questions in Table 1), depending on the line of development it wants to pursue.

On the other hand, by incorporating the key elements of the organization into the model (Key Factors), it is possible to carry out personalised monitoring based on projects. The other models were too general to be implemented in an already established organization and did not show the actual level of exponential implementation.

Finally, as can be seen, this model also helps to determine which pillars and departments of the organization are working more and less. It allows leaders to ask themselves questions about whether their efforts are on track, and all this enables the organization to grow in line with sustainable development. Even though sustainable development is often one of the fundamental pillars of organizations, it is not really implemented [8]. This model makes it possible to know in which aspects changes must be made to achieve it.

6. Conclusions and Future Research

Exponential organizations are those that succeed in adapting to technological development. While technology advances exponentially, many organizations continue to grow in a linear way. Because of this, a lot of models have been developed to try to transform and adapt companies to this reality. However, a change of this magnitude is not a one-off event and must be carried out daily. On the other hand, sustainability is another of the necessary points of change for companies demanded by society. Although many organizations seem to integrate a sustainable vision into their business models, the reality is that very few of them manage to actually implement it.

Models and tools have been developed in both ways specifically; on one side, to transform an organization into an exponential one, and on the other side to incorporate sustainability into the business model. However, it is not possible to know if the actions carried out really leads to their goal. The model developed in this paper provides a solution to both problems by analyzing the organization's progress in terms of exponential growth and sustainability through the project portfolio.

The novelty of this model is that it is based on the project portfolio and strategic pillars of the organization. In this way the leaders can appreciate deficiencies in each of them and know which ones are really the most important or in which they are investing more time or money. At the same time, this allows the organization's strategy to really aligned their actions and projects with sustainable development and this is the main difference with the other models developed to date.

From the work carried out, it can be deduced that it is possible to assess progress within an organization by looking at projects without having to create new indicator structures. Simply using the indicators already established for the organization's projects it is possible to assess exponential progress. The main activity is developed in a 5-h session, so it does not imply a relevant loss of working hours or a significant difficulty in finding group availability. Unlike the models analyzed throughout the article, it does not involve a lot of time and can be repeated in any link of the organization. In this way, a real point of change is established for organizations that want to achieve exponential growth without the need for major organizational changes. The main limitation of this model lies in the company under study. The development of the model was based on the same company in which an example of application was subsequently carried out. It would be useful, therefore, to implement the model in other companies to really check its usefulness and results.

Another major constraint is the time factor. Establishing methods for implementation monitoring requires consideration of this time. Therefore, one of the main future lines of research is to incorporate the speed of project development into this model.

Like other future lines of research, a specific indicator is to be incorporated to measure the sustainable development of the organization and provide more concrete results in this area. Finally, it would be interesting to add the human factor, analyzing the behaviour of the participants in the session. The answers to the questions themselves can be analyzed, either anonymously or not, to determine the individual or collective behaviour of each one

of them. With this analysis it will be possible to determine the different sensitivities about the adoption of this model.

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