

INFOTEP and SIMAPRO Training and productivity experience in the Dominican Republic

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INTRODUCTION

INFOTEP was the first vocational technical training institution in Latin America that adapted and implemented the SIMAPRO (System for the Measurement and Improvement of Productivity) methodology as a tool to link up with the productive sector, starting in the year 1997 and to this date. Although experience in the region began some years before in Mexico, in the sugar sector, its connection with a VTTI was very weak.

INFOTEP's experience in applying SIMAPRO leaves several lessons for vocational technical training policies that seek to interrelate with the improvement of productivity in enterprises, with a comprehensive and participatory approach, according to the principles of Decent Work.

This paper is an attempt to order the experience in a way that allows learning to be diverted to other institutions and to policy design. Two institutional macro learning experiences are inferred from this experience in order to arrive at significant impacts.

The first is the strategic vision and capacity to persevere of the institution. Training policies focused on productivity require a cultural change in VTT institutions, are experienced on the micro level and are difficult to multiply in the short term ('delivery'). This takes time and simultaneously, since 'large' figures of population attended are not generated, is often not very attractive politically. INFOTEP showed a perseverant vision and interrelated experiences at the micro level with macro proposals through instances such as the annual productivity conference.

The second macro learning that the INFOTEP experience shows is that the VTT institution must be capable of renewing itself constantly and, at the same time, renewing the methodology, without abandoning its main axes that make it sustainable in time. It can happen that a certain component or

aspect is abandoned and later on in the experience is taken up again, as occurred when applying the group performance measurement component (collective competency) in the INFOTEP experience.

The experience also shows pending challenges. Perhaps the two most important ones are: one, how to achieve better coverage when applying this methodology ('delivery'), i.e., how to go from a more specific experience to a generalized one; and two, how to form learning networks between enterprises and institutions that apply the methodology, in order to enter into a dynamic process aimed at the continuous improvement of same.

These lessons learned and pending challenges are addressed in this paper on the basis of three sections: background and context; SIMAPRO trajectory in INFOTEP and actions for the future. Direct sources were used for this analysis, resulting from monitoring the experience for 10 years by the authors.

BACKGROUND AND CONTEXT

Halfway through the nineties, INFOTEP began to incorporate productivity into its strategic plan and its activities. In the INFOTEP 2000 Strategic Plan the contribution to national productivity appears as one of the axes of the institution. It was rectified in later strategic proposals of the institution.

In the nineties, productivity appeared as a prospective need when faced with the imminent changes that were expected to arrive with the trends at the world level of an opening up of trade and technological change. The underlying purpose in those years was to prepare Dominican Republic enterprises, especially the SMEs that were producing for the domestic market, so that they might better face those foreseeable and imminent changes.

This implied a need to change as an institution and was thus visualized by the head office of the institution at the time: from an institution

In 1995, **INFOTEP** was an institution which carried in its very roots the culture of change, efficiency and relevance as regards the attention paid to the needs of its clients. It began with the implementation of INFOTEP PLAN 2000 the process of supporting the productive sectors of the country (workers and enterprises) to develop the conditions required to confront the righteous of the new world economic order, in which it has had to get inexorably involved.

used to operate in terms of the logic of supply to a logic of demand. To turn towards the enterprises and the demand in the labour market; modifying the initial training and skills development curricula, based on rigidly interpreted disciplines, towards a flexible curriculum based on on-going reading of demand, meant changes in the paradigm and the organisational culture of the institution.

At the beginning of the decade 2000, prospecting became reality, not because of a decision made by the economic and trade policy of the country, but because of a dramatic change in the environment of the markets where they traditionally had competitive advantages. Faced with the recession of those years in the U.S. and the appearance of Asian emerging countries, especially China, the competitive advantage of the RD export industry began to vanish. Simultaneously, some segments of the tourist sector lost their competitive edge and were not able to modernise, being left in a backward position as regards infrastructure and staff qualifications. The need to adapt enterprises to the change stopped being a problem of the SMEs alone and spread to industry and the service sector, of medium and large-sized enterprises accustomed to operate in external markets.

In the mid-2000s, the signature of free trade agreements, to which was added the macro effects of remittances on the appreciation of the national

Year 2002: Export industry case

Management visualises a new international division of labour for the Dominican clothing industry. Faced with Chinese competition in prices, quality, consistency and delivery fulfilment, it remains for the Dominican industry to occupy the niche of the market of immediate responses to non voluminous demands, taking advantage of the proximity to the North American market. This requires much more flexibility in production than in the past. The enterprise began with a new type of module, where the main objective is flexibility or adaptability to a wide variety of dress styles. It means a much smaller number of persons, capable of undertaking all the operations involved: a high performance multi-skilled team, where the payment system is no longer by individual piecework but a salary with possible group compensations. The competency profile of this staff is to know how to work efficiently on all the operations and be capable of rapidly changing styles of dress. Guides consider them to be an adequate instrument to be able to train staff in multi-skills as a support for a flexibility strategy.

currency vis-à-vis the U.S. dollar, productivity became a critical subject for all enterprises of the Dominican economy. Faced with this global pressure from all markets, a need appeared to go forward taking qualitative leaps in the transformation of the productive structure. On the one hand, a species of specialization of the economy is to be observed, in niches of markets where the country can generate a competitive advantage, and on the other hand, there was an intention to incorporate more knowledge to the productive processes as a means to enhance productivity.

One of the hubs of the Competitiveness Plan that was developed in 2006-2007, is systemic competitiveness, where the institutions are expected to contribute in a focalized and interconnected manner to the improvement of productivity. It is INFOTEP's job to supply not only initial training but lifelong training as well, linked to the needs of enterprises, especially in terms of enhancing productivity. Advisory services to enterprises, in the design and establishment within their organisation of a system of permanent learning aiming at the continuous improvement of productivity and working conditions, became a part of the institution's mission.

Year 2007: The Dominican Republic is in the middle of a transition from a closed economy to an open one, generating pressure on the enterprises that are oriented towards the internal market. At the same time, exporting enterprises face more players in markets that were before their domain, especially in the case of assembled products (free zone). If to these two phenomena are added the change in the tax system, the over-valuation of currency and the costs of indirect inputs (energy), the competitive capacity of enterprises is being subjected to ever more demanding tests. 'To pass the test' is no longer for the enterprises something that one had to prove once in a while and which for many was an 'automatic pass'. Now it is a demanding test, rigorous and performed daily, under penalty of leaving the market and closing the doors. This is reflected in a behaviour of strong and permanent changes, not very foreseeable, where enterprises close, change their direction, begin new lines of production and expand.

TRACK RECORD OF INFOTEP WITH SIMAPRO

The track record of INFOTEP with the implementation of SIMAPRO is closely related to three moments in the recent evolution of competitiveness of the economy of the Dominican Republic.

- **First stage**

INFOTEP begins SIMAPRO implementation in the year 1997. The approach is broad, both from the methodological perspective and of the economic sectors in which the implementation starts. It was orchestrated through the department of entrepreneurial advisory services, which is an extension of classroom training towards training in entrepreneurial management in the field, in practice.

In terms of methodology, a comprehensive approach of measurement and improvement of productivity was chosen, that surpasses SIMAPRO's original methodological proposal. Several types of performance were differentiated. The first is performance at the financial and economic level, at the level of the organisation as a

COMPREHENSIVE PRODUCTIVITY MEASUREMENT

Four types of indicators

1. Economic and financial performance

...for strategic planning...

2. Processes performance

...to evaluate the quality of de process...

3-4. Group and individual performance

...to motivate staff and change behaviours...

whole. The second is at the processes level, both technological and organisational. The third refers to group performances, where SIMAPRO's origins are, in other latitudes. (Pritchard, 1990). The fourth is the individual performances component, the competencies. Finally, two components were named performance of human resources.

Work was done initially with the first three measurement systems, to then incorporate the fourth, the competencies. The latter were approached with the AMOD model, that is derived from DACUM.

The purpose of this approach was to provide a diagnosis and plan of action to improve the whole organisation. Thinking of the SMEs, it was understandable that a comprehensive approach would have a better impact than a partial approach. Even more so if there is concentration on manage-

ment of human resources since in the SMEs the HRM systems are not very developed and studies indicate that one of the most recurring problems is precisely administration. Therefore the proposal seemed to be attractive. As structure it is somewhat like what was later known as the system proposed by the 'balanced scorecard' .

In the financial-economic performance component there is a breakdown of a series of basic indicators of organisation of the hierarchical tree of sub-indicators, that can be managed from the perspective of human resources and of the organisation. For example, the relationship between investment in equipment and the investment in skill development per individual.

The processes component considers a set of indicators of process quality (21 in total), close to the concept of lean manufacturing and total quality. Measurement is approximate, i.e., precise data are not resorted to, but rather it is done through a qualitative self-evaluation of the organisation itself.

The group performance component, the SIMAPRO, is based on the objectives of the organisation, projected in each area or group. A distinction is made among process objectives (volume, quality) and social objectives (safety on the job, absenteeism, cleanliness). The axis is the participation of workers in the definition of the indicators, parameters and improvement proposals.

The individual performance component measures the gap between the competency and results profile desired and the profile of each individual. The method used, AMOD, is participatory and at the same time allows a learning route to be outlined, a species of curriculum mesh, for the individual

Year 1997: Training was delivered for 4 days to the 40 entrepreneurial advisors INFOTEP has at the national level. The course included methodology of measurement and improvement of productivity. It was made up of the presentation of the measurement methodology at three levels: a) economic-financial; b) processes management; and c) human resources. The course concluded with an INFOTEP proposal to start with six pilot experiences, of which the advisory staff considered to be the most suitable for this type of work was in charge. It is expected that to the extent that these experiences advance and the methodology takes shape as part of the official INFOTEP supply, the profile of the advisors will have to be adjusted and revised, since not all advisors seem to have the preparation or the attitudes/abilities needed to undertake an advisory exercise based on the measurement methodology and productivity improvement proposed.

Year 1997: In the six enterprises visited the reaction of managers and workers interviewed regarding the methodology was very positive. The financial-economic indicators encouraged the enterprises to aim their administrative practice towards a strategic direction in terms of construction of indicators and the analysis of same. In several enterprises administration was extremely poor. With the methodology they became aware and were able to put their administration in order.

In the case of Pyensa, management commented that the financial indicators had helped to be "more precise regarding which the key indicators were for the enterprise for its strategic planning. They could better succeed in the initiatives of productivity improvement." In Khouri, the construction blocks enterprise, they had never calculated benefits on assets, nor unit cost, because they did not have a reference price for an important part of the raw materials., the sand, which comes from a mine developed by the same enterprise. With advisory services they were able to calculate costs and benefits for the first time.

With the process management indicators, weaknesses in the productive process were identified, such as the need to reduce waste (Pyensa), delivery time (Rattan Dominicana), reprocessing and loss of start up time for new machinery (Khouri-blocks); downtime for maintenance (CamposFrio); appropriate operation of the cooling system and readiness of the equipment (Helados Noris); inventory under way and reworking in the paint area (Macel furniture). As a result of (self)diagnosis, the respective managements took action/correction measures and the result was an improvement of the indicator in question.

The construction of the HRM family of indicators caused greater impact because of the highly participatory methodologies orchestrated: visualising, to detect needs and improvement opportunities; SIMAPRO, system for measurement and improvement of productivity. Both begin from the opinion and point of view of the workers/staff, which in a context of the tradition of Dominican society are not 'daily bread'. The main problems identified and simultaneously addressed were the lack of co-operation of the staff with the objectives of the enterprise in general, lack of staff integration, lack of order and cleanliness (Macel furniture).

It began with a pilot group of 6 cases that were later to be presented at the annual productivity conference in that year (1997). In just a few months (4) they managed to advance the implementation of the methodology in 8 enterprises in different regions of the country. There are advisors who are accountants, others who are engineers and others specialists in HR. It is because of this that some of them focused on financial indicators while others on process management or human resources. The proposal has the particularity of bringing together the three types of indicators, which caused all the

advisors to learn something new, outside their speciality, placing themselves in an unequal situation regarding each other. The methodology thus became an element that unified the criteria of implementation among the advisors themselves, helping central INFOTEP to administer itself.

However, this turned out to be a proposal which was difficult to sustain in time, particularly with the changes which began to occur in the advisory team in the following years, especially after the year 2000. The advisors trained in their work trajectory in HR found it difficult to develop financial-administrative or process competencies. Also, those who had a speciality in the administrative and engineering field found it difficult to go into HR management in depth.

In the first years of SIMAPRO implementation, there was an important quantitative expansion. For the year 2001, 75 enterprises at the national level had implemented the methodology. This did not mean that they all sustained it, but that they had implemented it at some time in their organisation or, otherwise, they had trained to implement it. They belonged to various branches of activity, 45 of them grouped in the industrial sector and the remainder in trade and services. More than half were SMEs.

In that year INFOTEP prepared a study to evaluate the impact of the SIMAPRO methodology. They took into account the opinions of entrepreneurs and workers. The outstanding aspects are mentioned in table 1.

- **Second Stage**

The second stage of INFOTEP's implementation of SIMAPRO started at the beginning of the year 2000 and coincided with the change in context of the economy. On the one hand, medium-sized and large enterprises of the export sector confronted a profound change in their markets, with greater demands regarding quality and delivery times. On the other hand, the tourism sector required greater quality in services to be able to obtain a better position in the market and take advantage of the opportunities that were not materializing.

At the same time there were changes in staff in the advisory area of the institution, among other reasons because they found better employment options elsewhere. It was very difficult to replace the old and train the new advisors in all the methodology. Even more so when greater stress was laid on individual competencies than on collective ones.

Table 1
SIMAPRO Impact - INFOTEP 2001
Main results according to social actor

Entrepreneurs (n=68)	Workers (n=59)
<p>General: Methodology has been beneficial to very beneficial (88%)</p> <p>More impact on:</p> <ul style="list-style-type: none"> • Improvement in product quality (23%) • Improvement in process quality (20%) • Efficacy in use of resources (14%) • Participation of employees in troubleshooting (14%) • Staff training (11%) <p>Improvements observed as of SIMAPRO implementation in:</p> <ul style="list-style-type: none"> • Participation of workers in troubleshooting (69%) • Staff motivation (76%) • Efficiency of processes (83%) • Efficiency in use of resources (79%) • Service quality (82%) • Hour per person production (52%) • Consumption of materials and energy (55%) • Postsale quality (55%) 	<p>Improvements observed as from SIMAPRO implementation in:</p> <ul style="list-style-type: none"> • Concern by enterprise to train staff (90%) • Salary and other financial benefits (60%) • Relations between fellow workers (90%) • Safety conditions on the job (80%) • Communication and co-operation (93%) • Knowledge on job duties (93%) • Commitment of management regarding workers (83%) • Autonomy in the development of activities (80%) • Personal and group performance (94%)

Both factors contributed to the fact that advisory services began to focus on the component of improvement in individual performance of workers, the other components being abandoned (financial economic, processes and group.) It should be mentioned that through individual competencies and especially the way they were addressed, it was possible to impact on group and process performance.

At this stage SIMAPRO concentrated basically on two instruments. The first was the identification of individual competencies related to a job and aimed at improving productivity in the role or job, through a learning process based on competencies. The methodology applied was the AMOD. With the evidence shown by workers and validated by a panel of experts of the organisation, INFOTEP certified the workers.

Year 2001. Guides for self-training and evaluation by competencies appear

Concept of traditional trainer role transition:

The development of training has a self-direction or self-learning component and is based on the active participation of the operational staff in its implementation. It allows personalized progress in learning and assigns learning responsibility to the individual. The enterprise has to generate the learning conditions (materials, location, schedule and support staff). This does not eliminate the use of the classroom, but rather it becomes a place for operational groups to meet to share knowledge, with the support of the supervisor and the co-ordinator of the programme. The traditional instructor is not involved. Generation of a space for analysis and reflection is induced and facilitated among the operational staff, supervisory staff and some specialists (in quality, for example). Evaluation of performance occurs at the workplace and it is an on-the-job training space. It is the most important component in the training process since it is its realisation in the productive process.

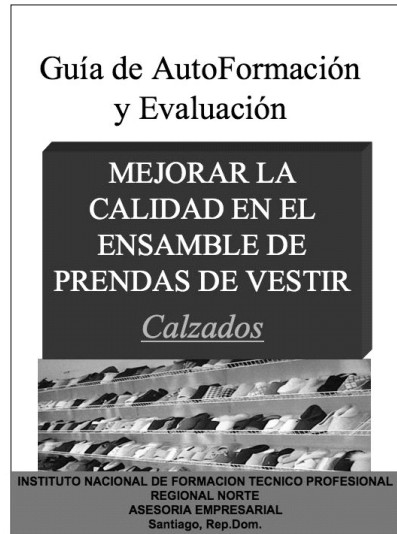
The second was the design and development of the Guide for self-training and competency-based assessment (GAEC, in Spanish) to improve efficiency and quality in a certain productive process. The reference methodology of the Guide is the SCID, that is derived from DACUM and which means systematic curriculum development based on instructions. It is an 'express' tool that in an expedite manner can be produced once a defined structure for the sector or branch of activity has been obtained.

This instrument is produced by the INFOTEP advisors jointly with the technical and operational staff of the enterprise. A custom-made suit is produced in each organisation, but it has a common structure. It is a similar concept to 'mass customization' that is used in industry or services to combine standardisation with flexibility.

The development and extension of this instrument is concentrated in a geographical area of the country and in a sector: the enterprises of the free zone in the north of the country (Santiago). It can practically be concluded that INFOTEP's SIMAPRO focused mainly during the years 2001 to 2006 on the production and implementation of the GAEC in these enterprises and in that region. Without exaggerating and comparing with initiatives that were simultaneously implemented at the time in other latitudes, especially in Mexico, INFOTEP achieved leadership in the implementation of this tool in Latin America.

The GAEC has the following features that make it stand out as a relevant training instrument in a context of high and changing requirements in quality and in costs:

1. It addresses generic and specific aspects, in a comprehensive manner, since it refers to the productive processes but also to social needs (safe working conditions, communications, gender equity) and personal needs (personal health care, HIV/Aids prevention).
2. It is flexible, adapting quickly to changing needs.
3. It is dynamic, focalising on critical aspects to be improved by the enterprise and staff.
4. It is a custom-made suit of each organisation, since images and specifications corresponding to the organisation are applied.
5. The guide is at one and the same time a training and an evaluating instrument; it becomes a portfolio of evidence in competency of the workers.
6. It is managed by the enterprise itself, with the assistance of the institution as support and external auditor.
7. It is low-cost once generalisation of the instrument begins in the organisation.
8. It is participatory, since it is worked on and analysed by a group, causing collective and individual reflections on processes and working conditions.
9. The possibility of certifying staff, having the guide as a benchmark or standard, requiring as evidence for certification the impact on productivity.
10. The possibility of updating initial training in the INFOTEP workshops, applying the guides to the students, and thus establishing a 'natural' link between this training and the needs of the productive sector.



Several enterprises where the methodology is being applied take part in another INFOTEP programme: 'the little school'. It involves the enterprise providing space and machinery to train individuals with no experience through an instructor paid by the INFOTEP free zone project. A first step in integration of the implementation of the productivity and occupational competency methodology with the initial INFOTEP vocational training system methodology has been to link the little school to the guides. Also in initial training in INFOTEP workshops. When the guides had been applied there was a reduction in hours of initial training in clothing manufacture from 240 to 120, in Santiago Regional.

For the year 2007 the INFOTEP North Regional had attended, through its department of advisory services, 63 enterprises to establish the GAEC. Via this instrument, 1972 individuals had been certified. In all the enterprises there was a productivity improvement impact, both regarding the labour factor and all factors.

For example, in a leather goods enterprise (special footwear) the productivity indicators, by comparing the 'before' and 'after' having applied the guides, showed the following result: in the cutting area defects decreased from 6.4% to 3.7%; in dancing footwear, they declined from 15% to 3.2%, and the reprocessing came down from 17% to 3.3%. (data from the enterprise)

Typical case of design and implementation of the GAEC (2007)

A typical case of GAEC implementation and its link to measuring and improving productivity is that of the Timberland establishment in Santiago, Dominican Republic. It is a company dealing with the production of footwear (boots and casual shoes) for the international market. Its production processes are part of the manufacturing cycle from the preparation up to the finishing of the product. It employs 1810 employees in 11 plants, located in the Santiago Industrial Park..

The advisory service for the improvement of productivity (SIMAPRO) was launched in 2005. The objective was to contribute to the improvement of quality and productivity of human resources, levelling its levels of competence and enhancing attitudes favourable to teamwork and performance in the productive process. It chose to use the competency-based training strategy by applying guides for self-training to the workers and middle manage-

ment of plant 10, in two production shifts in the operations of 'stichen' and 'bottoming' and later incorporating the remaining sub-processes, including inspection and packaging.

The GAEC is a tool to train operational staff in the development of generic and specific competencies, needed to achieve good performance in a productive process. It includes knowledge associated with the critical operations of the production process as well as general behaviours related to customer services, safety and personal hygiene, order and cleanliness. The specific competencies refer to operations and phases of the productive process; in the case of footwear, cutting, stitching, audit., repair, lasting, injection and finish are included.

The GAEC process begins with the design of the guides of which the Steering Committee is in charge. The Committee is responsible for organis-

Year 2004: Consolidation-Maturing

The success of the maturing stage will depend, *inter alia*, on some specific actions that will allow progress in sustainability and expansion: (i) involve and make responsible the middle management (supervisors) and operational management in the overall management of the project, by changing INFOTEP's role as executor to facilitator of the implementation of the guides in the enterprises; (ii) apply the evaluation model – audit – certification as an instrument of 'final accountability' of the expansion of the project; (iii) make the project more visible, both to INFOTEP and to the enterprises (image, recognition of the enterprise, dissemination), under the concept of 'permanent and inclusive learning in the organisations'; (iv) update the contents of the guide, aiming at continuous improvement (including a title alluding to same) and including subjects such as 'lean manufacturing' and '6 sigma'; include in the evaluation model ('semaphore') an additional colour (blue) that refers to outstanding performance in the competency; (v) experiment other ways to reproduce comprehensively the guides for the workers, for example, delivering to them only the part on self-evaluation and evaluation, while the part on explanations is only made available for consultation in some strategic point of the enterprise, such as the training classroom); (vi) organise encounters for the exchange of experiences on the implementation of the guide, among enterprises, in order to encourage institutional learning in this field; (vii) provide multimedia digital equipment (photographic and video cameras) to the advisory area to document and disseminate experiences; (viii) expand the methodology and instruments to other free zones in the country and enterprises that are not free zones.

ing and leading the process in the enterprise. The following step is to apply the guides and with feedback from the participants assess the strengths and weaknesses found during the implementation process.

The guide was implemented by beginning with the stitching operation (upper part of the shoe) in two working shifts. The remaining operations were then gradually incorporated: bottoming (lower part of the shoe), lasting (last of the shoe) and finish; it was supplemented with a guide for kitting (preparation). There was a total of 6 self-training guides that were produced for 317 workers. It was supported by a team of external instructors supported by the Steering Committee under the co-ordination of an INFOTEP entrepreneurial advisor.

A plan for training supervisors was defined as a complement to the GAEC process and to provide support to the production process, improvements were suggested by workers as they went along. For those purposes it was supported by the INFOTEP Middle Management standardized programme, that included day-long team events. Corporate managers were also given training in managerial abilities.

- **Third stage**

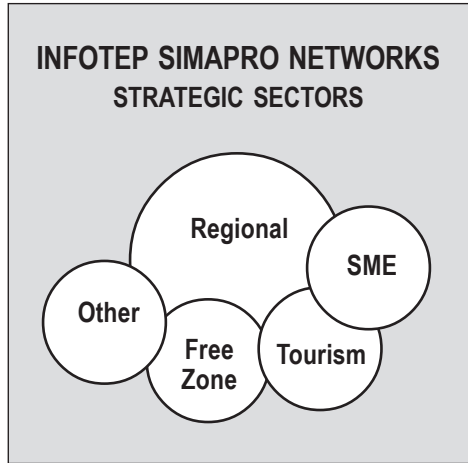
The third stage of SIMAPRO implementation by INFOTEP, begins in 2007. Several factors converge. In the first place, an opening up of trade with Central American countries. In the second place, competition with countries of Southeast Asia, especially China, in manufactures' export markets (assembly). In the third place, a partial recovery of the tourism sector. In the fourth place the drafting of a national competitiveness plan with specific training tasks.

It can be said that reality went as far as that which was expected for the nineties, but at the time it was a probability which still had to be lived. At present, changes are constant and unpredictable in the enterprises of the country. What is predictable is that permanent training of staff aimed at the enhancement of productivity is an imperative need for enterprises in view of this environment.

INFOTEP's management visualised its role in this context in the following way. In the first place, training on offer in the institution will always be behindhand in view of the specific needs of the enterprises. This does not mean that the supply will not return to competencies identified together with

the productive sector, but that it will emphasise more lasting and less specific aspects of competencies.

In the second place, enterprises must develop their own internal permanent training systems. INFOTEP is called upon to support enterprises in designing and orchestrating said systems. This means that its role as supplier of courses must change into that of an advisory agent that accompanies enterprises in installing the systems.



In the third place, the permanent training systems in the enterprises must aim at individual and collective productivity improvement in the organisation. In this way investment in training is focalized towards impacts in terms of productivity and working conditions (Decent Work). This allows training to be managed according to ROI principles (return on investment), which allows the enterprise to record its results and render accounts for the scope of same.

In the fourth place, both the supply of training and the advisory services for assembling permanent learning systems aimed at an improvement of productivity and working conditions (Decent Work), require a strategic focalization on the part of the institution; in this case, synergy with the national competitiveness plan. This allows INFOTEP's effort to be interconnected with other Government and private sector initiatives, thus mutually reinforcing each other. As regards SIMAPRO, it means specialization regionally and nationally in some sectors or productive chains (or clusters) that converge with the national plan. This does not mean that enterprises of other economic branches or regions will be left out, but that the emphasis will be placed on those that from a macro-meso perspective have been identified as having the greatest potential in the short and medium term.

Half-way through 2007 INFOTEP gave a new orientation to its SIMAPRO experience. On the one hand the group performance component was included once again (measurement - feedback - improvement of productivity and working conditions). This collective competency component had been virtually abandoned in the previous stage. The change in advisors and lack of

practice led to decide in favour of an intensive training programme in this component, with the incorporation of new aspects that in the first stage had not been incorporated. Especially the availability of software with an internet platform to process and document more expeditiously the SIMAPRO process and the introduction of feedback techniques based on question pedagogy and critical reflection, supported by nano-learning tools.

On the other hand, the knowledge accumulated in the management of the GAEC would be extended towards all the regional offices of the institution. Focalsing is sought in this extension, that translates into each regional specialising in a sector, productive chain or cluster.

Both lines of action converge and interrelate with each other, on the basis of the configuration of learning networks. Advisory services do not end in the enterprise: At the same time they accompany participation in a network of exchange of experiences and knowledge on the management of permanent training systems in organisations , oriented towards the improvement of productivity and living conditions. This changes advisory services from a static approach to a dynamic practice, that includes the option of learning and horizontal development (between enterprises and training and study activities).

This new orientation in INFOTEP's implementation of SIMPARO occurred in the framework of a collective learning experience of the advisory team and with the participation of enterprise representatives. It was an advisor training activity on the supply side and of enterprise repre-

Year 2007: Towards transformation of the service

The context of INFOTEP's role in its relationship with the enterprises of the country will have to evolve, to be able to offer valid and relevant services. That contributes to the development of a totally different environment from those years when the institution began its work. The greatest challenge is probably to stop being an institution that offers courses, 'packaged courses' or custom-made suits, to become one that collaborates with the enterprise to install and sustain permanent and inclusive permanent learning systems. This not only changes the approach of the institution but also requires new competencies for its staff, able to provide this type of services. It implies going from focalizing on a specific competency to a holistic competency approach that involves technical aspects with social and organisational ones.

Year 2007: Infotep Santiago

The integration of SIMAPRO and Self-training guides in the scheme followed in Santiago, Dominican Republic, in the free zone sector, incorporates measurement of plant indicators into training with the feedback from the results or performance of the team (module), the contents of the guide becoming nano-learnings at the same time as the operational dynamic of the working team, with the supervisor, a facilitator and an advisor, is monitored and followed up.

In August, 2007, 1430 workers of Grupo M were certified in occupational competency, by means of Self-training Guides, in the general competencies and techniques identified for the production of Poloshirt, Tank Top, T-shirt, warm coats, pants, *inter alia*. This process began in 2005 and showed, by way of the indicators provided, the impacts achieved and especially the impact of the guides on attitudinal variables (behaviour, attitudes for change) which in this case have been decisive in the implementation process of Lean Manufacturing on which the enterprise is working.

representatives on the demand side, in the SIMAPRO management tool (Systems of Measurement and Improvement of Productivity) and Guides for Self-training and competency-based assessment. These two tools complement each other and their implementation in the organisation leads to a practice of permanent and inclusive learning practice oriented towards the improvement of productivity and working conditions, with the participation of all the staff. It is because of this that it is considered a valid and relevant proposal in the context of transit from an economy based on low cost labour and inputs towards one the main dynamic axis of which is the incorporation of new knowledge.

65 entrepreneurial and technical advisors from INFOTEP took part in the training as well as 40 enterprise representatives from the human resource and production areas. Several sectors were represented, some of which stood out because they were considered strategic within the National Competitiveness Plan: the free zone, tourism, agricultural industry, SMEs, construction, trade.

The training had three results. In the first place there was a levelling in the capture of the SIMAPRO methodology among the advisors and technical staff of the area of support to INFOTEP entrepreneurial competitiveness. For new advisors it was an introduction to the tool; for more

senior ones it meant refreshing and updating their knowledge and ability to handle the tool.

In the second place, a concrete supply proposal was made by INFOTEP to enterprises to install and maintain a SIMAPRO model. It is a letter of introduction to the institution where it states its speciality and capacity for response. This allows the institution to distinguish itself in the market with a product that is aligned with the values and principles of the institution and, universally, with those of the ILO.

In the third place, SIMAPRO was launched in several enterprises, around 20 of them, that took part in the training. The activity was used to involve enterprises and to train their representatives in the methodology, in the implementation route and in the logic of being a part of an institutional learning network on SIMAPRO implementation.

CHALLENGES AND FUTURE ACTIONS: SIMAPRO - INFOTEP

Future actions have been classified into 4 sections. The first is the strategic order in which SIMAPRO is implemented as an INFOTEP programme towards enterprises: In which sectors and regions? And, with whom? This refers to macro interconnectedness.

The second is of a tactical order and refers to how the extension of the SIMAPRO implementation is co-ordinated among Dominican enterprises more quickly and with a self-accelerating model.

The third section is of an operational order and refers on how to manage the expansion of SIMAPRO under quality criteria, laying stress on the management of competencies as a tool for that purpose.

The fourth is focused on the sustainability of SIMAPRO implementation. Inside organisations this is achieved through interrelations with other productivity enhancement programmes and towards the outside, by means of learning networks between enterprises and institutions.

1. Strategic

On a strategic plane, decisions are related to what sectors should be focalised in implementing SIMAPRO. It is advisable to start with sectors or branches that match what have been identified as priorities at the global country level, so that synergies can be generated between a diversity of in-

struments that will be projected towards them. This does not mean that others will be left aside, but that more attention will be paid to the strategic ones from a macro-sector perspective.

Priorities by sectors are generally considered by regions, since the same sector is not usually a priority in all regions of the country. It is a specialisation that must be interpreted with flexibility, since the dividing lines between regions are not at all uniform or unambiguous.

Which are the priority sectors and from what perspective?

A first strategic sector is tourism. It is a sector that relies heavily on static competitive advantages. To transit towards dynamic advantages, the quality of service and efficiency will have to be improved, to make the sector competitive on the basis of its human capital. It is a sector which is expanding, although not at the same pace in the whole country. The prospects regarding a more comprehensive tourism, that includes the community near to the tourist areas as part of the attraction for visitors, pose important challenges regarding competencies to be developed at the level of individuals and organisations. It is an opportunity context to be put to better use with SIMAPRO to generate greater impacts on employment and welfare.

Specifically, it will be necessary to work very closely with the Ministry of Tourism to gradually interconnect the projects from a global vantage point. The same is true of associations of entrepreneurs of the sector and skills development centres of same. The complementary services sector linked to the communities will also have to be included.

In terms of regions, although this sector is present in the whole country, the most dynamic part is concentrated in the southern region. Because of this it is recommended that the INFOTEP South Regional specialize in the implementation of SIMAPRO in this sector. This does not mean that other Regionals develop experiences in this sense, but rather that it will not be their specialization.

A second strategic sector are the enterprises of the free zone. Although there are a heterogeneous number of sectors in the free zone, those which have traditionally prevailed are in the clothing industry. Recently, the presence of others has been increasing, such as leather goods, electronics, automotive parts, plastics producers, apparatus for the health sector, communications centres (phone service) and document processing.

The context of the sector and especially the clothing sector, is an obligatory transition towards the creation of dynamic competitive advantages, because the static ones based on cheap labour stopped being functional when confronted by competitors from other countries. The SIMAPRO may be a tool that, from the perspective of human resources, contributes to the transition towards products of greater value added.

The most dynamic region as regards free zones is the north. What is recommended is that INFOTEP's North Regional specialise in free zone enterprises, without this meaning that it cannot attend to enterprises from other sectors such as construction, tourism or agro-industrial clusters. In practice in recent years, this Regional has already generated a great deal of activity in this sector, whereby this specialization would seem to have been 'natural'.

A third strategic sector is the small and medium-sized industry associated to the sector of machine tools, installations and instrumentation industries. It is a sector that, in an open market, has to activate its capacity to generate dynamic competitive advantages. Most occupy niches in the markets, whereby their competitive capacity is in specialisation and in generating from there on, a relatively static advantage. It has the potential to generate jobs rapidly and in variety, which makes it possible for individuals of different competencies to find employment.

These enterprises exist in the whole country. Perhaps their greatest possibility of development is in the capital, in Santo Domingo, because of the diversity of market niches there are in this urban area. It is up to the Centre Regional of INFOTEP to specialise in the implementation of SIMAPRO in SMEs of the industries mentioned. As in the other Regionals, the Centre Regional has been working in this sector of enterprises, because of which specialisation would be 'a natural' in this sector too.

A fourth strategic sector is agro-industry. Partly because of the re-launching of some sectors that had been abandoned and that at present provide new business opportunities, as in the case of sugar mills. Also because of the markets which are arising for tropical products, especially fruits. In both cases an attempt is being made to take advantage of the static competitive edge (climate, water, earth) that with technology, organisation and staff training, becomes dynamic.

There are possibilities in several parts of the country. Where they will have to be boosted most, however, is in the southern region, given the opportunity for employment this means for a region with very few develop-

ment options. The South Regional of INFOTEP may specialise in implementing SIMAPRO in enterprises of this sector, although not exclusively, and as has been mentioned more than once. Even here there have been approaches to the sector, especially to the sugar mills sector.

It is worth pointing out that in the case of the sugar sector, attention will have to be paid to the service at the national level, since the mills are dispersed throughout the country and at the same time there are not many of them.

2. Extension of the implementation

So far the INFOTEP experience with the advisory service for enterprises in SIMAPRO implementation has been approached as a project. There is sufficient evidence at present that the tool is valid and relevant in the country's present context. It is recommended that it advance to the status of *strategic programme*, where the institution visualizes it strategically in its policy and in its processes. This does not mean that it should become a bureaucratic process for enterprises, but rather give it greater institutional scope, both towards the outside and the inside, linking it among other things with the initial training workshops.

The extension of SIMAPRO to a greater number of enterprises and at the same time with the flexibility and capacity for response that there has been so far, is not easily handled with its 'own' staff, nor is this advisable, so as not to become a 'heavy' instance with the risk of becoming too bureaucratic. In a natural way in some Regionals the figure of SIMAPRO facilitator or specialist, is at the same time a specialist in the productive area, that is connected as an external to the institution, and is under contract to accompany a certain sub-process within the SIMAPRO methodology with a enterprise that needs it. The person responsible for the relationship with the enterprises continues to be the INFOTEP advisor, who has a portfolio of enterprises under his charge and works on co-ordinating and linking SIMAPRO with other services of the institution as regards the enterprise.

The recommendation is to transform this experience of facilitator-specialist into a policy for the implementation of SIMAPRO in enterprises. This would be done in order to be able to reach a greater number of enterprises, flexibly and with a 'custom made' type of attention within the framework of a methodology (analogous to the concept of mass customization). It requires that a bank of consultants or specialists be formed who have complete do-

minion over the tool and at the same time have the technical expertise in a productive sector or branch.

The advantage of this kind of specialist is a triple one. In the first place because it is possible to reach more enterprises without expanding the structure of the institution. In the second place because the SIMAPRO tool can be related with other techniques and with better practices in the sector, through the technical 'expertise' of the specialist. Thirdly, because the tool can also be disseminated autonomously, since the consultants-specialists can also apply it directly with enterprises, if the latter so desire or because the INFOTEP capacity for assistance has reached its standardised limit.

The INFOTEP would co-ordinate the bank and accredit the individuals who have demonstrated capacity as SIMAPRO facilitator-specialists. The recommendation is to define the competencies required with a technical committee composed by the present facilitator-specialists and representatives of some enterprises who have had the experience and have been clients of the process. It is advisable to keep the format of competencies and accreditation simple but significant; the validity of the accreditation would be temporary, be it because of the cycle of the version of the SIMAPRO model or because of the years of practice of the individual (for example, every 3 years).

Also recommended is that facilitators-specialists or consultants be knowledgeable as regards the sector where they will apply the tool. It does not necessarily mean that they must be specialists in the productive process, but they do have to have knowledge of the trends and good practices in the sector.

3. SIMAPRO management competencies

As a supplement to the quantitative extension of SIMAPRO we must turn to the quality of the said extension. In the final analysis experience has demonstrated that SIMAPRO, to be implemented well, basically depends on two things: firstly, the involvement in and support of upper management of the system; secondly, the training of the co-ordinator, middle management and specialists (quality, industrial safety, systems) in their function in SIMAPRO management. In the context of extension the need for trained advisors and specialists-facilitators in the methodology and in the role they have to play is added.

To ensure the quality of the training of the individuals who play different roles in SIMAPRO implementation, the establishment of the competen-

cies in order is recommended and, based on them, the training instruments (manuals, cases, practices) and instruments of evaluation (portfolio of evidences). This allows us to accredit the competencies acquired by the individuals through INFOTEP. For example, certification of SIMAPRO coordinators in the enterprises, the specialists-facilitators, middle management. It also allows people within the institution to develop a training and career plan for advisors in the management of the tool from the perspective of INFOTEP as a training entity

Competencies can be established in many ways and not necessarily is any of them good. The institution will have to define what architecture of competencies shall be used, in order to specify the principal decisions to be taken regarding the model to be followed, which makes it possible to return to the points of origin in the evaluation of the proposal and analyse whether they were appropriate or whether they need adjustments.

We have gone part of the way. A profile of competencies aimed at strategic objectives and goals of the institution in 2005 has been developed for the advisors in a participatory manner. To do so a comprehensive model of competencies was applied, focused on results but that at the same time allows a learning and development itinerary to be established (Annex 1). The re-use of this architecture of competencies employed for the advisors is recommended as is the production of profiles of the same architecture for the remaining roles.

It is recommended that, to outline the competencies of the roles in the implementation of SIMAPRO, the good practices used in the country be repeated and, having the architecture of the competencies model defined, the most important conducts and technical capacities required be identified. To structure the identification of the competencies it is recommended that the basic scheme of SIMAPRO implementation in 5 steps be used as a support (Annex 2). On the basis of this scheme the competencies can be located in a model similar to that used by model ISO 9000 and, at the same time, they can be linked to the deliverables or results that are expected from each core activity of the implementation in the short and medium term.

It is advisable to make a benchmark comparison with experiences in other countries where SIMAPRO is implemented (Mexico, Cuba, Chile). Likewise, self-training and evaluation manuals based on these competencies shall be based on the said good practices in the country and would be supported by the efforts being made elsewhere.

It is recommended that the evaluation instruments be kept simple and significant, rescuing cumulative learning in a dynamic perspective. This would imply that those which are part of the competency to be demonstrated propose, apply and disseminate improvements in the SIMAPRO instrument itself. This allows and obliges the institution to enter into a process of continuous improvement regarding the implementation of the model.

The possibility of certification is an opportunity that must be taken advantage of. It is something that INFOTEP has been doing in the last few years: certifying people in their occupational competency. If that practice were to be extended to the competencies of the different roles involved in SIMAPRO implementation, it would help in the quality of same and could gain greater credibility as an institutional proposal. Providing the certification model is simple and transparent, so that it may acquire real social recognition and value.

4. SIMAPRO sustainability

Even though there may be difficulties in initiating SIMAPRO in an organisation because of all a change in the organisational culture implies regarding the management of learning and knowledge, it is much more difficult to sustain the model in time. Practice has taught that, for many reasons, it cannot be expected that all organisations will be able to sustain it always and with the same enthusiasm and commitment.

At the same time, sustainability is the result of an organisational learning process where the organisation learns itself, with the help of the external milieu. To the extent that the environment shows itself to be more dynamic in learning, greater will be the impulses towards the organisation to continue to locate and improve the way. It is up to the institution to create and facilitate spaces of a milieu favourable to learning in SIMAPRO sustainability.

For both reasons work on two complementary approaches is recommended. The first is the organic interconnectedness of SIMAPRO with other strategic programmes in the organisation, such as ISO, 5S, lean manufacturing, TPM, RSE. It is a dual linkage. On the one hand these programmes lean on SIMAPRO to become culture and to measure its impacts on productivity. On the other hand the insertion of SIMAPRO in these programmes will increase the probability that the organisation will continue to apply and to innovate SIMAPRO.

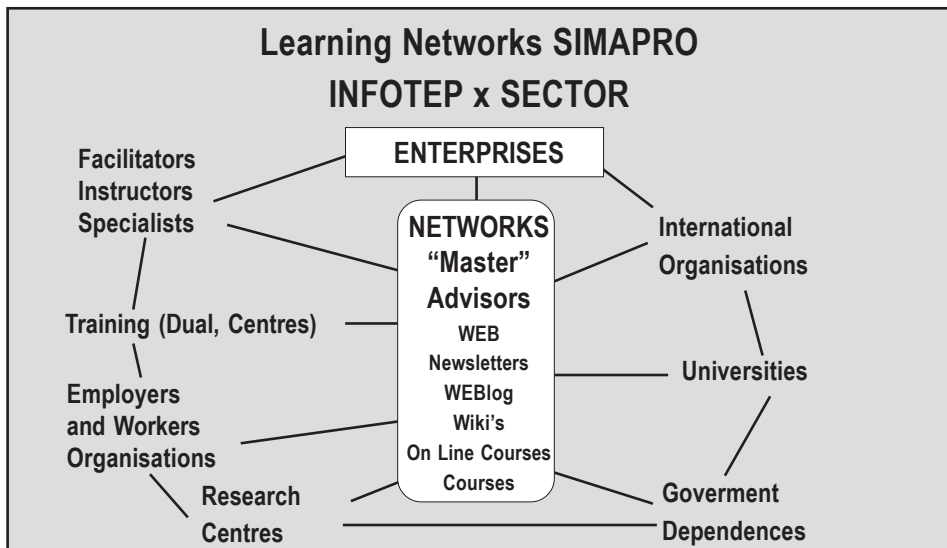
The second is to work on SIMAPRO implementation on the basis of the NETWORK institutional figure. It starts by generating individual experiences in some organisations, which same extend to others when sharing the experience it has had. The NETWORK not only includes enterprises that apply or attempt to apply SIMAPRO, but they also involve specialist consultants, employers' and workers' organisations, training institutions, government dependencies, research centres and universities, international agencies. In the centre of the NETWORK is the institution represented by the INFOTEP advisor.

It is up to the advisor to keep the NETWORK active, especially at the beginning. How is it done?

It will be necessary to establish regular activities of exchange of experiences and simultaneously to activate and invite participants in second generation web sites (web 2.0) to facilitate exchange between members spontaneously and directly.

It is recommended to assign to advisors the function of integrating and starting up operations on the NETWORK by sector, branch of activity or specialisation (see, for example, in the tourism sector of the DR: <http://simaproeste.ning.com>)

According to the case there may be one or more advisors per NETWORK, depending on the complexity of same as well as the development of the com-



petency of the advisor. One of the quantitative indicators of the INFOTEP SIMAPRO programme would be the amount of NETWORKS installed; another is the amount of enterprises, and with them of people, who are part of each NETWORK. In qualitative terms, an indicator would be the depth and significance of the SIMAPRO tool improvements proposed in the web forums or in the NETWORK meetings.

At the international level, INFOTEP will be part of a set of NETWORKS that are working in a similar direction. At the same time it is relevant to recall that INFOTEP is one, if not the pioneer institution in the vocational technical training area in the Latin American region, working on the experimentation, adaptation and development of SIMAPRO, since 1997. Therefore, it has a lot to share with homologous institutions in the region.

An important network to which INFOTEP belongs at the international level is that made up of the different dependencies of the ILO. Subregional and Regional Offices participate in it, such as the ILO Office in Mexico, Central America, Southern Cone. A key role is played by CINTERFOR, the ILO International Training Centre in Turin and the ILO training department in Geneva.

Each one plays a different role in which INFOTEP can participate. The Mexico Office co-organises regular encounters for exchange of experiences in SIMAPRO in Mexico and Cuba. CINTERFOR participates in research and development of institutional proposals on SIMAPRO. The Turin Centre provides international presential and distance courses on the management of human resources by competencies where SIMAPRO is part of the curriculum. ILO Geneva interconnects initiatives such as SIMAPRO with the vision and policies regarding decent work that the organisation disseminates at the world level.

The recommendation is that INFOTEP tightens and participates more in these international NETWORKS. This allows Dominican experiences to become known and at the same time encourages INFOTEP to innovate and improve the programme continuously, with the aim of generating forcible contributions to the improvement of competitiveness and decent work in the country.