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BUILDING LONG TERM MANUFACTURER-RETAIL STORE RELATIONSHIPS THROUGH STRATEGIC HUMAN RESOURCE MANAGEMENT POLICIES:
A System Dynamics Approach

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ABSTRACT

This paper is the result of a research project conducted by the authors with a manufacturer operating in the high-tech industry. It is based on the hypotheses that in order to successfully support retail stores, a manufacturer has to design policies based on Human Resources Management (HRM) practices aimed to increase retailers employees' sales effectiveness, and external-oriented policies to foster potential customers' acceptance of company product benefits. In order to support decision makers to explore alternative scenarios and to foster managerial learning on how to build strong and long term successfully manufacturer-retail outlets relationships, a System Dynamics model has been built.

In today's economy all manufacturers need to pay attention on how to build strong and long-term relationships with their retail outlets chain. In such a context, empirical analysis emphasised the crucial role of the human resource sub-system.

The use of a System Dynamics model allowed the authors to effectively support decision makers in exploring and evaluate alternative strategies and to foster managerial learning processes on how to build strong and long term successfully manufacturer-retailer relationships. It is worth remarking that the suggested human resources practices may represent an innovative vehicle for the development of studies aimed to adopt a systemic HRM approach.

KEYWORDS

Strategic Human Resource Management, Distribution Channel Management, Strategic Decision-Making, Managerial Learning, System Dynamics

I. RESEARCH CONTEXT AND BACKGROUND

This paper is the result of a research project conducted by the authors with a manufacturer operating in the high-tech industry. It is based on the hypotheses that in order to successfully support retailers, a manufacturer has to design policies based on Human Resources Management (HRM) practices aimed to increase retailers employees' sales effectiveness, and external-oriented policies to foster potential customers' acceptance of company product benefits. This work tries to demonstrate the effectiveness of the System Dynamics methodology in a strategic planning setting to support decision makers to explore alternative scenarios [Morecroft, 1984] and to foster managerial learning processes [Sterman, 1994; 2000] on how to build strong and long term successfully manufacturer-retailers relationships. Results from strategic scenarios sessions have been also used to design an empirical test of the identified successful policies on a significant sample of company's retail stores.

In today's economy all manufacturers need to pay attention on how to build strong and long-term relationships with their own distribution chain. In fact, it has been demonstrated that short term policies aimed to provide retailers immediate benefits (e.g., product price discounts) may prevent the development of long term and fruitful relationships [Liker and Choi 2004].

These issues have been debated in the field of the Distribution Channel Management [Dwyer et al. 1987; Anderson and Narus 1990; Ganesan 1994; Yilmaz et al. 2004]. In particular, it has been emphasised that manufacturers cannot ignore in designing long term growth-oriented policies, strategies aimed to increase the quality of the relationship with retailers and their mutual satisfaction [Brown et al., 2000; Geyskens et al., 1999].

By analysing the successful relationships between Japanese and North American companies, Liker and Choi [2004] emphasised "that immediate benefits of low wage costs [or aggressive pricing policy] outweighed the long-term benefits of investing in relationships". In particular, Liker and Choi also emphasised that Toyota and Honda built great supplier relationships by implementing a set of different, but coherent policies aimed to:

- investigate how their suppliers work;
- supervise their vendors;
- develop their suppliers' technical capabilities;
- share selected information intensively;
- conduct joint improvement activities.

Such remarks emphasise the central role of the human resource sub-system in building long term manufacturer-retailers relationships. This

requires that manufacturer identifies a set of coherent practices of retailers' human resources management able to build up their personnel effectiveness in promoting manufacturer's mission. This has been identified as the domain of the Strategic Human Resource Management (SHRM) [Wright and McMahan 1992].

This paper shows an analysis based on a real case-study (Jeppy LTD) aimed to support the management of the company in building a successful relationship with its own retail stores chain. Through several meetings with the involvement of the management, a System Dynamics model was built to explore alternative scenarios and related strategies. In particular, the use of the System Dynamics approach allowed to identify an effective set of policies based on HRM practices (recruitment, training and goal setting policies) and external efforts aimed to increase potential customers awareness of company product benefits.

In the first part of this paper, an analysis of main contributions in the Distribution Channel Management is outlined. Further, the role of the Strategic Human Resource Management is also remarked.

In the second part, the case-study, the evolution of the business, problem issues, feedback analysis of managerial growth policies, unperceived potential limits to growth and policy design to remove business limits to growth are discussed. It is worth remarking that problem issues and feedback analysis of adopted company growth policies are the results of several meetings with the involvement of the management.

Finally, an analysis of the main stock and flow structure of the System Dynamics model used to explore alternative scenarios and results from two simulation runs are provided.

II. DISTRIBUTION CHANNEL MANAGEMENT

Researches in the field of Distribution Channel Management underlined the relevance of enhancing the quality of relationships between manufacturers and resellers [Dwyer et al. 1987; Anderson and Narus 1990; Ganesan 1994]. As noted by Anderson and Narus [1984], manufacturers should focus on strategies aimed to increase resellers' satisfaction about the adopted distribution channel system [Brown et al. 2000; Geyskens et al. 1999].

In particular, as remarked by Yilmaz et al. [2004] manufacturer companies may increase the level of resellers' satisfaction by acting on four main areas:

- *delivery* (e.g., how well the manufacturer fulfils [retailers] resellers' procurement requirements);
- *operation* (e.g., manufacturers' contribution to [retailers] resellers' inventory management, store design);
- *personnel* (e.g., manufacturers' support about [retailers] resellers' personnel competence, courtesy and responsiveness);
- *financial and sales* (e.g., manufacturers' support about [retailers] resellers' sales and profits).

By effectively managing the above sub-systems, manufacturers may enhance retailers' commitment. As consequence, retailers could be more prone to invest in manufacturer's business and to share its mission, on a side,

and manufacturer could be more inclined to invest in distribution channel management, on the other side.

Such phenomenon is likely to generate a virtuous circle able to build up a long-term relationship between manufacturer and its retailers' chain [Fein and Anderson, 1997; Ross et al., 1997].

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- investigate how their suppliers work;
- supervise their vendors;
- develop their suppliers' technical capabilities;
- share selected information intensively;
- conduct joint improvement activities.

Such set of policies can be also applied in managing the relationships between manufacturer and retailers.

In particular, it is worth remarking that in the above suggested policies a crucial role is played by suppliers or retailers' human resources management practices. In fact, designing training programs aimed to develop retailers' technical capabilities and to improve their performance on a side, and implementing feedback mechanisms to monitor retailers' activities and, eventually, to suggest new plans to be adopted on the other side, have been demonstrated as successful strategies.

Based on such remarks, the next paragraph will provide to the reader a brief review of the SHRM approach and recurrent HRM practices often adopted by companies.

III. STRATEGIC HUMAN RESOURCE MANAGEMENT

The SHRM approach has been defined as a planned set of practices aiming to develop human resources skills and competences that allows organizations to reach its own objectives [Wright and McMahan, 1992].

In particular, in order to recognise how to effectively adopt a SHRM approach, Wright [1998] underlined four main issues on which organisations have to focus.

The first issue concerns the role of human resources as one of the main levers on which to act in order to build a sustainable competitive advantage.

The second is related to the drawing up of a coherent and articulated set of programs, actions and activities that can facilitate, on a side, personnel to acquire desired skills and competences, and on the other side, organizations to create an internal environment able to fully exploit personnel abilities to gain a sustainable competitive advantage.

The third refers to the necessity to systemically develop HRM practices. In particular, such practices have to be coherent among them and with corporate strategies.

Finally, the fourth focus on the strategic role of personnel unit in order to allow the organization to reach its own objectives. This issue emphasises the pragmatic dimension of the SHRM approach.

HUMAN RESOURCES MANAGEMENT PRACTICES: WHICH ONE?

The literature on SHRM underlines the relevance of HRM practices in order to foster companies' competitive advantage. However, organisations also need to identify which specific HRM practices have to be activated to improve companies' competitive positions. As it has been previously remarked [Wright 1998], in order to maximize the effectiveness of such practices, the identified set of HRM practices have to respect both vertical and horizontal coherence principles.

Many researchers suggested that HRM practices enable organizations to improve performance and achieve a competitive advantage that is likely to be substantially more enduring and more difficult to duplicate [Becker & Gerhart 1996; Delery & Doty 1996; Ferris & al. 1999; Guest 1997; Legare 1998; Pfeffer 1994; 1998].

In particular, Pfeffer [1998] emphasised the following seven HRM practices:

- employment security.
- Selective hiring of new personnel.
- Self-managed teams and decentralization of decision making as the basic principles of organizational design.
- Comparatively high compensation contingent on organizational performance.
- Extensive training.
- Reduced status distinctions and barriers, including dress, language, office arrangements, and wage differences across levels.
- Extensive sharing of financial and performance information throughout the organization.

Pfeffer's results are also supported by the study conducted by Hiltrop [1999] in 115 multinational and 204 domestic companies located in Western Europe. Hiltrop through interviews with human resource managers and personnel officers tried to explore the recurrent HRM practices adopted by firms. As result of this study, he identified 11 HRM practices that are conceived the most effective on both employees' productivity and company performance. Furthermore, he also detected that such practices are likely to attract and retain talents. In particular, he identified the following HRM practices:

- employment security.
- Opportunities for training and skill development.
- Recruitment and promotion from within.
- Career development and guidance.
- Opportunities for skill development and specialisation.
- Autonomy and decentralisation of decision-making.
- Opportunities for teamwork and participation.
- Equal benefits and access to perquisites for all the employees.

- Extra rewards and recognition for high performance.
- Openness of information about corporate goals, outcomes and intentions.
- Pro-active personnel planning and strategic HRM.

Although an exhaustive discussion of the HRM practices adopted by organisations to improve company performance is far from the aim of this work, the above analysis may help the reader to better understand the reason why we identified the suggested HRM practices in the policy design's project phase.

In literature, critics have been raised in the use of unselective HRM practices. In particular, Guest [1997] remarked that few studies adopt a systemic HRM approach. In addition, empirical analyses do not often investigate the structural relationships between HRM practices and their conjunctive effect on firms' performance.

This work tries to sketch the structural relationships between HRM practices and company performance on the basis of an empirical study conducted by the authors.

In the next section of the paper, it will be shown the result of the empirical analysis and, in particular, the case-study, the main feedback structure of the investigated issues, the main stock and flow structure of the system dynamics model used to explore, both the validity of the identified hypotheses underling HRM practices' effects on past company performance and alternative scenarios aimed to understand how to overcome company limits to growth.

IV. THE CASE-STUDY ANALYSIS

INTRODUCTION TO THE CASE-STUDY: JEPPY LTD

By the end of the 1980's, Samantha and Marc few months after their marriage decided to launch a new venture. The business idea of Jeppy Ltd turned around a simple concept: to create a technology able to increase human capabilities and to improve people's quality of life. Such a vision started from an observation of the diffusion of an innumerable electronic products used for various applications in houses, offices and companies. Even though most of them embody a common electronic part they are used to do only one application at a time. This is due because each producer designs a product as a closed system. For instance, when you buy a washing machine, an air conditioner and a computer you are often unaware of buying some common electronic devices three times. As a consequence, you are forced to pay three times for the same component. In addition, these three products are very often not able to communicate to each other.

In order to support people in managing simultaneously various applications with a low cost, in both home and working activities, Jeppy Ltd proposed a new "Unitary Technology" (UT) concept, based on an unlimited set of components (so called "bricks"), that can be linked to electronic products and each other. It's the same philosophy of the LEGO bricks game where by

combining various bricks among them, it is possible to build endless shaped products.

THE EVOLUTION OF THE BUSINESS

At the beginning of the 1990's, in order to create high quality products Samantha and Marc signed a partnership with major high-tech producers located in Asia. Such agreement also allowed them to sustain a low production cost.

In order to keep low company products' price and to reach potential customers that are interested in high-tech products, Samantha and Marc decided to sell Jeppy's product through high-tech products' retailers. As Samantha and Marc were conscious that the market was not ready to understand and, hence, to buy "UT" products (in spite of the high product quality/price ratio set), they also decided to launch on the market traditional products (so called "Trojan horse" products). Even though the latter appeared to end consumers as traditional ones (i.e., computers, videorecorder, DVD, etc.), they also embodied Jeppy's UT components. This was the initial commercial strategy pursued by Jeppy Ltd.

Company products have been sold by high-tech retail stores all over the domestic market. As the products had a very high quality/price ratio, due to the use of the latest technology, in few years Jeppy's sales revenues reached a satisfactory level.

At the end of the 1990's, during a management meeting, commercial managers were very happy of company results as they had been able to reach the desired level of sales revenues. However, both founders, Samantha and Marc, started to make some remarks related to company mission.

In fact, by analysing business figures they detected that the concept of UT offered by Jeppy Ltd was not understood by end consumers. In order words, it seemed that customers bought Jeppy's products without any consciousness of the bricks logic behind them.

In particular, Samantha and Marc pointed out two phenomena:

- end users do not tend to connect Jeppy's products among them;
- Jeppy's UT products show a dramatically decreasing sales pattern over time.

As they recognised that the initial strategy, based on the "Trojan horse" products concept, has failed to diffuse among customers the concepts and benefits of unitary technology products, they decided to reshape their strategy.

At the beginning of the third millennium, the management launched an own retail chain aiming to explicitly promote the concept of unitary technology products. In order to effectively introduce to potential customers such a revolutionary product concept, the company decided to provide retailers' employees an initial training course.

PROBLEM ISSUES

At the beginning of the 2001, the management decided to open a growing number of retail stores in the domestic market. By the end of the 2004 Jeppy Ltd could count on 166 stores (see figure 1).

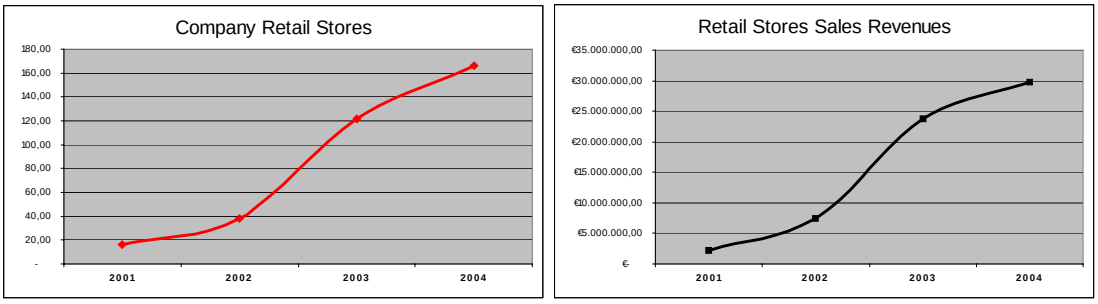

Figure 1. Retail stores and related sales revenues dynamics (2001-2004)

From figure 1, it is possible to note that in the observed period company sales revenues reached about Euro 30 Millions. However, by analysing the quantity of products sold over the selected four years (see figure 2), it is worth remarking that the so called “Trojan horse” products showed a continuous growing trend. On the contrary, the company products that explicitly embodied the unitary technology concept showed a weak growth in the first two years and a dramatically decline in the last period (see figures 2 and 3).

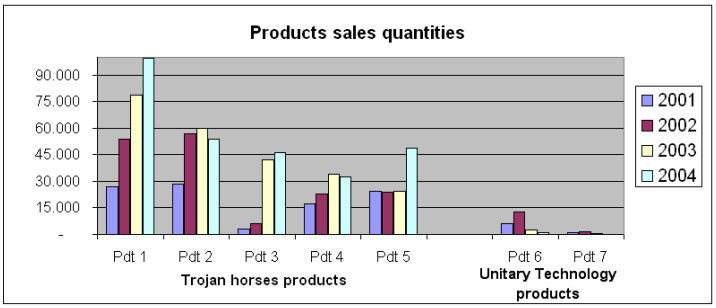

Figure. 2. Company products sales quantities (2001-2004)

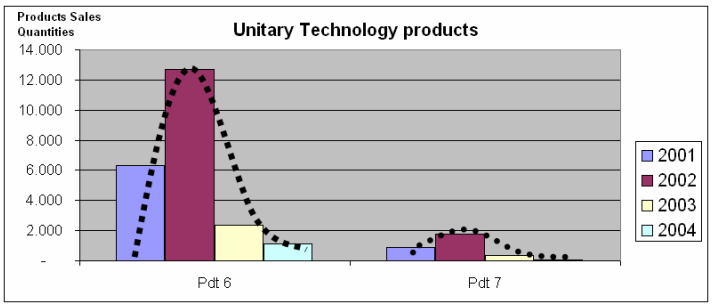

Figure. 3. Unitary technology products sales quantities (2001-2004)

Figures 2 and 3 depict the negative trend of the company unitary technology products' sales quantities. In fact, at the end of the 2004, the latter counted for less than 1% of the total company revenues.

Such figures stimulated the following key questions:

- *Why do sales quantities of "Unitary Technology" products show a weak growth and a decreasing pattern?*
- *What are the main causes of such drastic reduction?*
- *Why do sales quantities of "Trojan horses" products show a continuous growing trend?*
- *What is the real contribution of the company retail chain to the achievement of the company mission?*

Based on such key issues, the management decided to launch a project aimed to detect the causes underlying company strategy failure in achieving its mission and to design policies aimed to overcome business difficulties. Once we have been contacted by the management of the company and explored the above commented problem issues, we proposed the management to build a System Dynamics simulation model. The simulation model would have had to be used to investigate and better understand the business system behaviour and to evaluate emerging strategies coming form managerial debating and discussions [Morecroft, 1984].

A FEEDBACK ANALYSIS OF MAIN MANAGEMENT POLICIES AIMED TO OVERCOME LIMITS TO GROWTH AND TO FOSTER BUSINESS DEVELOPMENT

The project actively involved the management and, in particular, the company's Organising manager, who played a crucial role in the success of the study, as he strongly supported us in creating the "managerial" environment in which the scenarios developed through the system dynamics model were seriously debated and new emerging strategies evaluated. He also arranged meetings with key executives and provided data and information to fill the simulation model.

Once key variables and related behaviours over time were defined (figures 1, 2 and 3), the research focused on detecting cause-and-effect relationships underlying company growth policies and disclosing managerial unperceived potential limits to growth. Such an approach aims to build a system dynamics based simulation model to support strategic planning and decision making [Senge, 1990; Kim, 1989; Isaac and Senge, 1994].

In particular, the above key issues have been explored by using qualitative diagrams. Such a step has been done through five meetings with the company management. By using such diagrams company key performance indicators, policy levers and main cause-and-effect relationships among business variables have been made explicit [1].

[1] The methodology used to facilitate managers' mental model elicitation is based on the group model building approach [Vennix 1996].

In order to close the gap between the desired and the actual value of company sales revenues, the management planned to invest in marketing and mainly in opening new retail stores. In particular, the former would allow the company to spread out in the market product portfolio innovative characteristics and company brand. As a consequence, the management expected an increase in both customers and sales revenues. An increase in company revenues would have had to generate a reduction in the gap between the desired and the actual value. Once company revenues reached the desired target, marketing investments should be oriented to maintain such level of sales. This policy underlines the balancing feedback loop portrayed in figure 4.

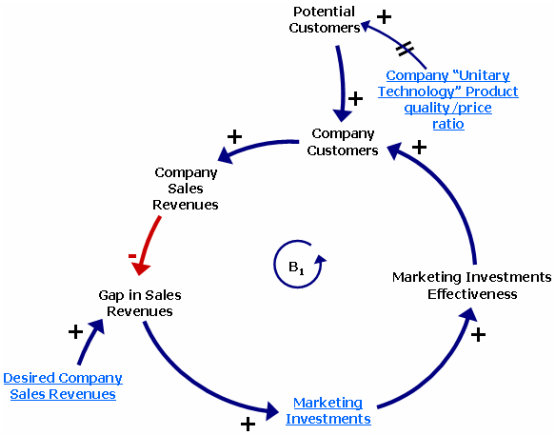

Figure. 4. Balancing feedback loop leading to company sales revenues growth through marketing investments

The other policy adopted by the company to meet the desired sales revenues is based on investments aimed to open new retail stores and at the same time to provide personnel's training programs and product cost discount. According to managers' perceptions, such investments in the retail chain would have had to allow the company to increase UT products sales. In fact, in order to effectively communicate to potential customers the concept and related benefits of UT products, the increase of retail employees skill and motivation has been perceived as very critical. Managers agreed that to increase UT products sales it is possible to adopt two different policies:

- a basic training course of retailers' employees on the UT concept and related benefits and
- a high product cost discount compared to other resellers.

In fact, managerial expectations were based on the fact that an increase in retailers' employees skill and motivation would have had to foster the effectiveness in communicating UT products' benefits and potential customers' acceptance. Furthermore, as UT product quality/price ratio is very high, an increase in potential customers' acceptance should contribute to boost the number of potential customers that decide to buy company UT products.

Such phenomenon could boost company sales revenues to the desired target. Once such a target has been achieved, the management could be oriented to invest new resources in the development of the retail chain to keep such market position or to set higher sales targets (see balancing loop B2 reported in figure 5).

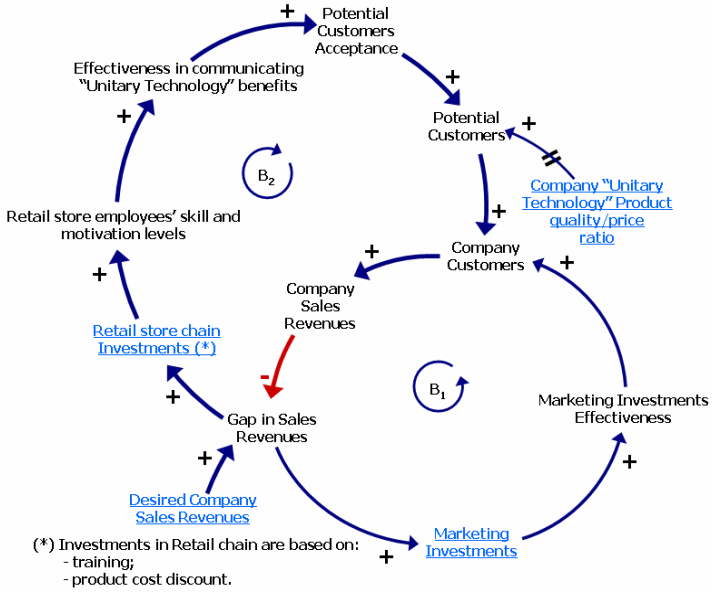

Figure. 5. Company retail chain investment policy aimed to reach the desired level of sales revenues

UNPERCEIVED POTENTIAL LIMITS TO GROWTH OF MANAGEMENT POLICIES

Feedback loops depicted in figures 4 and 5 disclose management mental models underlying main business growth processes and related policies aimed to foster UT products sales. Such balancing feedback loops permit the company to apply controls to achieve an upward target growth objective (see figure 6).

It is worth remarking that the management also implicitly recognised two other positive phenomena that may contribute to foster a company growth over time. In particular, the new resources derived from higher revenues could be devoted to increase both marketing and retail chain investments. As a consequence sales quantities would grow up and new resources could be spent to fuel business development.

Figure. 6. Comparison between expected and actual behaviours of "Unitary Technology" product sales quantities

By comparing expected and actual UT products sales quantities, it emerges a noteworthy gap that underlines the limits of management mental models in explaining the outcomes of business growth policies (see figure 6).

What are the main causes underlying such a gap?

What are the main limits to growth unperceived by the management?

In order to investigate main causes of discrepancies between desired and actual company product sales quantities, the authors also decided to interview some key actors of the company retail chain.

By interviewing personnel working in a sample of Jeppy's Retail stores, we detected three main key aspects that act on retailers investments effectiveness (see figure 7).

The first limit to growth of company UT products sales perceived by retailers' employees referred to potential customers' cultural attitude towards UT concept. The main difficulty in understanding such concept results from the common habit to perceive technological products as "closed worlds", while the UT concept is based on the innovative idea that is possible to create endless applications that are able to communicate among them through a common technology device. Such a phenomenon very often pushed retail stores's employees to promote the so called "Trojan horse" products as they are easy to sell. On the contrary, efforts spent in promoting UT products very often do not generate any sales and, hence, de-motivate personnel who adopt a reactive approach to reach their personal sales target value [2].

[2] A similar phenomenon was detected by Morecroft [1984], who identified a natural hierarchy in the allocation of time of salespeople. "the highest priority goes to reactive sales efforts, …. The rest of the time is split between proactive sales effort, … and general market maintenance. Second highest priority goes to proactive effort, unless the product sales objective has been completely satisfied."

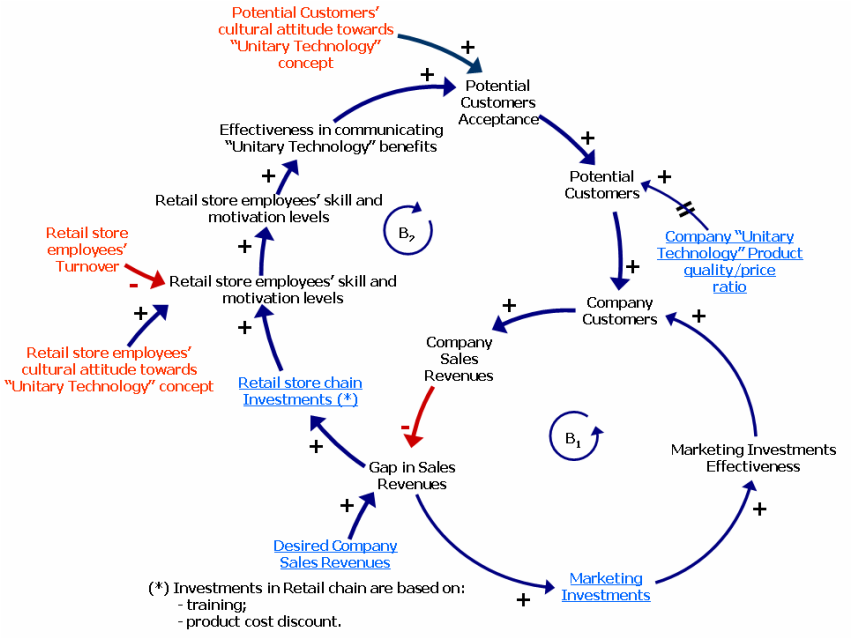

Figure. 7. Main unperceived variables preventing company investments effects

The second limit was related to a low retail stores' employees cultural attitude toward UT concept. In fact, by discussing with front-office employees, it was possible to note their difficulties in effectively communicate to potential customers the benefits of UT products. This was perceived by us also as a consequence of employees' low motivation due to a lack of effective and continuous focused training activities provided by Jeppy. On this concern, even though there was not a full managerial consensus, most of the people involved in the meetings we run in the company were not surprised at all of these findings.

Finally, difficulties in promoting UT products were also amplified by the high turnover recorded in stores' personnel. This can be considered another limit preventing retail chain investments effectiveness through training programs.

DESIGNING POLICIES TO COPE WITH LIMITS TO GROWTH

Based on the causal loop analysis shown in the previous pages, we suggested the management to act on the above commented limits to growth (retailers employees' cultural attitude towards UT concept; retailers employees' turnover; potential customers' cultural attitude towards UT concept) by introducing on a side, customised retailers personnel recruitment, advanced training and goal setting policies, and on the other side new investments in developing potential customers' acceptance of the UT concept.

As it has been shown in the previous section, the theoretical framework of the SURM proposed in literature, personnel recruitment, advanced training and goal setting policies are conceived among the main practices in this field [Pfeffer 1998; Hiltrop 1999].

In particular, in the Jeppy case, an appropriate recruitment policy would have allowed the company to identify and hire the best people for the job to be accomplished. In fact, as remarked in literature [Guion 1997], a properly developed assessment tool may provide organisations a way to successfully select sales people and concerned customer service representatives. We suggested the management to introduce a selective retailer' personnel recruitment policy aimed to verify in advance human resources potentiality and their initial level of skills and competences to effectively promote UT products.

An advanced training activity has been also suggested, as it would have allowed the company to effectively communicate to retailers' employees not only organisation's mission, strategies, values and so on, but also practical ways to better transfer to potential customers UT products benefits. This practice is also likely to stimulate and motivate employees, as they often recognise training as a real appreciated form of organizational benefits [Hiltrop, 1999]. Furthermore, we suggested the management to periodically run workshops in the retail stores, demonstrations sessions of the use of UT products.

It has been also recommended to the company management to adopt a goal setting policy. Such practice is conceived in literature one of the most powerful motivational approach [Locke and Latham, 2002]. It assumes that when difficult, specific and clear goals are assigned to workers, the latter increase personal effort to improve task performance [Locke and Latham, 2002]. To be effective a goal setting policy has to embody a feedback control mechanism aimed to verify and support employees in achieving goals set. In fact, employees needed feedback about their progress in relation to the achievement of their own goals. If they do not know how they are doing, it is very difficult for them to adjust the level or direction of their efforts to match what the goals require [Bandura and Cervone 1983; Matsui, at al. Inoshita 1983]. In particular, in the analysed case-study, a goal setting policy was necessary to aim at increasing retailers' personnel motivation, to provide employees well defined and stimulating targets. As a consequence, personnel could be able to make some clear priorities and effectively managing trade-offs (for instance, employees' efforts spent to promote UT products may absorb higher time associated with lower results if compared to employees' efforts spent to promote Non UT products). Additionally, goal setting is also likely to reduce retailers' personnel turnover and as consequence it could allow retailers – all conditions being equal – to maintain personnel with a higher level of competences for a longer period of time. Furthermore, it has been also demonstrated that goal setting policy can positively influence commitment, which in turn is likely to foster employees' learning processes [Seijts and Latham, 2001].

Finally, in order to diffuse the concept and related benefits of UT products among potential customers and to increase their acceptance, it is necessary that such investments have to be supported periodically by public events, conferences and targeted news in monthly reviews.

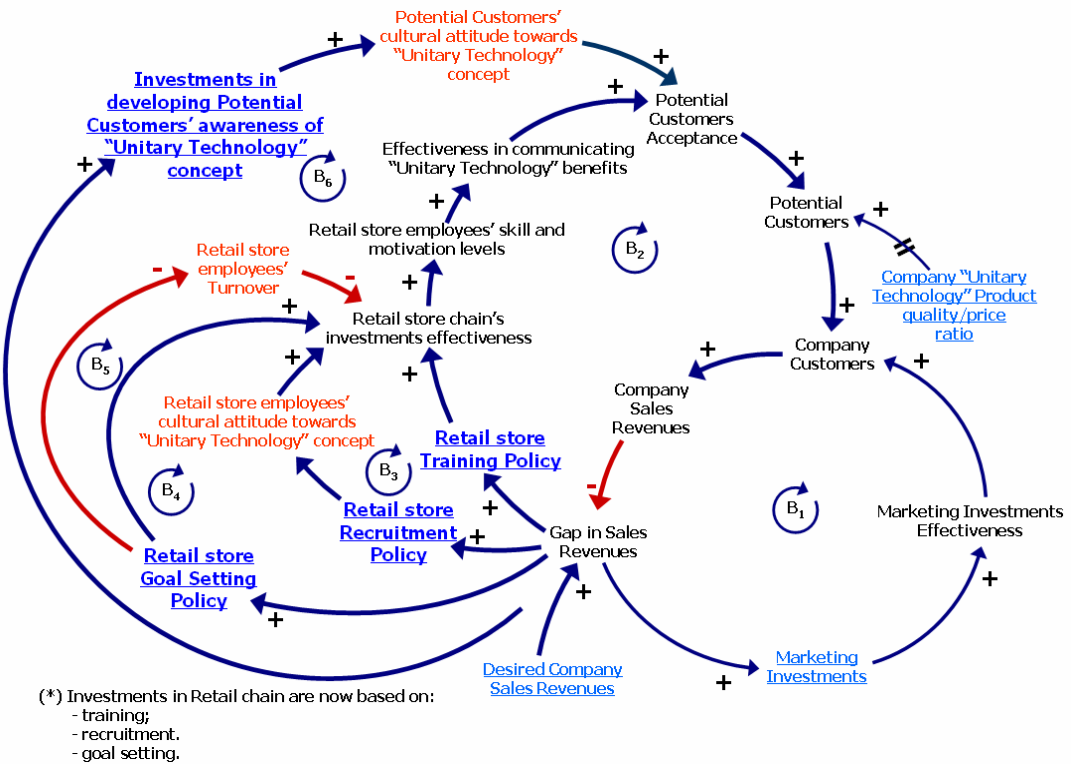

Figure 8. Suggested policies to overcome company limits to growth

To achieve the company mission and the desired level of sales of UT products, we suggested the company management to explode retail chain's investments in a coherent set of policies that have not to be conceived as alternative, but complementary. In fact, during meetings with the management aimed to explore and validate alternative strategies, we demonstrated them through the use of an insight system dynamics model that decisions aimed to implement, for instance, a goal setting policy without proper personnel recruitment, advanced training activities are likely to fail in reaching company desired goals.

Before building the quantitative simulation model, we shared with the management the main feedback structure reported in figure 8. In particular, it embodies the cause-and-effect relationships generated by the suggested policies aimed to overcome business limits to growth.

All the suggested policies are able to foster both the "Effectiveness in communicating Unitary Technology benefits" and "Potential Customers' cultural attitude towards "Unitary Technology" concept". As a consequence, on a side retail stores' personnel could be able to effectively communicate UT products advantages, and on the other side an increase in potential customers acceptance could be likely to give up the number of potential customers. This could contribute to increase both the number of company customers that will buy UT products and company sales revenues. As a result of this phenomenon, the gap between desired and actual company sales revenues could decrease.

Figure 8 portrays the feedback loops B3, B4, B5 (human resources management practices) and B6 (external investments) described above. According to figure 8 all suggested policies give raise to balancing loops that aim to push the actual value of company sales revenues towards the desired one. Event though the analysis also disclosed positive feedback loops (for instance, the worth-of-mouth phenomenon that could take place when the number of customers who adopted UT products becomes relevant and could contribute to increase the number of UT potential customers), such relationships have not been included in figure 8 and discussed due to their low relevance to the investigated phenomena.

AN ANALYSIS OF THE MAIN STOCK AND FLOW STRUCTURE OF THE SYSTEM DYNAMICS MODEL

Based on the above commented feedback structure, the authors built an insight system dynamics model. Such model has been used to both capture company key-variables past behaviours (in particular, company products sales quantities) and explore the effectiveness over time of the suggested strategy (retail stores' employees' recruitment, advanced training and goal setting policies, and investments in developing potential customers' awareness of UT concept). The system dynamics model covers three main sub-systems:

- Company Customers related to "Trojan horses" and "UT" products sales;
- Company retail store;
- Human Resources Management.

Due to the peculiarity of the third sub-system stock and flow structure, it will be discussed in the next pages [3].

The stock and flow structure depicted in figure 9 has been adapted on the basis of the Skill Inventory Model proposed by Winch [2001]. In particular, it is possible to observe a "physical" structure related to "retail stores employees" and two main co-flows structures associated with retail stores employees' skill level and retailers employees' motivation level.

In particular, the company aims to maintain a number of retailers' employees proportionally to the number of stores. Retailers employees' turnover is likely to affect the retailers recruitment policy, as it drains the number of employees.

Retailers employees' skill level may decrease due to employees' skill obsolescence rate and leaving rate. Such a stock may increase not only through new recruits associated with a higher skill level (due to a selective recruitment policy), but also by continuous training programmes provided to employees.

Figure 9 also captures the main relationships affecting retailers employees' motivation level. In particular, such stock variable may decrease due to both a normal employees' motivation outflow and a leaving rate. Retailers

[3] Model equations are available from authors.

employees' motivation level may grow up through customised recruitment and goal setting policies. It is worth remarking that goal setting policy is likely to indirectly affect retailers employees' skill and motivation levels as it reduces employees' turnover.

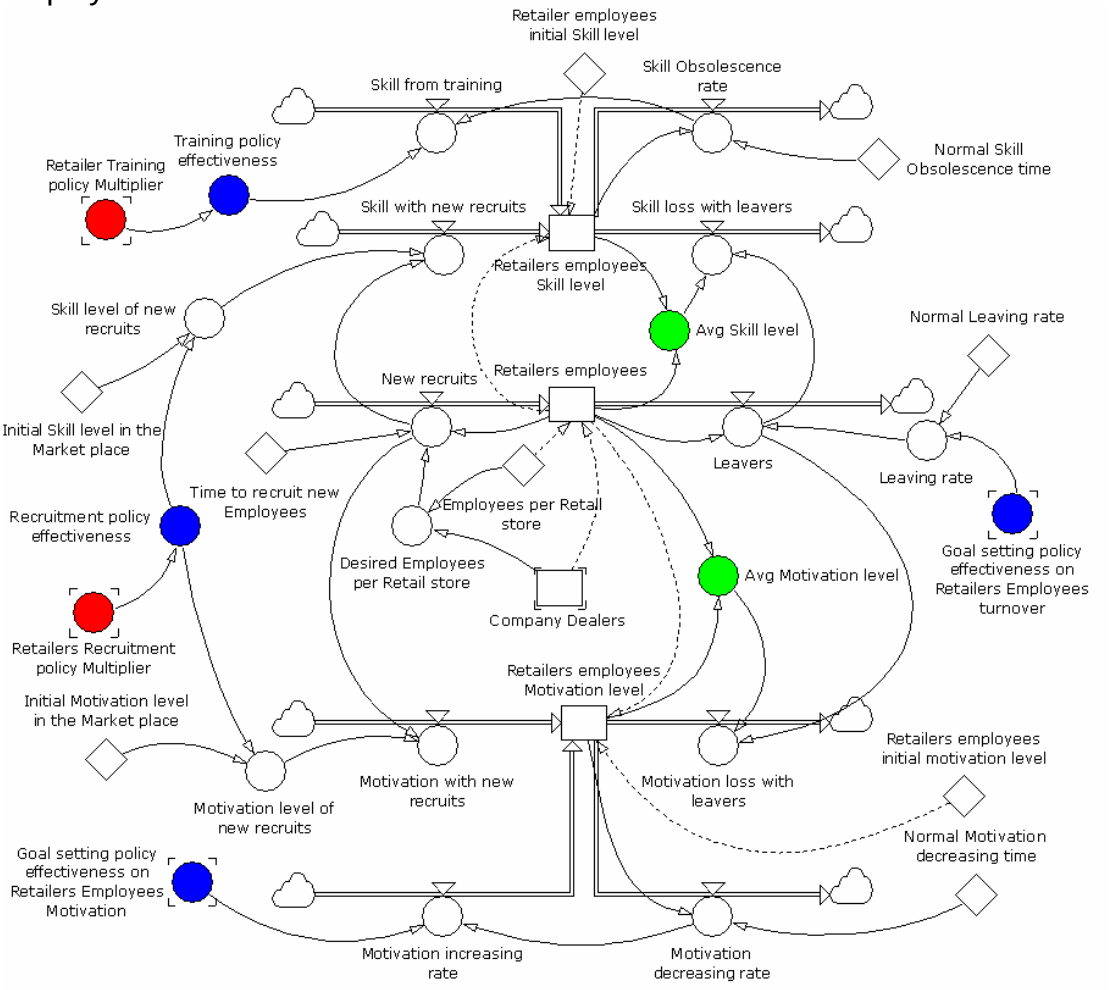

Figure. 9. Stock and flow structure related to Human Resources Management sub-system

SCENARIO ANALYSIS

In order to support the management in exploring and testing the effectiveness of our suggested policies to overcome business limits to growth, the system dynamics simulation model has been used to analyse different scenarios.

In particular, retail stores' employees recruitment, advanced training and goal setting polices and investments in developing potential customers' awareness of UT concept have been hypothesised according to three possible options: low, medium and high.

Figure 10 shows company key-variables behaviours related to the actual policies undertaken by the management. The simulation covers 10 years. It starts from 2001 and ends in 2010. In order to replicate the behaviours of past

business variables, the model has been initialised with company data provided by the management [4].

As it is possible to observe from figure 10, such decisions may lead to a decreasing pattern in retailers employees' skill and motivation levels [5], which affect the effectiveness in communicating UT benefits to potential retailers' visitors. As a consequence, UT customers and related company sales dramatically collapse. Such phenomenon is also due to a lack of investments aimed to foster potential customers' culture attitude towards UT products that causes a fall down in potential customers' acceptance.

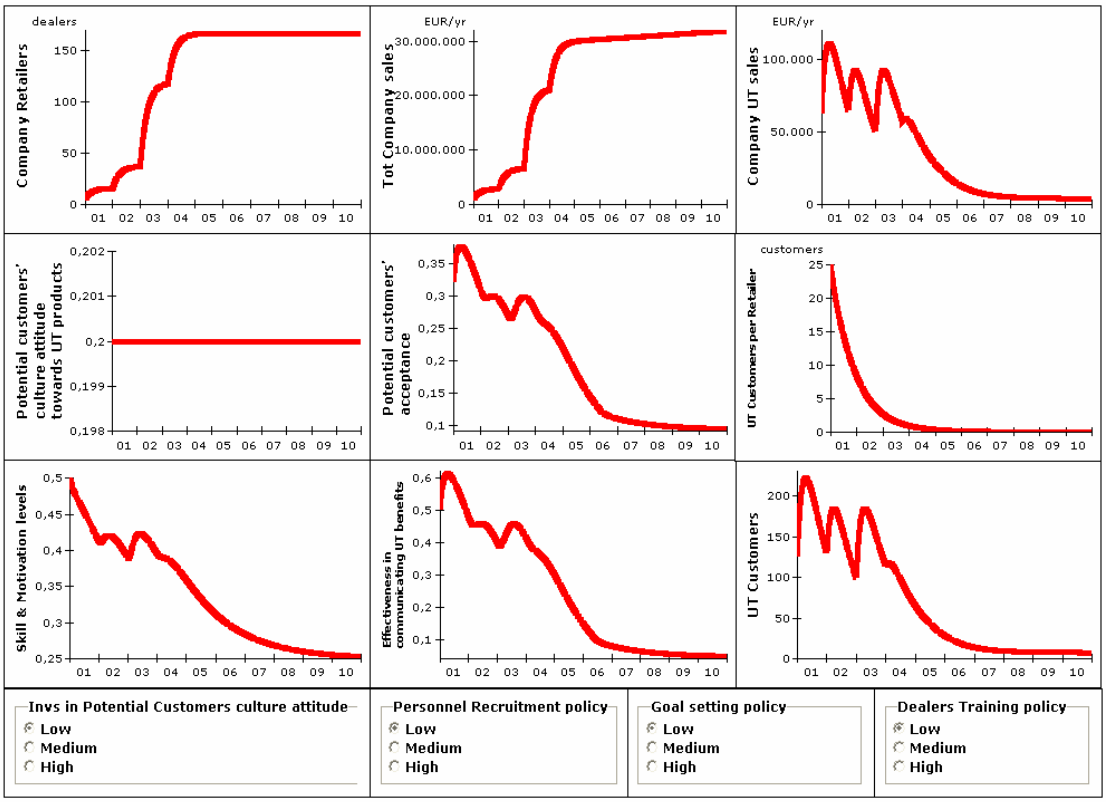

Figure. 10. Main business variables dynamics (*base run)*

It is worth remarking that management policies implemented in the initial four years (from 2001 to 2004) aimed mainly to increase the number of retailers. As figure 10 shows, at the end of 2004, the company could count on 166 retail stores. Such a growth is the main driver of the initial company UT sales. In fact, as the number of stores remains unchanged, from 2005 it is possible to remark an acceleration in the decreasing rate of company UT products sales. Such phenomenon can be also observed in the dynamics of UT products' customers variable.

The analysis of company key-variables dynamics generated by the SD model provided a satisfactory fit with company past results. Furthermore, as

[4] In particular, the number of retail stores in the first 4 years of the simulation run has been generated by an external input.

[5] Such variables are modelled as indexes (min. 0; max 1).

the management was also confident on the key-variables behaviours generated by the SD model, it has been used to assess the effectiveness of alternative scenarios; two of them will be here commented. In these two scenarios, the suggested policies have been implemented from year 2005 to 2010.

The first scenario (reference) is based on high investments aimed to foster potential customers' culture attitude towards UT product and unchanged policies on retailers' human resource management practices.

The second scenario (current) is based not only on decisions oriented to increase potential customers' culture attitude towards UT concept, but also on high investments in customised retailers' employees recruitment, training and goal setting policies.

Figure 11 portrays both reference and current runs. In particular, it is worth remarking that company decisions aimed to only foster potential customers' culture attitude towards UT products are not sufficient to boost the number of UT customers and sales revenues. This phenomenon is strongly related to the low level of retailers employees' effectiveness in communicating UT benefits. In fact, such a key-variables is affected by retailers employees' skill and motivation levels, that in this first scenario does not change.

On the contrary, the current run is likely to generate the desired effects on both external and internal company systems. In fact, such decisions contribute to increase, on a side potential customers' culture attitude towards UT benefits, and on the other side retailers employees' skill and motivation levels. The higher employees' skill and motivation levels are, the greater employees' effectiveness in communicating UT benefits will be. This fosters a further increase in the potential customers' acceptance, which in turn affects the number of potential customers that are more prone to buy UT products leading to an increase in Company UT customers and sales revenues. Finally, an increase in UT sales revenues allows the company to meet the desired level of revenues (see figure 6).

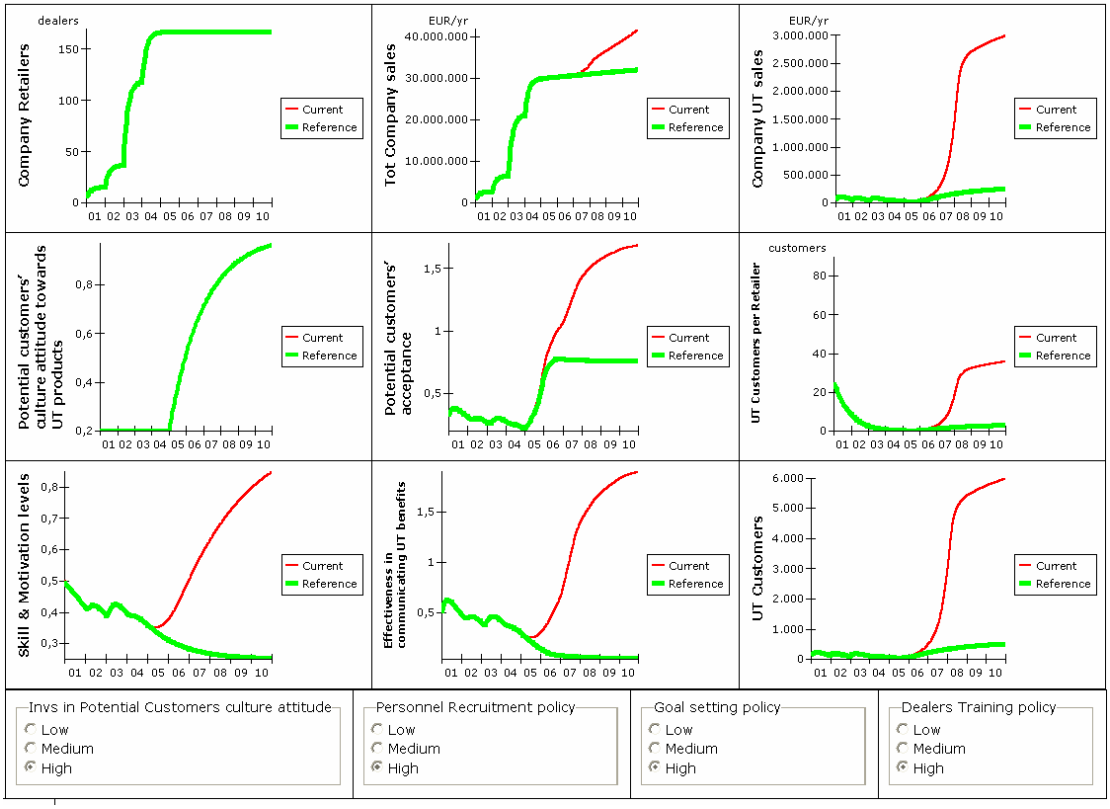

Figure. 11. Current and reference scenarios

V. CONCLUSIONS AND FURTHER RESEARCH

This paper has demonstrated that in order to successfully design long term policies aimed to foster manufacturers-retailers relationships, manufacturers must give up decisions exclusively oriented to generate immediate benefits [Liker and Choi 2004]. In fact, such policies may disclose future company failure.

The use of the System Dynamics methodology shown its effectiveness in exploring and understanding the complex and dynamic phenomenon related to the manufacturer and retail chain relationship. In particular, such an approach allowed the management of the company to systemically design and assess policies based on human resource management practices (recruitment, training and goal setting policies) and external efforts aimed to increase potential customers awareness of company product benefits. It is worth remarking that the above suggested human resources practices may represent an innovative vehicle for the development of studies aimed to adopt a systemic HRM approach, as suggested by Guest [1997].

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