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An Uncontrolled Item of Enterprise ICT Innovation: the High-Level Digital Divide

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Abstract

The globalization phenomenon strongly stresses western countries' economies. Especially in industrial districts, companies are reacting with continuous innovations in product and process, based mainly on the introduction of ICT. This continuous organizational change process forces employees to keep in touch with the working environment in an endless learning process. Therefore, the introduction of new ICT seems to bring a cultural development for individuals. Is this always true? Our conviction is that this strongly ICT based evolution generates a new form of digital-divide, a "High-Level Digital Divide" (HLDD): an increasing cultural distance between people able to follow the enterprise change and people penalized by a lower cultural growth ability. An uncontrolled growth of HLDD may limit the evolution capacity of the enterprise and drop out people from labor market.
Keywords: ICT Management, ICT complexity, Digital Divide, individual growth ability, innovation, organizational culture.

1. Introduction

Industrial districts are reference models for the development of new economies. They are homogeneous local productive systems characterized by a high concentration of industrial enterprises, mainly of a small or medium dimension, with a high productive specialization. The districts are considered as the supporting structure of a great deal of the new Italian and European economy. District's flexibility is compared with the rigidity of the big enterprise, which is regarded as an organization unable to rapidly answer to the endless change of the market.

Globalization and the competition of emerging nations stresses this model, as described in [9]; Asian South-Eastern economies are characterized by levels of labor cost and social protection far lower than European countries.

The districts respond to this new challenge with continuous innovations in product and process, based mainly on the introduction of new technologies and ICT: Web as a communication and knowledge infrastructure, new scheduling processes, tools to keep strong relationships among cooperating enterprises even far from their physical location, advanced data and markets analysis tools, industry automation… ICT is considered the privileged way to give more and more flexibility to the organization's body, for instance in [12], [14]. Actually, during the last decade we have seen a constant acceleration in the use of ICT in working environments, even in the smallest ones. This acceleration imposes a continuous tuning of the organization and requires the singles to follow organizational changes in an endless learning process.

In several cases, mainly in companies starting from a low level of organizational complexity, the research for a better organization is reduced to the simple introduction of new

technologies, assuming that everyone will follow the new processes based on ICT and that people's culture will grow just by using advanced tools. Even if almost every one is acquainted to the use of information technology in daily activities, our experience suggests that the strong ICT impact generates a new form of digital-divide, a "High-Level Digital Divide" (HLDD): an increasing cultural distance between members of same population, between people using daily basic information technology, but with different adaptability to ICT evolution and increasing complexity, in terms of comprehension and learning speediness.

In western countries almost everyone have a quite high cultural level, but someone is unable to follow the sudden changes and innovations with the speed required by market evolution.

Management faces market challenges by designing strong innovative processes, but it often it neglects the impact they have over the workers and the following digital-divide they feed. This is a slowdown factor for the innovation process, which can eventually be incomplete, as its effectiveness is dramatically influenced by individual response, as reported by [16], [17]; it can cause social problems, as it drops out from labor market those people whose culture gap becomes too large for the enterprise. This may produce, in highly protected social environments as Europe, global after effects roughly controlled.

To better focalize our ideas, we analyzed real cases of reorganization in industries of the chair district in the North-East of Italy. All the companies evaluated made in the last few years a series of strong organizational changes with high investment in ICT. The reorganization started to follow the chair market, which grew very mobile after the emergence of a number of competitors from the Far East. Each of the analyzed companies changed both processes and technological tools, and supported the change with training sessions. The objective of training sessions was to fill the cultural gap between the pre-existing organization and the new one; the items covered were:

- new tools general use, new processes and new interfaces for people involved in operative tasks,
- principles of work organization and data-flow treatment for high and low level managers.

In all cases, only part of expected outcome was reached, with local variations depending on departments.

To understand the difficulties of the singles in the reorganization process, we interviewed people involved in the transition, asking their opinion about

- the necessity and the consistence of the modifications
- the changes both in terms of work organization and quality of life
- the support received by the company during the reorganization
- the influence of the introduction of new ICT on the entire process.

Our inquiry found a proof of the emerging new form of Digital Divide, people's difficulty to evolve with the speediness required by new organization, and tried to identify the causes of it: what does it depend on? Does it depend on the reorganization process itself (i.e. lack of training, lack of a common vision, scarce visibility of the targets, wrong innovation processes) or on other factors more related to the singles (i.e. a low initial cultural level, advanced age, bad relation with technology, a too high complexity level of the new processes based on ICT), or even on other factors not considered in the training design?

2. Environment of Analysis

The cases we analyzed are furniture manufacturer industries (mainly chairs, tables and other subsidiary furniture). The companies are part of a particular social and economical environment, the chair district of the North East of Italy. The district economical organization is widely considered an optimal model for flexibility and ability to react quickly to the changes in the economical panorama. The companies we evaluated are the most important in the district, and their flexibility is not due to the lack of a defined organization, but to the economical relations existing in the district. The link between ICT introduction and people's

cultural growth capacity, between organizational change and individual reaction, should be crucial and very visible here.

2.1. Industrial districts

Industrial districts are described in [13] as "local homogeneous production systems, with a high concentration of companies, mainly of small and medium dimension, and a high productive specialization".

In this particular shape of spatial organization, production process is realized on the basis of work partitioning and on productive relationship among the companies linked to a supply chain. Therefore, the specialization of the district on a given product implies the presence, in the districts, of a pool of companies specialized in a given production phase. District companies are not completely autonomous entities, but constitute a network of productive relations. Traditionally, vertical cooperation agreements lie side by side with a strong horizontal competition in the different stages of the chain. The network assumes a fundamental importance as it guarantees the flexibility of the connected companies: a peak of the demand in a company "A" can be shared among other connected companies, and "A" can respond to it in time without any structural investment.

As detailed by [10], the chair district concentrates 925 companies and produces the 60% of the European production of chairs and 30% of the world production of chairs. The companies in the district tend to be small: 64% have less then 10 employees, 25% have a number of employees between 10 and 19 and only 10% have a number of employees between 10 and 50. Companies with more than 50 employees are a small minority, around 1% of the companies of the district.

3. Description of the Case Study

The evaluated companies have a similar history: initially they were family business, with a production limited to wood chairs; later, mainly since the eighties, the companies enlarged both product set and organization, spreading activities on different plants.

By economical dimensions and people employed (each company has more than 100 employees), they are in the set of the main companies of the district and are chief of a wide network of cooperating organizations.

Reorganization process was principally suggested, around year 2000, by the necessity to change reference market from wholesale to detail sales. The progressive growth of Eastern competitors able to product at lower costs eroded the profitability of wholesale market; therefore the companies started a reorganization and adopted a model in which sales of small quantities of high quality product to a large number of customers are prevalent.

This change provoked a lot of side effects, such as the numerical explosion of the customers and of the sales. This produced the growth of work related to

- relations with the customers
- payments and quarrels management
- treatment of minimum production lots
- composition of fragmented expedition charges

The entire organizational structure had to change. Market change, with the consequent numerical growth of actors and requirements to respond on, led to a sensible increment of management complexity of the companies and to the necessity of guarantee strongly the quality of the final product, quality no more filtered by resellers.

3.1. New organization

The reengineering of the organizational processes caused on one hand the growth of the labor force, on the other the extensive adoption of methodologies and tools more effective than the older, with a very wide use of ICT and process automation. Outsource agreements were signed to commit a portion of the production process to external companies; internal

movements of people provoked changes of roles or the strengthening of roles considered marginal in the past.

Great changes touched Sales departments: not only the number, but also the typology of the customers is different. In the past the relations with the few customers were almost continuous and based on a high level of trust. Now the customers often purchase sporadically. The treatment of credit is therefore changed, with the necessity of a more articulated control and the management of a number of reminder and litigation. E-mail and Web are now daily working tools. The control of the activity on the market is now more complex, and it is strategic the availability of sales analysis able to cross every possible descriptive parameter (territory, customer profile, product profile, sale attributes…).

Production departments were touched by reorganization as well, with the transition from the treatment of large lots on few production orders to small or very small lots on a huge number of orders. The problems raised from order's fragmentation imply the need of an accurate scheduling both of internal and external production flows, and of controlling continuously progresses and modifications of production plans. For example, in the past evaluation of material needs was a task mainly based on experience and intuition of production managers; now a similar task is performed using a new MRP (Material Requirement Planning) computerized function, which gives daily production orders considering the variation of the demand. For this purpose, new processes to monitor production progress and consumptives were introduced. Articulated processes for quality control were implemented, as product's quality is a critical factor in the direct market context.

In the new organization administrative control assumes a central role. The treatment of huge volumes with small economical margins requires an accurate cost and income control, the adoption of wide budgeting activities, not limited to sales, but extended to the economical control of the whole aspects of the company life. New sophisticated ICT instruments, based on multidimensional data representation and data mining, have been adopted to adequately support company's control and data analysis processes.

3.2. New computerized systems

Due to the numerical growth of the treated entities (customers, products, suppliers, orders, expeditions, lots...), a necessary step was the implementation via ICT of most of the company's processes: a transition from an organizational model in which information system was used mainly to support administrative and fiscal tasks to a model in which information system supports and, above all, drives almost every process; the processes are therefore defined, controlled and integrated.

The companies decided to substitute the business information system, adopting new ICT procedures. By the side of the new ERP (Enterprise Resource Planning) system, they developed new tools: data warehouse technologies to support administrative control and market analysis, automated data field acquisition, ...

The process of implementation of the new ERP system was long and with several difficult steps; large quantities of resources were invested to keep confidence, in a relative little time, with the new procedures and to tune existing processes to fit the model proposed by the new information system. Last, but not least, each ERP carries its own organizational models, which should be used to define the new company's processes. This wide, new automation affected management levels too: inquiry instruments based on a data warehouse now support decisional processes.

3.3. Cultural Consequences

The revision of processes and infrastructure had cultural consequences on individuals as well. People needed to use extensively and comprehend the new ICT functions, whose level of intrinsic complexity could be very high: the availability of advanced computing technologies gave the opportunity to implement processes with a complexity remarkably higher than the ones based only on less advanced technology, or not based on the use of ICT.

In addition, a considerable number of people didn't use or used sporadically computers for working tasks before the reorganization: they used ICT only for supporting operations, such as sending mails and browsing internet. After the introduction of the new processes, they had to learn how to work interacting continuously with computers, and they had to adapt their working activities to ERP technology.

People were asked to adhere to the new working processes, which often required a radical change in their role inside the organization. For instance, the introduction of new procedures for material needs calculation could resize the centrality of the experience and intuition of the production manager; the new internal accounting procedures could be seen as persecutory controls or ties to individual activity. Workers had to follow defined processes, with less freedom of action at the individual level. Moreover, control processes required actions which could be considered as mere bureaucracy, useless activity in the production tasks.

Finally, people had to deal with new interlocutors, both internals, such as new colleagues, and external, such as customers, suppliers, partners.

4. Reorganization

4.1. Expected results

The implicit targets, starting the reorganization process, were

- that the new organizational model, with clear and well defined processes, was adopted without great difficulties or heavy oppositions by every company's department;
- that the new procedures, based on ICT, were substantially accepted and clearly understood;
- that the new working model, extensively supported by ICT, could be learnt in an adequate time interval from the people involved;
- that upper and middle management would initiate a beneficial cycle that would promote innovation, optimization of processes, and development of new applications for the ICT tools.

The expectations were based on the idea that employees would have followed naturally company's cultural growth, activating an individual maturation step supported by training.

4.2. Actions

To support change, all the companies analyzed made high investment to acquire operative aids:

- new ERP system, completed by customized procedures;
- data warehousing system, designed to support the strategic control of the company;
- new web site, communication environment for the customers, with catalogues, technical information and access to the customer care service;
- tools for automatic field data detection, introduced to enhance the correctness, the speediness and the reliability of the advancing procedures, and to make them less onerous for the operators.

People directly interested by changes were trained. Training had a double target, general and practical, with the aim to fill the gap between the previous model and the new one. Specific sessions on the new working instruments were held by the providers of the information systems. More general sessions on the working models introduced, were held by the support of the local industry association and by specific consultants. Official training sessions on the reorganization itself (organization structure, market placement of the company, boost for change, mission…) were considered unnecessary: the participation of the managers at the strategic meetings for the new organization was considered sufficient.

4.3. Actual results

In spite of all the efforts, the activation of new business processes was partial and not homogeneous: some departments widely adhered to the new organizational vision, while other ones showed higher resistance, with employees still following the old, inefficient processes. Furthermore, ERPs are actually widely underutilized, used to manage daily activity, but rarely autonomously explored for the research of new paths of operative support. In departments where the re-organization had more success, people seem to be more interested both in new processes and in new technological tools.

Our conclusion is that the reorganization generated a new gap, not strictly depending on the classical digital divide (the availability of technology). This new gap is of a different level, mainly depending on the capacity to comprehend the new model developed by ICTs at the velocity required by innovation. It is a new kind of cultural digital divide, HLDD, between people able to follow the reorganization process and people using ICT but left at the borders for they could not follow company's growth. This gap strictly limits the development and change speediness of companies.

5. The initial hypotheses of the survey

Trying to find out the possible causes for the rising of HLDD, we started by making some hypotheses considering the point of view of the single person touched by changes:

1. Lack of basic knowledge: his cultural level prevents an adequate use of new ICTs complex procedures, and the lack was not filled during training sessions, according to [4], [6], [8].
2. Lack of support: he does not see the support of the company in terms of training, time and acknowledgment and feels the reorganization as a weight all on his shoulders, as underlined by [3], [5].
3. Lack of sense: the individual does not see the need of reorganization, maybe because he can see nothing but his small action environment; or he did not take part in the design of the processes and he has been forced to follow processes he does not understand, as suggested by [1], [3].
4. Affection to the old working modality: maybe he defined it, or it represents his consuetude, according to [2].
5. Lack of interest, as proposed by [20]: he is not involved in the changes for he has a work contract with a small perspective in the medium-long term (for instance, a temporary contract) or for he is close to retirement.
6. Emotional difficulties, such as repulsion for technology or for rules, or other personal situations, as hypothesized by [7].

6. The survey methodology

Starting from the previous hypotheses, we organized a questionnaire: the purpose was to collect a profile of the workers involved in the reorganization, to evaluate people involvement in the change process, to assess the consequences of reorganization on the individual level, and to reflect on individual difficulties and criticism. The questionnaire is available in Appendix 1.

We submitted the questionnaire to the four leader companies in the chair district, who recently changed their organization model by using the potentialities of their new information system. People involved in the inquiry are the ones that, after the redefinition of the working processes, had to modify their working modality, to interact with different people, to work with new instruments or in a new way with known tools. We distributed near one hundred questionnaires, and collected 58 complete forms, on which we based our analysis.

7. Results of the survey

We profiled them by role covered, department, age, contract typology, level of seniority, scholarship (Figure 1).

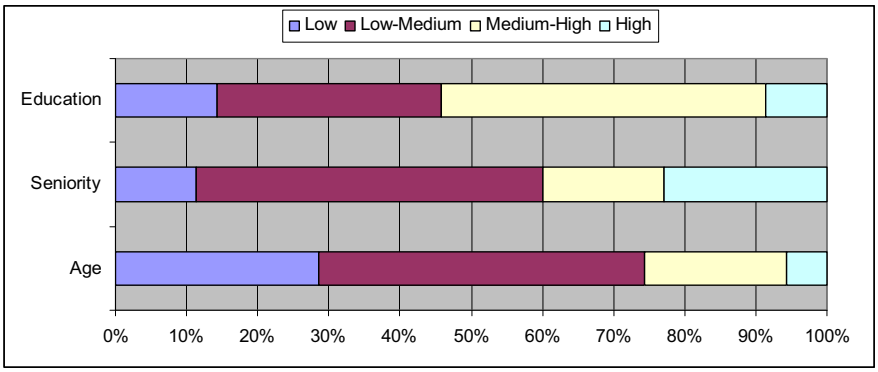

Figure 1. Worker's profile

Data collected present, at a first sight, a substantially different picture from the one given by the property and the organizational consultants. These last ones reported that the results and the speediness of change were not proportional to the investments and the effort made by the organization. On the other hand, the perception of the interviewed people is that a reorganization had to be made (almost everyone agrees with the statement), and it was substantially made (for 75% of the operatives and 56% of the managers). The reorganization was a noticeable change carried with adequate aids, and it provoked a sensible enhancement both in work organization and in quality of life inside the company (Table 1).

	Before reorganization		*After reorganization*		*% Variation on average*
	Average	*Std.Dev.*	*Average*	*Std.Dev.*	
Procedural organization	3.8	1.6	5.5	1.9	**+45%**
Task clearness	5.2	2.4	6.7	2.2	**+29%**
Department quality of life	6.0	2.2	7.1	1.9	**+18%**
Communication with other departments	4.3	1.9	5.7	2.3	**+33%**

Table 1. Perception of job enhancement (Low to High, 1-10 scale)

The apparent divergence of the sights is probably due to the fact that property measures the entity of the change with respect to the targets, while employees measure it with respect to the previous organizational model. The cause for this different attention could be the fact that employees were proposed changes, training, new tools, without giving them a wider panorama of the expected results. This hypothesis is supported by the fact that no training or information session on the reorganization itself was held.

The high expectations could be suggested also by an erroneous evaluation of people's ability to follow the reorganization process, or by an optimistic estimation of people's learning processes velocity.

Besides this first sight, we analyzed more deeply inquiry results, evaluating our initial hypotheses on the individual factors conditioning organizational change process.

The profile of interviewed suggests that factors such as age, scarcely protecting contracts (hypothesis 5) or prejudgments against technology (hypothesis 6) are not relevant to influence the process: employees are roughly young (75% below 40), almost everyone has an unlimited contract and everyone uses PC, for working purposes or at home (Figure 2).

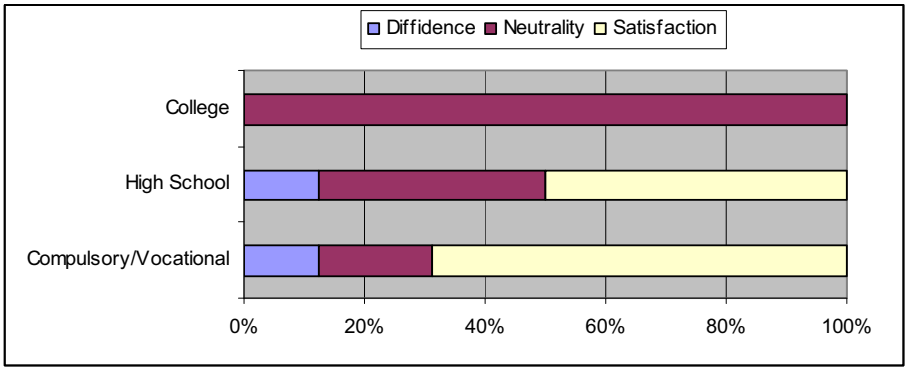

Figure 2. Attitude in IT usage by education level

We find instead evidence of the hypothesis that a lack of basic culture (hypothesis 1) could affect the change process (Figure 3): 45% of the interviewed does not reach the bachelor degree, only 9% has an academic degree. This weakness is not evident to the management, as also the basic culture of people employed as manager is usually quite low: among managers, the 34% does not reach the bachelor degree. Moreover, the lack of basic culture is not fixable in the small-medium term, or with standardized training sessions.

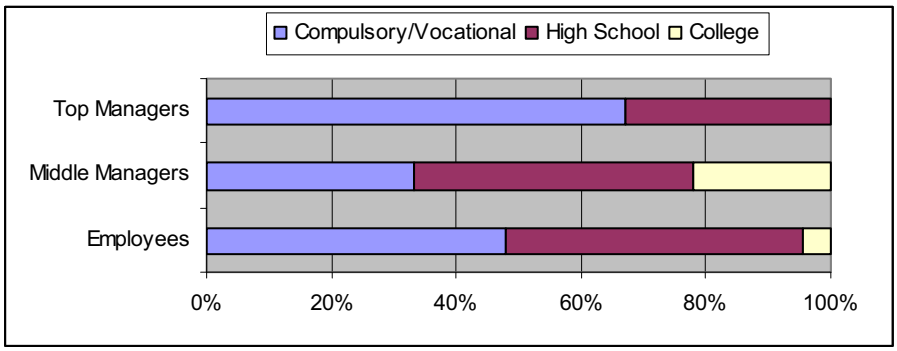

Figure 3. Education level by working position

The hypothesis is enforced by the fact that the 50% of the under-trained people do not require more training, and that the highest level of satisfaction on training is among people with a low scholarship degree (85% of them are satisfied - Figure 4). It seems that people untrained or with a low cultural level do not perceive the existence of different organizational working models. The low cultural level is a critical factor that prevents a wide and acquainted use of new ICT based processes: for instance, the comprehension of a regenerative MRP procedure is possible, but concept acquisition requires long time. This fact could partially explain why Sales Departments, in almost all the companies analyzed, gave a better response to the initial expectation, in property's opinion: the processes implemented in them are less conceptually complex than the ones in other departments, such as Production and Accounting.

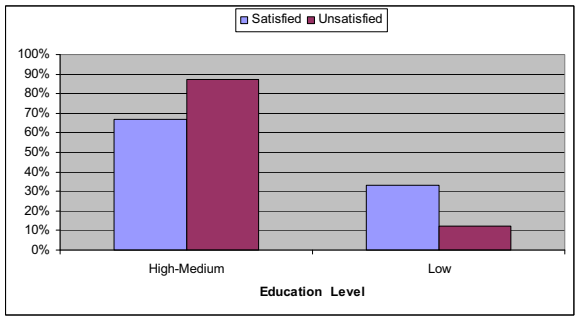

Figure 4. Training satisfaction of under-trained people

The hypothesis about participation and people's involvement in process design (hypothesis 3), finds a partial confirmation in data collected. The departments considered by the property less engaged in the reorganization reveal in effect a scarce attitude to participation by a certain lack of constructive critical spirit: they report a general dissatisfaction regarding hard to control matters, such as lack of time and excess of bureaucracy, but, for instance, they don't complain about new ICT tools (85% of people employed in those departments is happy with the new ICT tools and no one of the other 15% advance any explicit criticism about them). On the other hand, other departments considered widely adherent to the new organizational model and able to use ICT tools in a creative way, have a totally different attitude: 63% of the people employed in those sectors advance criticism about ICT tools, showing a high knowledge of the processes and giving constructive contributes, considering the companies' attitude in investing in technology.

Cultural inertia depends also on factors related to people's seniority and to their stronger affection to procedures interiorized during time (hypothesis 4): departments considered less engaged in the reorganization have a high seniority level of employees (employees with more than 5 years seniority are 54% in departments with a low level of engagement, 24% in departments with a high level of engagement - Figure 5). Change attitude is a key factor in the design of innovation projects: new departments, or departments with employees with a low seniority level, are often more ready to follow innovation.

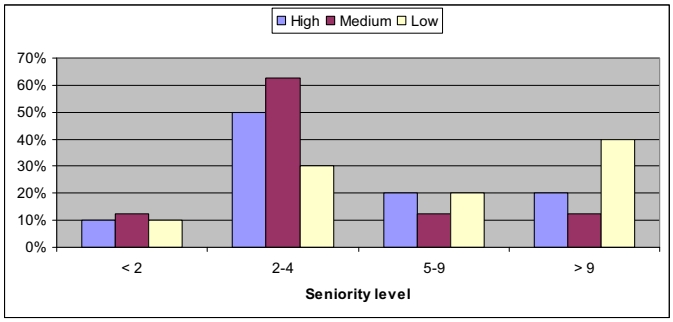

Figure 5. Engagement by seniority level

Training (hypothesis 2) seems to be a significant factor as well: most of the people are satisfied with the training they attended, but it is evident that satisfaction is higher when argument coverage is wider: all the people who attended both general and applicative courses declares that the training was adequate, while 31% of the people who attended only general or only practical courses declares that the training was not sufficient. People unsatisfied attended only one kind of course, or no course at all (Figure 6).

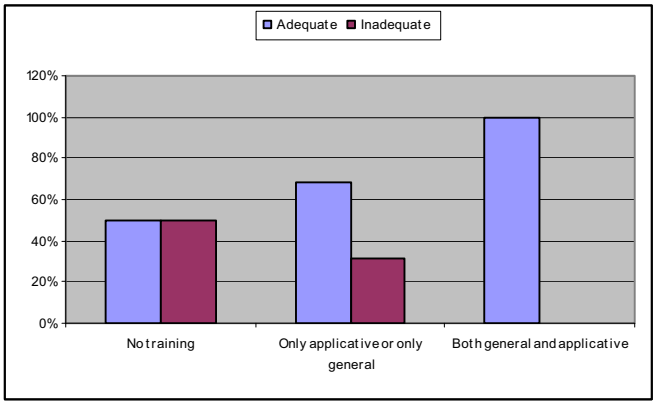

Figure 6. Training satisfaction

The requirements for new training sessions open a vision on the organizational culture of the companies: operatives tend to ask for training on specific matters, strictly related to their

work. This could be a sign of a low interest towards the entire organization; consequently the worker could see only his strictly local environment and could not access a wide vision of the company. The causes for this attitude could be personal ones, or could be inducted by the culture of the organization, which, despite the declared intentions, pushes employees to concentrate themselves on their "atomic" tasks.

Middle managers are the mostly solicited role in the new organization: they have heavy task to keep together the global needs of the company while operative workers are concentrated on their particular. These figures seem to be more conscious of the complexity and the layout of the organization than top managers. On the other side, operatives are suffering for the extra bureaucracy, signaled by 50% of them, that is part of new processes. But probably operatives' discomfort is due to the apparent uselessness and the lack of sense of the work ("why should I complete these accounting modules, of no utility for my work of production of a chair?"). ERP systems force operatives to defined processes, while in advance they followed not formalized processes.

8. Assessment of the results

The inquiry highlights the dependencies existing among three subjects:

- organization, with its structure and its culture;
- new technologies and the model they are built upon;
- individuals.

According to [16], individuals, with their culture (in the sense of knowledge) and attitude to follow organization change, may influence the capacity of a company to be flexible with respect to market requests in time and contents; moreover, their learning ability influences the way ICTs are used and developed. The results of our inquiry show that the starting cultural level influences the learning attitude and velocity of people involved in innovation processes (Figure 7).

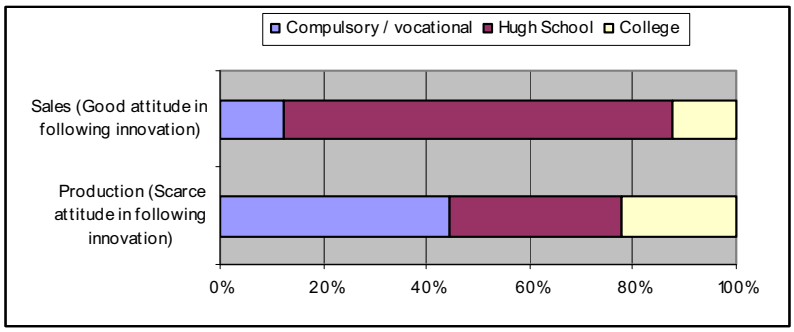

Figure 7. Department composition by education

Velocity may be more or less high, on the basis of the support actions (training, support, consultancy… see [18]) and to the readiness of the single, but the starting cultural level defines its upper bound. People learning velocity is related to their basic culture. In a given interval of time, the upper bound of a company's innovation and growth velocity (and capacity to follow the market changes) is principally determined by the characteristics of its employees.

Organizational culture comprises the "attitudes, experiences, beliefs and values, shared by people in a organization", as stated by [11]. It may have a strong influence on the result of the innovation processes: it may support or thwart individual learning effort, it may raise contradictions between the definition of processes and their effective application, it may promote the evolution of the use of technology, it may rise habits which become harder and harder to change as time increase (Figure 8). Organizational culture is a critical factor for the success of innovation processes, but its influence is often forgot or unseen.

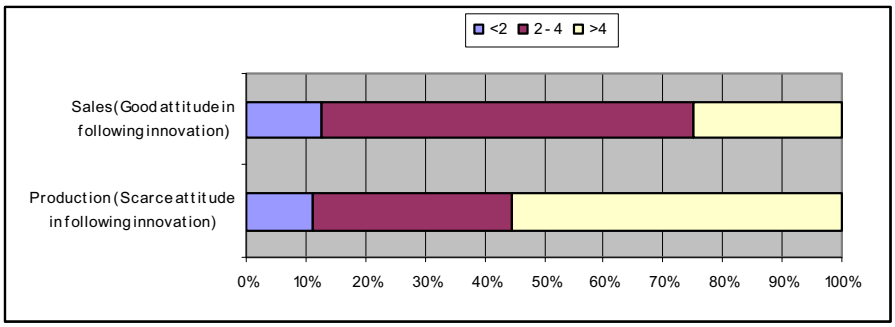

Figure 8. Department composition by seniority

ICTs influence both organization (suggesting and forcing the adoption of new growing complexity working models) and individuals (proposing, with its rapid evolution, new learning opportunities): as stated by [17] and [21], high comprehension of new models requires a strong intellectual commitment, and it permits to use correctly new technologies and to use fully their innovation potential. The isolated introduction of ICT innovation is not sufficient to promote individual cultural growth. On the contrary, a condition of HLDD may rise if innovation process is not adequately designed.

HLDD can be limited with a correct evaluation of three factors: individual growth ability, organizational culture and innovation target. Reorganization and innovation projects should proceed not only considering the targets of the new models, but they must proceed from the knowledge of both people characteristics and organization culture of the company.

The homogeneous growth of both organizational and individual cultures may be enhanced by the adoption of solutions that solicit people's commitment and capacity to learn at all levels in the changing organization, as proposed by [15]. The importance of learning and management of learning in organizations are well accepted concepts in large enterprises (see for instance [1] and [19]), but they are still a theoretical sentence in the smaller ones, or in those larger belonging to district networks.

Organizational culture of companies belonging to the chair district let them easily invest in technology, tools and consultants to optimize processes, often forgetting the individuality of the workers and underestimating the limits given by their learning velocity and change adaptability. Moreover, high managers and property often perceive that they are not required to adhere to new processes, and they do not need to learn any new methodology or technology.

9. Conclusion

It is very difficult to modify in the short term this organizational culture, as properties and high management, who could promote the change, often do not comprehend its necessity, or its complexity. Therefore other levers should be used, external and social.

District networks could be a useful resource, but they can only reflect organizational culture of the single companies, because they have not a real decisional centre, nor other inter-company organisms devoted to control and to promote comparison.

Awakening actions should therefore necessarily flow through other channels, such as scholastic, professional and academic education, or through other formative, informative and support actions promoted by local business associations. The aim of this actions should be to diminish or avoid completely HLDD, a critical factor which limits the evolution and the innovative growth of the companies of the districts.

APPENDIX 1: The Questionnaire (originally in Italian)

Individual profile

1) Age (years)
- ☐ Less than 20
- ☐ 20 to 29
- ☐ 30 to 39
- ☐ 40 to 49
- ☐ 50 and over

2) Gender
- ☐ F
- ☐ M

3) Educational level
- ☐ Compulsory school
- ☐ Vocational school
- ☐ Tech/Scientific high school
- ☐ Grammar high school
- ☐ College

4) Civil status
- ☐ Non married
- ☐ Married
- ☐ Divorced
- ☐ Widowed

5) Presence of sons
- ☐ Yes
- ☐ No

6) Seniority in this company (years)
- ☐ Less than 2
- ☐ 2 to 4
- ☐ 5 to 9
- ☐ 10 and over

7) Field
- ☐ Sales
- ☐ Purchases
- ☐ Administration
- ☐ Cost Control
- ☐ Design
- ☐ Production
- ☐ Logistics
- ☐ Test
- ☐ Quality Control
- ☐ Staff
- ☐ Other (Specify)

8) Placement
- ☐ Employee/factory worker
- ☐ Middle manager
- ☐ Top Manager

9) Typology of working contract
- ☐ Standard contract
- ☐ Time bounded contract
- ☐ Project working contract
- ☐ External contractor
- ☐ Other (Specify)

10) Use of technology
- ☐ I like using computer
- ☐ I habitually use computer
- ☐ I use computer, but only for working tasks
- ☐ I do not like using computer
- ☐ Other (Specify)

Previous situation

11) In your opinion, how was the working environment before reorganization?

Organization level

Low ☐ ☐ ☐ ☐ ☐ High

Task precision

Low ☐ ☐ ☐ ☐ ☐ High

Quality of life in your department

Low ☐ ☐ ☐ ☐ ☐ High

Effectiveness of inter-department communication

Low ☐ ☐ ☐ ☐ ☐ High

Change

12) In your opinion, work reorganization was necessary?

- ☐ Yes
- ☐ No

13) In your daily work the change was

- ☐ Complete
- ☐ Prominent, new processes or tools were introduced (computerized procedures, reports, barcode scanners, …)
- ☐ Partial, limited to the substitution of old tools
- ☐ Slight, limited to some little variation of existing processes
- ☐ None
- ☐ Other (Specify)

14) Your greatest difficulty in change was

- ☐ Interaction with new persons
- ☐ Following unclear new processes
- ☐ Using computer
- ☐ Not to be allowed to work as I like
- ☐ None
- ☐ There was no change
- ☐ Other (Specify)

15) How did you participated to the implementation of the new organization?

- ☐ I participated to the new processes design
- ☐ I followed the new processed, with a full comprehension of their meaning
- ☐ I followed the new processed, but without a full comprehension of their meaning
- ☐ I followed the new processed, but without understanding their meaning at all
- ☐ I didn't perceive any change
- ☐ Other (Specify)

16) Which tools did the company provide to help you to adopt the new working model? (you can choose more than one option)

- ☐ General training (need for change, general company operation model, basics of work in my field, …)
- ☐ Specific training (new processes, new tools, …)
- ☐ New suitable tools for my new tasks
- ☐ Time to understand the new working model
- ☐ Additional time to follow process bureaucracy
- ☐ It didn't help me at all
- ☐ Other (Specify)

17) Do you think your training was sufficient?
- ☐ Yes
- ☐ No

18) If "No", which topics did you want to deepen?
- ☐ General company operation model (market placement, need for change, general vision of organizational processes, ...)
- ☐ Basics on my field working models (i.e. MRP, cost control, sales planning, …)
- ☐ Specific training on my new tasks (new information flows, new tools, ..)
- ☐ Computer usage
- ☐ Other (Specify)

19) Do you think that the new tools are suitable?
- ☐ Yes
- ☐ No

20) If "No", why?
- ☐ They are incomplete
- ☐ They do not provide the information I need
- ☐ They are too complex
- ☐ They are not reliable
- ☐ They are slow
- ☐ Other (Specify)

21) Do you think you had sufficient time to understand the new working model?
- ☐ Yes
- ☐ No

22) In your opinion, the changes in this period were

Not condensed	☐	☐	☐	☐	☐	Too condensed in time
Not important	☐	☐	☐	☐	☐	Too important

23) In your opinion, how did you role change in time?

Got worse	☐	☐	☐	☐	☐	Got better

Current situation

24) How do you perceive now your working environment?

Organization level						
Low	☐	☐	☐	☐	☐	High
Task precision						
Low	☐	☐	☐	☐	☐	High
Quality of life in your department						
Low	☐	☐	☐	☐	☐	High
Effectiveness of inter-department communication						
Low	☐	☐	☐	☐	☐	High

25) Do the new processes require more time than before?
- ☐ Yes
- ☐ No

26) Do you think you have enough time to correctly follow new processes?
- ☐ Yes
- ☐ No

27) In your opinion, which are the main benefits of the new organization?
- ☐ Better control of my tasks
- ☐ Greater comprehension of company's processes
- ☐ Well defined working and interaction modalities
- ☐ Better cost control
- ☐ Higher company's efficiency
- ☐ There is no benefit
- ☐ Other (Specify)

28) In your opinion, which are the main difficulties of the new organization?
- ☐ Lack of time
- ☐ Excessive bureaucracy
- ☐ The procedures are too strict
- ☐ The procedures are unclear
- ☐ There is no difficulty
- ☐ Other (Specify)

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