Abstract—Starting from the Darwinian legacy, a number of scholars since the middle of the '70s have tried to construct a biological theory for firms. Arthur Stinchcombe (1965) in his seminal work ‘Social Structure and Organization’ contributed effectively to the academic debate, shedding light on the exogenous and endogenous variables behind the early selection pressure for infant firms. The single most important internal driver is the development and enforcement of organizational routines. This work draws from existing studies in socio-economic Darwinism and Organizational Routines to counteract the death rate phenomenon for newborn enterprises. The approach proposed is quite different from a generalized Darwinian perspective as it is based on a multi-level co-evolutionary model. The work is then completed by an empirical case study based on a real-world company.

Index Terms—co-evolutionary model, Darwinism, liability of newness, organizational routines

II. THEORETICAL FRAMEWORK

A. Arthur Stinchcombe’s liability of newness

The liability of newness predicts that, although monotonically declining with age, failure rates are high in the first years of the organizations’ life cycle and then decline as time passes by.

This means that firms in their early stage of the life cycle are more inclined to be selected out by the environment. After this ‘selection period’ the death probability (P(x)) declines monotonically to a minimal amount.

This phenomenon is strongly confirmed by data: only one third of newborn enterprises are still active after three years of life (e.g. Cafferata et al., 2009; Carmeli and Markman, 2011; Abatecola, 2012).

Stinchcombe identified a number of drivers either endogenous or environmental to justify this phenomenon.

Among the internal drivers the single most important factor is the learning process. (Burke, FitzRoy and Nolan, 2008)

‘New organizations, especially new types of organizations generally involve new roles, which have to be learned; […]

The process of inventing new roles, the determination of their mutual relations and of structuring the field of rewards and sanctions so as to get the maximum performance, have high costs in time, conflict, and temporary inefficiency (1965, p. 148)’

In other words in order to counteract early failure, exploration and exploitation of successful routines are needed. The main problem is that newborn enterprises have to invent and make efficient new habits for individuals – i.e. a learning process in the strict sense – and at the same time build a coherent organizational common knowledge.

Early mortality can be seen simply as the expression of this trial and error process in the learning curve that all newborn enterprises have to face. Fine tuning organizational processes involves time, more time means more resources, and if the entrepreneur does not possess the right management tools to drive individual learning and collective routines then the firm can be the object of early selection.

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B. Routines as unit of analysis

Historically, scholars used to define routines through the use of metaphors (Stene, 1940; Simon, 1945; Cyert and March, 1963; Nelson and Winter, 1982; Levitt and March, 1988) ranging from programs or scripts to genetic material. These metaphors define routines more as an abstraction than a human phenomenon and in doing so they underline the inertial feature of routines

“routines can be defined as repetitive, recognizable patterns of interdependent actions carried out by multiple actors”2

From the definition above four distinctive features about routines emerge

i) repetition: routines are not tasks performed una tantum, rather they are repetitive processes enacted by specific external stimuli;

ii) pattern of action: any routine possesses a core pattern of actions that is repeated in virtually all requests; in other words ‘they bear a sufficient family resemblance to cohere as a recognizable category’3;

iii) multiple actors: the performance of a certain routine has to take into account the interaction between a multitude of agents with complementary set of skills working together toward a common goal; it is very difficult for the abstract idea around a routine to be equally distributed around the multiple actors involved in the actual performance of a routine. At the limit it can be said that there is not one single, objective view about how to actually perform the routine, but a multitude of perspectives of anyone involved in the routine;

iv) interdependent actions: single actors perform their piece of the routine that presumably is linked with someone else’s performance. While interdependence between actions can be viewed as part of the structure, it can also generate variety within specific performances.

In order to understand the changing nature of routines we need to look further and analyze the so-called ostensive and performative aspects of routines.

Basically any routine is composed of two related components (Becker, 2004):

1. the general, abstract idea of the routine; to define this component, the ostensive aspect of the routine is used. It constitutes the base by which all agents involved in the performance of the routine are guided and measured;

2. the actual performance of the routine by specific people, at a specific time, in a specific place when they are engaged in what they think of as an organizational routine; this represents the performative aspect of the routine.

Understand the changing, evolutionary tendency of a routine involves looking not only at each single aspect, considered on a standalone basis, but rather understanding the interactions between the two. The circular relationship can be explained as one of the two aspects at the same time influencing and being influenced by the other aspect.

‘structure (ostensive aspect) is produced and reproduced through the actions (performative aspect) taken by agents, and the actions taken are constrained and enabled by structure’4.

The practical implication of this complex generative process is called an artifact and it can assume a number of different forms (e.g. written rules, procedures, internal codes and so forth) depending on the specific context.

Artifacts are a useful source of data in the study of routines, being ideally the final product of an organizational struggle between the agents involved. In particular, from one side, artifacts can be employed as a proxy for the ostensive aspects of a routine; from the other side, artifacts, such as databases, can provide a fruitful archive of the performative aspect of the routine.

III. THE CASE STUDY: EVIDENCE FROM THE WELL-BEING INDUSTRY

The most important internal explanatory variable for the liability of newness phenomenon is the development of internal (corporate) routines, or in other words how the learning mechanism originates in a company.

The big challenge is how to adapt the theory about routines with a real business facing the problem of liability of newness.

We interacted with the top management team of a well-being firm based in Fiumicino’s Airport, part of a multinational group headquartered in Paris.

When we entered the company there were issues related to almost all departments of the company (financial, organizational and managerial). The combination of all those issues put the business in a clear situation of struggle for survival and a concrete and fast evolution process needed to be activated in order to save the business from early selection.

A. Business description

Be Relax (from now on “the Company”) offers well-being and beauty services to airport passengers worldwide.

Through its subsidiaries, the company is located in the heart of the most important international airports and provides its services without the need to book an appointment.

The company was founded in Paris in 2006 as a start-up venture specializing in well-being services in airports.

Three years later, in 2009, the two founders started an international expansion process that took the company to a number of different countries.

Today, the Group has more than 300 employees worldwide, from 30 nationalities, and is represented throughout three continents and seven countries, with around €10m turnover.

The case study will be focused on the Italian subsidiary located in the Fiumicino Airport. Rome was the first step in the

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international expansion process of the Group, in 2008, when Be Relax negotiated with AdR (Aeroporti di Roma Spa) for two locations with a total of 70 sqm, in Pier Schengen and Satellite Intercontinentale.Units

Be relax developed a wide set of well-being and beauty services, ranging in time from 10 minutes to one hour.

The company used to divide its offer for services into two broad categories: i) relaxation services and ii) beauty services. Relaxation services includes chair massages, table massages, oxygen aroma therapy.

The beauty services on the other hand are further divided into the following: manicure, pedicure, facial skincare, waxing.

The former represent the original business idea to “provide relaxation services in the airports” and include basically massages of all type and length of time. The latter is a subsequent integration of the offer with the classic services provided by any beauty center such as manicure, pedicure, face treatments and waxing.

Other than services, the Company offers a wide range of massage, travel and cosmetic products, which are strictly related to the services provided. Those products can be divided into five broad categories, namely:

- massage products (such as accessories for massage, automatic massage machines and so forth). This line of products are marketed under the company brand;
- travel products (such as pillows, travel blankets, sleep masks, etc.). These products are sold under the company’s own brand too;
- cosmetic products (including all type of creams of external brands such as Sothys, Murad, Bibo, etc.);
- manicure products (mainly products coming from the brand Opi);
- miscellaneous

The Holding Company holds 100% of the equity of the regional subsidiaries, which are the operating subsidiaries of the Group in charge of running the actual business in the local airport.

Each regional branch is managed by a local manager, but all local managers depend on the Operations Department of the headquarter located in Paris.

The organizational structure of each regional branch possesses the following simple and flat structure:

- branch manager: responsible for running the entire business. In this particular case, she manages a total of three shops inside Fiumicino’s Airport;
- local trainer: main functions are i) training the new hirings, ii) monitoring the continuous compliance of the staff with the technical protocols created by the firm’s Paris Headquarters, and iii) helping the branch manager to monitor staff performance;
- employees: at the time of the analysis there were 12 employees in charge of performing the services included in the Group’s offer.

B. The creation of a corporate routine

The internationalization process, with the unavoidable geographical distance and the increase in the number of employees, imposed the need for creating an entire set of protocols and routines, in other words a shared common knowledge. At this time, routines serve as a starting point for any branch of the Group.

The Operations Department, in cooperation with the Marketing&Communication Department (Operational Marketing) decides how to organize the routine. They also usually receive consultancy input from an external expert, who has broad and consolidated experience in the actual performance of the service (i.e. massage expert). Once the routine has been tested and its efficiency well documented, the Marketing&Communication Department is in charge of developing the “Corporate Communication Contents”.

Basically they build manuals, videos and all the supporting material they think is the most effective for the particular situation.

Then the routines usually assume the form of documents written in French by the COO with the cooperation of the Marketing&Communication Department. Those documents are very detailed and are constituted usually by three parts:

1. includes a general description and the aim of the service;
2. illustrates the correct way to propose and to sell it;
3. finds the right answer for all possible questions that the customer could ask and the counter action the employee can make.

The documents are successively sent to the branch managers in each regional location. They have to translate them into the local languages, provide their staff with clear explanations and periodically control the correct implementation of the corporate routines.

The role of the COO is also to ensure that the general manager first knows the protocol and then is able to teach it to members of staff. Controls are performed in a number of different ways, such as:

- mystery shopping visits;
- COO visits the shop floor and tests the staff;
- COO tests the General Manager.

Given the importance of the monitoring system and the descending feedback mechanism we will analyze the impact of that function on the company’s operations.

C. The multilevel co-evolution model: the “As is situation”

When an individual is asked to accomplish a task, s/he can choose to select either a piece of collective routine (corporate routines) or select an action descending from individual habits. In particular a three-step process takes place:

- at step 1, the agent has to choose either to simply “follow the rules” or to perform the task using one of his
individual habits, descending for example from a previous work experience in the same field of activity. Moreover, in performing the task, the agent can either update his/her individual habit (individual knowledge) with the common knowledge coming from the collective institutionalized routine or try to modify the collective knowledge with his/her personal habit;

- **at step 2**, the agent enacts the selected strategy (individual habit or collective routine) through the actual performance of action;
- **at step 3**, the agent receives feedback related to the action performed. Feedback can come from different “external stakeholders” such as other colleagues, managers or customers.

At the end of this sequentially structured process, the agent interprets the feedback received, looking at the performance related to the specific strategy enacted.

On the one hand, individuals can choose to enact behaviors which they believe are appropriate to perform the task they have to perform based on past experience (path dependency).

On the other hand, individuals are forward looking. In particular individuals can use cognitive frameworks to anticipate the reaction (feedback) from the external environment by looking at the expected outcomes related to a particular strategy enacted by a specific action. In this way individuals try to anticipate future events through cognitive representations they have for those “expected futures”, basing their actual action on feedback related to similar tasks previously performed.

In other words, if an individual in the past received a good feedback from his boss for having followed the rules (collective routine) for a task similar to the one he is called to perform in the present, he will probably try to anticipate the “good” feedback using the same strategy enacted in the past, and follow the rule.

The main problem of the firm under analysis is that selecting an individual habit rather than a collective routine is not really an option for the employees of this organization.

We spent a lot of time studying the Headquarters monitoring system because we regarded it as the main obstacle to the evolution of the practices.

The organizational structure is completely coherent with a vertical, monolithic and bureaucratic form. Everything has been designed to eliminate from the system any form of deviation from the rules and this type of organizational design can be very dangerous for a company which competes in a fast moving and evolving environment such as the well-being sector.

The real “external environment”, the client, has been completely taken away from the feedback mechanism. Instead in this setting the employee considers “external environment” to be the structure itself (Local Trainer, Branch Manager and COO during on-site visits) and this has a deep impact on the individual cognitive framework and the resulting anticipatory system.

In this case the employee of the company, looking at their own external environment, knows *ex ante* that a deviant strategy (“I will not follow the rules, I will use a better protocol that I have learned in one of my previous experiences”) will receive bad feedback from i) the Local Trainer, ii) the Branch Manager and, when on site, by iii) the COO. So with the aim of preventing a bad outcome, the employee will choose the strategy that will receive the highest feedback possible (“I will follow the rules”).

The same reasoning made above for the individual level of analysis can be replicated for a multitude of individuals.

Any agent within a group can choose either individual habits/frameworks or collective routines/frameworks. Any individual will enact the action related to the strategy that s/he thinks is the most appropriate for a given situation. The sole difference between the two levels of analysis relies on the feedback mechanism. In a group level setting we have to take into account both the feedback coming from the “external world” directed to the group as a whole and the feedback received from each component of the group.

So when an individual inside a group decides to enact a certain action to accomplish a specific task, s/he will receive two feedbacks.

A feedback coming from the world external to the group (boss, client, etc.); this feedback regards the output produced by the members of the group considered as a whole (team). In a marketing activity, for example, it can be considered the final output of a marketing plan, like for example the launch of a new product in an existing market.

A complex set of feedbacks coming from each one of the components of the group. Again, returning to the marketing example, we are talking about the expectations of each component of the team regarding the work of anyone else in the same team. For example the person in charge of the analysis of the market data will hold expectations on both quality and quantity of data gathered by the individual in charge of this operation. At the end of the process the analyst will release his/her personal feedback to the data miner based on the expectations held in the past relative to the accomplishment of the data gathering activity. At the same time, the team leader will also have expectations on the data gathering activity and will release feedback based on a comparison of expectations and actual performances.

Given the complexity of the interactions and the different interpretations made by the other individuals, the process will involve interaction between individuals in different forms, such as communication, dialogue and negotiation.

Competing interpretations are thus resolved through the negotiation process of creating collective routines and frameworks. Becker (2005) maintains that “as collective replicators emerge within the group, individuals develop expectations of the behavior of other group members”. In other words, competing interpretations are resolved through a socio-political dimension that includes dialogue and negotiation.

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Normally divergent interpretations are resolved through the negotiation process of creating collective routines and frameworks. With the actual system used by the company, no collective replicators can emerge among employees because we are not speaking of a group in a proper sense rather is a multitude of individuals and they are not eligible to develop expectations of the behavior of other group members. In other words this organizational structure subtracts completely the sociopolitical dimension out of a team. In partial defense of the Headquarter we can say that the same nature of the job doesn’t facilitate negotiation and dialogue between employees because of they are constantly rotated among the three shops, but still, as we will demonstrate later on, communication channel systems can be effectively open in order to foster continuous learning.

D. Experiment setting

In order to overcome all the issues either at the individual or group level, the author and the branch manager set a total time for the experiment equal to two weeks.

We scheduled a series of individual meetings with the employees selected in order to explain closely what was going to happen in the following two weeks. In particular, during this preparatory stage, the main message was related to communicating the need for a shift in cognitive framework to every staff member.

Scheduled meetings had a basic common component and a specific one driven by personal characteristics, skills, attitudes and personality. The basic components were:

1. Total length of the project and main goal;
2. Areas of “variation” allowed;
3. Colleagues involved in the project;
4. First week target: update of individual level cognitive framework;

In particular the second and third points were crucial for the experiment.

When we had to define the individual level variations allowed to employees, we were very careful not to introduce big changes to the pre-existing structure. Considering the already delicate situation in which the Italian branch found itself, the author did not want to enact negative feedback at the Headquarter level, so decided to take a different approach.

We analyzed all the commercial material provided by the Headquarters regarding the whole commercial offer by the Group, then re-thought critically each product and service contained in the offer.

Basically we asked ourselves how it could be possible to maximize the earnings per client while providing at the same time a more profound well-being experience. For example if the client enters the shop to receive a pedicure treatment, the employee can extract additional value from him by offering the feet scrub service as an addition. In this way the client will pay a premium price for that.

For this purpose we build a products/services matrix and it was a very complicated process because of the general confusion in the commercial material; information was already there but in a totally messy fashion.

Looking at the matrix, we noticed that the Group’s Headquarters applies a severe control policy for the core business-related activities (massages) and a totally confused management style for the other activities (products). In other words, only the business area of well-being services (chair massage, manicure, pedicure and all services related to the original business idea) are well developed and routinized through corporate technical protocols.

This area represents the main target for the controls operated by the COO during his on-site visits, so we preferred not to allow any variation in this area. Nevertheless there is immense room for improvement thanks to all the products offered by the company but not strictly routinized. Considering that an ideal turnover breakdown for the Group is 55%/45% respectively for services and products, we are speaking of a substantial amount of total revenues.

During the individual introductory meetings our goal was to change the pre-existing mental model, introducing a completely renewed individual feedback mechanism. At this stage our aim was directed to eliminate the wrong feedback mechanism we had noticed during the analysis of the “as is situation”.

At the beginning, it was felt that the single most important issue relating to the definition of the areas of variation allowed was the probability that changes could really happen in a system designed in this way. Years of routines’ control could have provoked the establishment of a rigid interpretative and anticipatory system from the employee’s point of view. (“If I have always been evaluated on the strict observance of the rules and good feedback from the external environment is received only following protocols, probably I will continue to adopt in the future the same cognitive framework and I will accomplish the task using collective routines”).

As the we saw the individual cognitive framework as an integral and fundamental pillar of his model, if the individual cognitive framework could not be updated, no evolutionary path would be allowed in the system.

Selecting the employees for the experiment was an important component of the setup of the experiment. The staff was divided into two groups of four people each. Our aim at this stage of the process was to create two groups that could be considered for research purposes to be as close as possible to the concept of identical twins. We labeled them evolution team and check team.

In order to preserve the privacy of the employees, a psychological description for each one of them is provided, labeling the employee with her dominant characteristic, as follows:

- group leader, she is a natural born leader; she shares values and mission of the company, is a good motivator for the other members of the group and serves as an
additional reporting unit to the branch manager. In the experiment her main goal was to coordinate operations and lead/motivate the group using the author’s instructions;

- **sales talent**, a strong and international background in sales operations, a wonderful personal attitude and impressive relational skills make her the best sales person of the team and a valuable resource for our experiment;
- **rules-follower**, very precise and methodical person, with low flexibility and adaptability to changes. She seems to follow the rules only for “safety purposes” and not out of loyalty to the company;
- **rules-deviant or problematic**, there are only two employees that are really difficult to handle among the staff and we have to assign one of them to each group. She is naughty, she can understand rules but she simply feels uncomfortable to apply them in the right place, time or situation.

E. **First week results**

Since the first days of experimentation the staff were aware that “things can be changed” and better practices can be created and tested.

Basically the management (branch manager and local trainer) strongly communicated the message that they were free to choose either a corporate common knowledge or an individual habit, limiting the domains of variation to a certain extent, of course. Updating the mental model of the staff was, as we saw in the theory of the model, the building block for enacting an effective evolutionary process at the individual level and the local trainer was at the center of this changing mechanism.

In particular by i) limiting the areas of possible variation, ii) training the staff to approach the business with a new cognitive framework and iii) providing them with advice on request about doubtful areas of variation, we obtained, from the first days of application, an almost perfect shift from a rigid and inertial structure to a flexible one.

Previously the “external environment” was constituted by the local trainer and the branch manager, customers were completely excluded from the feedback mechanism, variations on protocols were not allowed and the resultant feedback they received was about the strict observance of corporate routines.

The changes that we introduced affected the feedback mechanism at the individual level. In particular, the external environment is represented by the customer, variations are allowed in particular areas and the customer himself releases feedback based on satisfaction for the service received.

An evolutionary mechanism can now be effectively enacted for company survival purposes.

Major innovation introduced were the “demarchages” and integration of services.

One of the employee – the sales talent – noted, after some trial and error, that some products can play an active role in “advertising” the company. She thought that a well-being service is a strange and unexpected business in an airport, so clients are frequently unaware of what is going on in the shop. But she also thought that before starting the “Commercial Speech” as stated by corporate routines, one could advertise the activity bringing outside the shop a “sample of the business”; in French language this operation of advertising the firm is called “demarchages”. She began by showing the “Shoulder Massager”, a very simple and cheap object made in plastic. She noted that this object attracted the attention of passengers more effectively than fliers, manifests and other commercial material designed by the company’s Headquarters.

In fact the number of potential customers increased dramatically; when customers enter the shop she continued to use the “Commercial Speech” and other mandatory corporate protocols in performing her tasks.

This innovation alone increased the number of product and services sold. But she continued exploiting all the products on offer; she started to show outside the shop the firm’s top of the range electric massager, the “Blom Body Massager” (€80 to the client).

The Italian branch, after only two weeks of experimentation, sold the highest number of Blom Body Massagers ever sold by any Be Relax branch, including the six-shops Headquarters located in the Paris airport.

With regard to the integration of the basic services offered let’s suppose that a client entered the shop for a “Be Up” chair massage. At the end the staff integrated the service by providing him/her with a trial demonstration of a massage product such as the “Shoulder Massager”. On the other hand, if a client entered the shop for a manicure service, the staff proposed the integration with an OPI’s manicure product. Obviously, they took advantage of their previous work experience in Avon and other leading businesses in the cosmetics sector and thus succeeded in selling many more products.

Those results were achieved by their personal attitude but also because during the performance of the service they developed a form of empathy with the client showing all the benefits of using a particular product and combining it with the performance of the service, as stated by the Company Routines and Protocols.

The best part of this type of innovation – by a large margin the best achievement in terms of impact on the company’s turnover – was that this “teaching component” of the service was completely replicable by any staff member as we will show in the next section.

F. **Second week results**

Following the first week of experimentation we tested the higher level of analysis, the Group Level of analysis.

We were very lucky in this regard because before no
feedback systems were in place; people were recruited, trained on corporate protocols and judged on that collective knowledge. Nothing could be varied consequently nothing could be passed on between staff members.

Therefore in order to facilitate the creation of collective routines and frameworks shared within the team we had to stimulate the negotiation process between participants. Basically we tried to find the best system to bring the variations retained at the individual level up to the group level by fostering a kind of “participative routines creation mechanism” and the subsequent “continuous learning” inside the group.

The brilliant results realized at the individual level could bring only limited benefits if this knowledge could not be distributed to the rest of the group.

So another organizational innovation using a French word, ‘Atelier’ was launched.

We thought that probably not any single person alone can enact valuable variation in an organization but at the same time anyone can participate actively in the retention process (by imitative replication) at the group level through participative negotiation.

The atelier session was structured as follows:

- an individual feedback was given to each component of the team;
- then each employee illustrated to the rest of the team the best practices he created during the first week;
- we asked to any employee to explain the reasoning behind a certain variation approach;
- discussion was fostered on the actual application of the new processes created;
- finally we launched the week 2 challenge: maximizing the turnover by applying all the new routines included in the discussion.

At the end the atelier was demonstrated to be a valuable instrument to distribute innovation and common knowledge among the team. Moreover, it fostered communication and human relationships between the staff, it developed a common and shared company culture and in addition it is a powerful tool to tune up the level of the “average employee”.

A synthesis of the cumulative results observed following the two-week experimentation is provided:

i. the second week of experimentation was tougher than the first with respect to the number of flights and consequently profits for the company;
ii. the performance realized by the evolution group (the subgroup of the staff in which we included the variations) was substantially higher than that of the check group either looking at the first week (£6,168 vs £4,866.20) or the second (£7,017.20 vs £4,162.60). The management of the branch said that the results of the evolution group in periods prior to the introduction of the changes were more or less in line with the performance of the check group. This demonstrate the big leap forward enacted by the new approach; moreover, the differences between the two managing methods are even more evident when the environmental conditions become more difficult, proving that the evolution group can extract all the possible profits out of the customer;
iii. the best performer in relative terms was the rules-deviant, thanks to the innovation brought to the product Be Fresh (+50.40% comparing her results of the first week with the second week);
iv. the rule follower became the best performer in absolute terms after the two week experimentation. This demonstrates the thesis that successful variations have a specific component related to personal characteristics but also a more general and transferable component that can be learned by employees who do not possess a creative attitude;
v. even in the tougher situation of the second week, total turnover increased, thanks to the group’s transfer mechanism that was called Atelier; all team members of the Evolution Team bettered their own result from the first week.

In our opinion, these practical implications are the direct consequences of the positive long-term changes that were enacted and they can constitute the starting point for the survival of the company.

IV. CONCLUSION AND FUTURE CHALLENGES

This work started from the basic concept of liability of newness: newborn enterprises are more liable to the struggle for survival phenomenon. This struggle is originated by a number of explaining variables – both endogenous and exogenous to the enterprise – and by resources’ scarcity. If we look at a newborn entity, it is fair to consider endogenous factors as independent explanatory variables and exogenous factors as independent explanatory variables. Indeed the manager in the early stages of a firm’s life is not able to influence his/her external competitive environment and thus the only way to survive is to manage the endogenous factors of his/her firm. Fostering the development of significant survival determinants, namely the exploration and exploitation of routines, was the main aim of this work.

The analysis was grounded in the organizational domain by defining a co-evolution model with a multi-level specification. At this stage we overcame a number of theoretical issues mainly related to general definitions of the model, to the indication of the units of analysis for each hierarchical level and to a consistent explanation for the relationship between feedback and evolutionary processes. Then the model was applied to a real-world business that can be considered as a newborn entity subject to early selection pressures. The aim was to identify causes that prevented organizational routines’ evolution and, modifying in the proper way the feedback mechanism for each organizational level, to enact an evolutionary process that would counteract the liability of newness. The main issue at this stage was to understand the
individual cognitive framework behind any member of the staff and how this individual component affected the group level decision-making process. This problem was solved with a well-designed empirical research approach based on face-to-face interviews which gave the author the possibility of analyzing any single behavioral component with a different view for any employee but with a common analytical base. In this respect the contribution of an internal view – namely the managerial standpoint – about the personnel was crucial for his results.

As for the future challenges for research, two desirable development paths, one theoretical and the other empirical, are suggested. The theoretical research challenge would involve counteracting the other endogenous variables that Stinchcombe described in his work, namely the concepts of the cooperation of strangers and trust. The anticipatory mechanism in cognitive frameworks can be solved with the games theory approach of backward induction. Also repeated interactions and trust can be treated with the general framework of cooperative games. It could be interesting to combine these concepts with a co-evolution multi-level model and try to understand if it is possible, in the same way the author did in this study, to enable a predictive mechanism on outcomes.

On the other hand, the future challenge for empirical investigation into this topic can consider the extension of the results of this study to sectors other than those analyzed here. As a matter of fact, in the industrial sector, routinized activities are clearly more important than in a service firm and consequently the evidence of an evolutionary process on routines may even be magnified.

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