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A typology of “best practices” for a benchmarking process

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Abstract *Benchmarking is currently one of the most effective industrial performance improvement processes. For the company, it is a question of observing, adopting and/or adapting best practices, and this with the aim of improving the performance of some of its processes. The realization of benchmarking, whether it be internal or external, is not however without its difficulties. The first difficulty for the company is to manage to clearly define what a best practice is. We thus built a typology of best practices which could help to discern more effectively what could be relevant to exchange in benchmarking. The second difficulty for the company is to identify its best practices. The BPS method (Best Practice Specification) which we describe in this paper allows the company to locate and to specify the good practices likely to be transferred within the framework of benchmarking.*

Introduction

Among the approach which can help a company to improve its performance, the benchmarking is currently considered as one of the most effective: internal benchmarking when it is about a business comparison of performances between manufacturing units of the same group for example, or external benchmarking when it is about a comparison between different firms (compared to "best in class" for example).

Sometimes translated into French by *comparative improvement*, benchmarking consists in carrying out a comparative analysis of performances between companies (Maire and al, 1998) and rather aims for a company to observe, adopt and/or adapt the practices judged best, and this with the aim to improve the performance of a given business process (Camp, 1995).

The success of benchmarking is so great in France that CCI (CCI, 2003) estimates that 50 % of the first thousand companies use benchmarking regularly, and 80% of them regard it as an effective approach of change. And now, the benchmarking is used by small and medium-sized companies which see in this tool a means of carrying out significant improvement in performance quickly. Benchmarking is also regularly quoted (Brilman, 1998) (Vokurka and al, 2000) among the key tools in the best practices of management, and occupies a privileged place for some in a system of Total Quality Management (TQM) (Rahman, 2002):

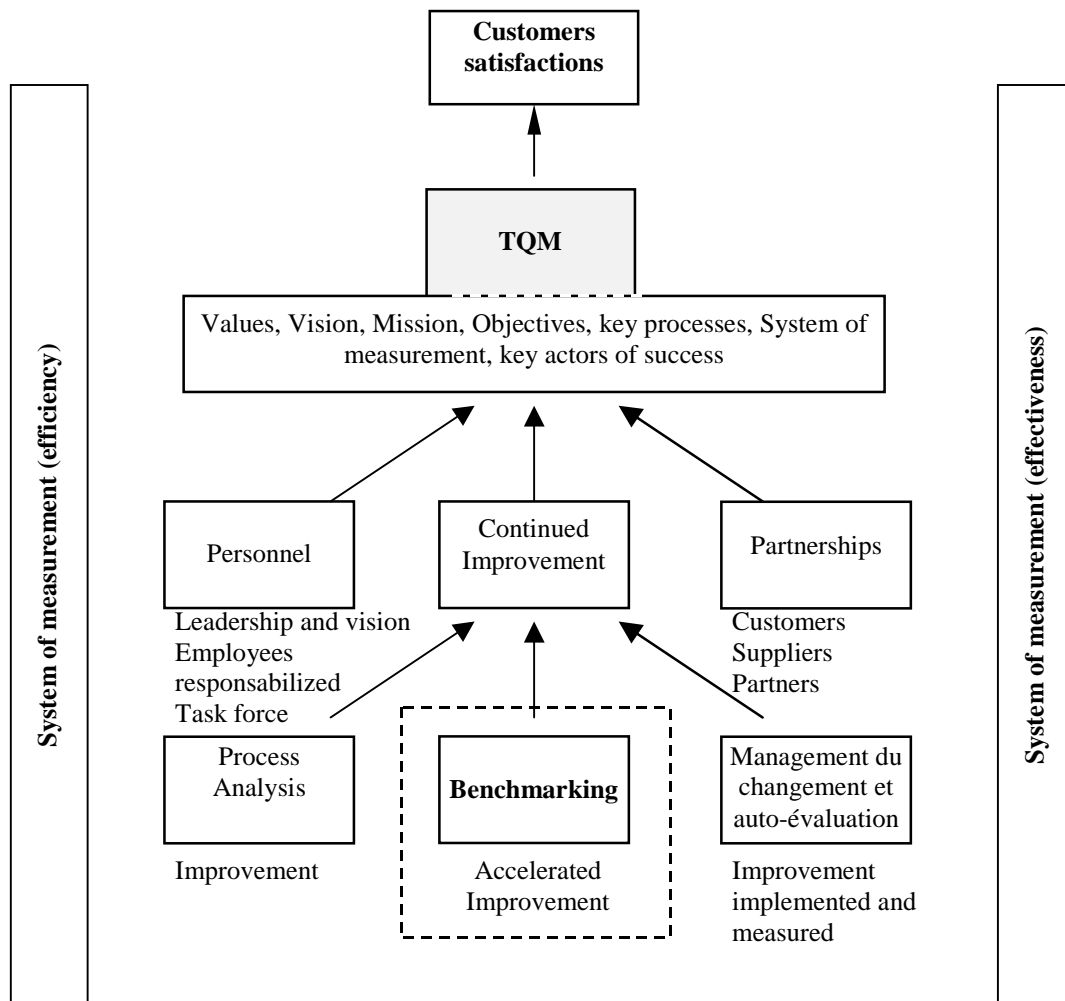


Figure 1: A model of Total Quality Management (TQM) (Balm, 1994)

However and in spite of this success, benchmarking does not always achieve the unanimity among those who have to select progress approach in their company. Many of them indeed explain that they did not wait for the arrival of benchmarking to compare their performances with their competitors with the aims of defining relevant improvement objectives. However, if this comparison to benchmarks has justified the interest to launch into the benchmarking, many companies consider that it is rather the search for "best practices", which is the origin of the performances, which must guide this choice. Thus, the process of benchmarking has passed from a "continuous and systematic process of evaluation of the products, services" (Camp, 1989) to a "continuous process of identification, learning and implementation of best practices in order to obtain competitive advantages, whether internal, external or generic" (Murray and al 1997). We will quickly recall the various stages of this evolution.

Many initiatives were launched to count, classify and propose best practices (www.apqc.com, www.bestpractices.com, etc), get several companies note the lack of methods enabling to effectively adopt and make the most of these best practices in order to improve their performance (O' Dell and al, 1998). Moreover, this is confirmed by the investigations carried out by the Benchmarking Service which show that the process of benchmarking has been for the last few years the top of the list of processes which are most « benchmarked ». There are two principal reasons at the origin of this difficulty for adapting these best practices (Bronet and al, 2003).

The first is to clearly define for a company what is « best practice » is, or more precisely, to determine the type of information or knowledge which is relevant to formalize to improve a given process. Does the term "practice" refer to the way of carrying out an activity? a process? the manner in which this process is made more powerful? Does it relate to the operational activities of the company? the more strategic activities? So many questions which we will come back to, and which show that the expression, "best practices" can lead to numerous different interpretations. Initially, for us it therefore appeared interesting to check if, among the many organizations currently delivering "best practices" whether there was consensus or not on what a "best practice" should include.

The other difficulty finally relates to the identification of these practices. And that just as much regards the entity side (companies, production plant, service, etc.) wishing to acquire these best practices, as the entity side having to provide them. On the one side in fact, the entity generally encounters difficulties in formulating its requirements about practices, because the objective of the benchmarking which it undertakes is precisely for it to discover new practices that are radically different from its usual practices and generally not yet considered. On the other side of the exchange, the entity generally has difficulties to identify, among its usual practices, those which was produce significant profits in a context of application different from own.

It also has the difficulty of knowing which practices have a real impact on its processes, as the effort has generally been concentrated on the identification of the practices at the origin of the problems of the process rather. These difficulties are found just as much in an external benchmarking as in an internal benchmarking where it's not just different companies but industrial entities from the same company which are involved in the exchange of these best practices. The approach that we describe later and which is based on the principle of QFD (Quality Function Deployment) tool contributes to improving these exchanges by targeting the transferable practices of an organization using successive deployment of matrices. We show how this method is currently used in the company TECUMSEH Europe. This company, European leader in the manufacture of the compressors and refrigerating units, carries out a deployment of its good practices, and more particularly those related to TPM (Total Productive Maintenance) and SPC (Statistical Process Control) process, on its four sites in France.

Benchmarking and Best Practices

Since its appearance in the Eighties in the field of industrial engineering, benchmarking has been the object of many books and articles published in scientific reviews and economic and financial press. But it should be admitted that if the benchmarking is unanimously presented as a means of evaluating the performance of a non-linear system (a company, a manufacture, a service, a work station, etc), a real consensus on its definition does not emerge from these contributions. Actually, the multiple definitions which were proposed express more various stages in the evolution of benchmarking. To summarize, benchmarking passed four important stages of evolution (see Figure 2):

- (1) Stage 1 concretizing the passage of a priority given to the benchmarks to a priority given to the action, i.e. the benchmarking ,
 - (2) Stage 2 concretizing the passage of a products/services performance evaluation to an evaluation of process,
- and, more recently:
- (3) Stage 3 conveying the transformation of an evaluation rather based on financial indicators towards an evaluation integrating measurements in connection with the satisfaction of the internal or external customers,
 - (4) Stage 4 conveying the passage of a comparative evaluation of process (operational benchmarking) to a comparative evaluation of strategies (strategic benchmarking).

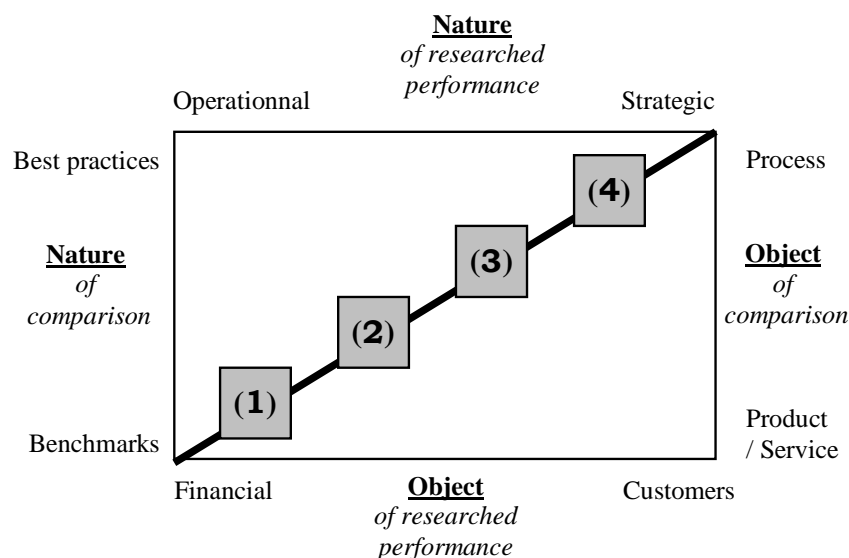


Figure 2 : The evolution of benchmarking

From benchmark to benchmarking

Originally the benchmarks correspond to measured values of performance of the software or systems, on which various products from different manufacturers can be assessed. The term has since been adopted in many other fields including that of industrial management. For example, a benchmark is defined in the Industrial Engineers Handbook as "*a physiological or biological value of reference to which a performance is compared*" : a customer lead time less than 10 days, a rate of final improvements and rejects lower than 1% of the actual sales, a rate of finished products "right 1st time" equal to 97%. By comparing itself to these benchmarks, a company can thus identify its weak points, prioritise objectives of improvement, and then carry out analyses to determine the methods best suited for this improvement.

Obviously, such an evaluation is only useful if it is renewed in time. To know its position compared to others at a given moment is of only limited interest. On the other hand, what is interesting is to see how this position evolves over time, if only to validate, and if necessary re-examine, the improvements in progress. This process is however not problem-free. One of the characteristics of all benchmarks is indeed to be very evolutionary. Not only should the values which it represents evolve considerably often in a short space of time, but its choice has to be frequently called into question. The increasingly demanding nature of customers, the appearance at increasingly constant intervals of new competitors on the markets, the accelerated development of new products, are many factors which lead to a readjustment and, in certain cases, to an almost permanent process of redefining the benchmarks to be used. As an example, if the capacity of a hard disk could give, a while ago, a rather significant idea of the performance of a microcomputer, it no longer appears among the benchmarks currently recommended to carry out a relevant comparison between data-processing equipment. It's the same thing for industry. It is this approach, which includes at the same time a follow-up of benchmarks, and their use within the framework of a comparative evaluation between firms, which some indicate by benchmarking.

A benchmarking, however, goes well beyond an evaluation using benchmarks. This is on what the American Productivity & Quality Centre (<http://www.apqc.org/best/whatis.cfm>) insists on : "*Benchmarking is not the same as Benchmark ! Benchmarks are performance measures. Benchmarking is action...*". Let us say, to simplify, that if the evaluation is significant, the analysis which results from this is just as important. The comparison of the performance compared to benchmarks must indeed lead the company to identify, understand, and then to apply, with the requirement of adapting them, the practices which are at the origin of the values for which a significant variation was noted. And this "action", to which the APQC refers, not only forms an integral part of a benchmarking process, just as much as the evaluation, but undoubtedly makes up its foundation. Indeed, what is the point in knowing that one is "worse" if one is not able to understand why the firm with whom one was compared is better than you ? Those who launched into in the experiment of the benchmarking, quickly realized. As a result, when at the beginning the majority of the practiced benchmarkings privileged the "benchmarks" compared with the "action" of improvement which resulted from it, the tendency was then reversed. Indeed a considerable number of companies placed, as the following evolution will confirm, **research and the adaptation of "best practices" at the heart of their process of benchmarking.**

Evaluation of products/services versus evaluation of process

The other significant evolution of the benchmarking is illustrated by the definition of the benchmarking suggested by Camp (Camp, 1989): "...research of the most powerful methods for a given activity, allowing to secure a superiority". This definition indeed stresses two characteristics of all benchmarking.

The first, it is that this approach is likely to generate a very significant leap in performance even if the company has to radically change some of its practices.

The second recalls that the research of the performance is not purely on the basis of a comparison and an evaluation of the products/services, but also and rather, on that

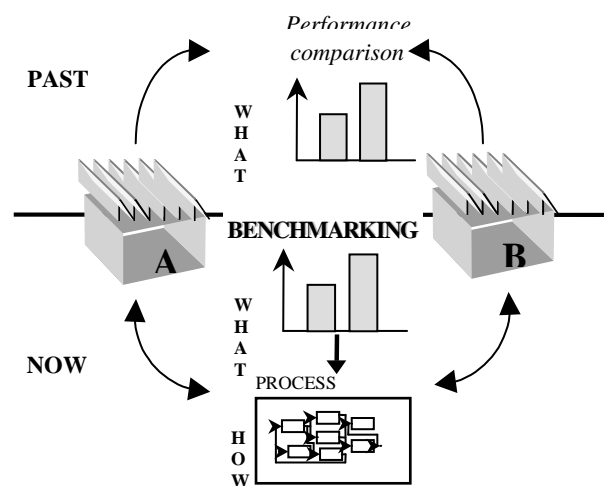


Figure 3: Benchmarking evolution

of the activities attached to these products/services. Camp thinks, the benchmarks must necessarily integrate measurements of performance of activities, that these contribute directly or not to the realization of the products/services. The process, being defined as a structured whole of finalized activities, benchmarking has thus naturally evolved to a role of comparative evaluation of process, at the same time relegating to a second role the evaluation of products/services (see Figure 3).

Many companies define benchmarking as a method of process analysis in which the best practices are identified and evaluated like models for improvement. Two reasons with this focus of benchmarking on the processes. Firstly, a comparative analysis of products/services forces the company to involve its competitors in the benchmarking, who are a priori not very inclined to confide in their best practices on the design or the manufacture of their products. Secondly, while considering in best case scenario that this company manages to understand and to adapt the practices of its competitors, the odds are that these same competitors have developed at the same time even more powerful new products and/or new practices.

The comparative analysis of process appears on the contrary more interesting. Firstly because, the processes to be compared have the advantage of being shared by entities, external or internal, while not necessarily carrying out similar products or services. Then, because these processes being generally perennial in time, lead to us hope that the practices which the benchmarking will help to implement, are adopted for a fairly long duration.

Many definitions also introduce the expression of "Best practice" thus reinforcing the idea **that all "best practices" share by a benchmarking must necessarily refer to a process.** This best practice thus indicates, (we will examine this later) a practice which was considered as a reference or good, whose success was shown on the improvement of the performance of a process.

Towards an evaluation integrating measurements of satisfaction of the customers

The concept of benchmarking also knew a new evolution related to the tendency of the companies to listen to the needs of their customers. Sentences such as "the customer is always right", "it is the customer who fixes the level of quality" or "after-sales has to be reinforced" are currently proposed in all management practices. This tendency was initially expressed by the progressive transformation of *quality*, with a small "q", which indicated the regularity of the product reliability, in *Quality*, with big "Q", to refer to the total quality from the point of view of the customer. In the same way, the *customer* who nominated the person or the organization who pays for the product or the service is transformed into *Customer* to include the entirety of the people of the chain of value between the company and the final customer. In the same manner, Balm (Balm 1994) thus proposed to upgrade benchmarking to Benchmarking with a big "B" by focusing on the need for developing comparative measurements which interest the internal and/or external customer, and this in addition to the traditional financial ratios. This brings to conclusion that **this type of measurement must occupy a privileged place in the identification and the evaluation of the "best practices"** of a benchmarking.

Towards a strategic benchmarking

More recent evolution still, some companies have gone from a benchmarking of an operational level, with the comparative analysis of process, to a strategic level consisting in detecting the global solutions able to obtain a competitive advantage (Rao and al 1996). The elements analyzed in this case refer to key stakes for the company, such as, for example, its strategic choices as regards skills management, the products differentiation, R&D development, or of cost reduction. Then, by taking again the usual stratification of the structures of organization, the current benchmarkings would rather **tend to privilege "best**

practices" of the strategic and/or tactical levels to "best practices" located at operational levels. That inevitably has a consequence on the type of best practices to privilege in an internal or external benchmarking.

Best Practices problematic

«Benchmarking is a process of identifying, sharing, and using knowledge and best practices » (Maire, 2002). Suitably adopted and/or adapted, the best identified practices can indeed generate for the company considerable profits of performance within a very short time. Until now, these best practices were rather required in famous companies ("best in class"). Now, it's rather the internal benchmarking that is privileged, i.e. the research and the share of good practices used in its own organization. At the origin of that, generally the same observation. If on one side of the company, we developed, tried out and adopted "good" overcome problems encountered, on the other side, although confronted with the same problems, we persist in being unaware of these practices, to the point of even sometimes reinventing them.

"If only we knew what we know! "(O'Dell and al 1998). Jerry Junkins, TI president, just summarizing a feeling shared by very numerous company directors. There is, even inside the company, a vast whole of knowledge, know-how and good practices, whose identification, transcription and division could be at the origin of spectacular improvements for the company.

Even unanimity to make state of the difficulty of defining what is a good practice, and more precisely, of determining the criteria which make it possible to conclude that a practice is a good practice to be deployed in the company. Initially because there is not uniqueness in the manner of approaching the company, and thus in the manner of describing its practices. Those which approach the company as an organization structured in decisional levels expect that the practices of the company describe how the decisions are made on each level and/or how the articulation takes place between these levels. Those which perceive the company organized around a system of decision, an information system and an operational system expect that the practices detail how the interactions between the elements are established constituting these systems. For others still, these practices must inform about the way in which the company consumes and manages its financial resources, technical or human. For others finally, and they are currently most numerous, the practices must refer to processes of management, with operational processes, processes of measurement or processes supports implement in the company.

Then, independently in the way in which one approaches the company, we indeed realize that some practices can cover very operational aspects of the company, whereas others will rather refer to strategic aspects. Lastly, the distinction which is established in the company between practices, good practices and best practices makes different levels of practices emerge.

So, it is indeed difficult to give a precise limit to this expression of "best practice" and that even if many definitions were proposed by it, such as for example:

"... a technique, a method, a procedure or a process which was implemented and which has improved the results of the entity."(EQPP, 1998) "...every practical, knowledge or know-how which showed its effectiveness or its value in part of the company and which is applicable to another part of the company." (PRAX, 2000) "A best practice is the process of finding and using ideas and strategies from outside your company and industry to improve performance in any given area." (Zahorsky, 2003).

It's difficult also to outline what is a "best practice" by examining those listed by some organizations in the field of Quality or Industrial Management¹. If practices are indeed proposed, these sites do not give in fact true indications on what makes it possible to compare them to "good practices". There is little assistance on the side of Knowledge Management (Prax 2000)(Dieng and al 2000), of which one of the functions is to however capitalize on the know-how of the company, and thus, to identify and formalize some practices. Indeed, unlike the benchmarking which rather targets the "macro-practical" held by the company (a process, a functional organization, a strategy), Knowledge Management on the other hand takes an interest in the "micro-practical" held by the individuals (a know-how, an clever way, a technique?). In any case, the distinction shows the need for operating a classification of the practices likely to be deployed in a company. That led us to propose a classification of these practices in order to show which are potentially the different types of transferable practices within the framework of a internal benchmarking. The classification that we propose subsequently is partly based on the one proposed by the Chevron company (O'Dell and al 1998).

A Best practices typology

The common factor in all these practices is that they refer to a business process, and more precisely, with the manner of making this process more powerful. We thus sought to establish a typology of these best practices. On the one hand according to the type of functions provided by a process (Axis - Action - Assistance) within the framework of a frequent operation (Plan A) or an unfrequentone operation (Plan B), and on the other hand, according to the type of means requested in the setting up of the process, whether it concerns means referring to the Knowledge of the company (its Assets) or means refered to its Know-How (its Abilities). Table I gives an example for each type of identifiable best practices.

This typology makes it possible to discern more effectively what best practice is, and that while going beyond a simple sentence. But it especially makes it possible for the company to ask itself questions about all of its practices to adopt and to improve a given process. On one side, it contributes to identifying the practices currently used by the company and able to be transferred at the time of an internal or external benchmarking. On the other, it helps the company to discover possible practices to be used and likely to be provided, within the framework of a "Tit for Tat" strategy, by the different partners of the benchmarking process concerned.

¹ www.bestinclass.com, www.benchmarkingreports.com, www.apqc.org, www.smthacker.co.uk, www.bestpracticdatabase.com, etc.

Table I : A typology of "best practices"

		<i>Functions</i>						
		AXIS*		ACTION		ASSISTANCE		
		Plan A	Plan B	Plan A	Plan B	Plan A	Plan B	
<i>Means</i>	ASSETS	<i>WHAT</i>						
		<i>HOW</i>						
		Material	A data base synthesizing the performance indicators	A spreadsheet to create a dynamic chart	A manufacturing machine	A conventional machine to reduce interruptions during production	A maintenance management software package	A folder which files maintenance carried out and that to come
	Structure	All production sites under the responsibility of the same director	Partnership with an auxiliary lawyer with the company to resolve litigations	A quality technician in each workshop	Same quality technician in two different workshops	A service of knowledge capitalization for the whole company	Partnership with a specialist consultant in the capitalization of knowledge	
	Methods	A coordinating meeting every week between the production sites	More frequent meetings when the workload increases	To sort by sampling from the produced parts	100% control with of the parts produced when a machine shows a CPK<1.33	Resolution of problems using to the 4*4 method	Use of SIX SIGMA method for a particular problem	
	ABILITIES	Management	To preach measurement as the federator of a good decision	Calculation of customers returns in term of the cost of no-quality	To request autonomy on a work station	To congratulate the operator who improves the productivity and quality of his work station	Incite the trainers to listen to the trainees needs	Form the trainees using real examples that the trainer has experienced
Collective skills		The ability of a management team to define a clear strategy	Solidarity in the event of an error of strategy	The capacity of design to quickly offer a new product	Ability of a engineering department to take account of the solutions "on shelf" to develop product further	Faculty of the supervisors to divide the workforce up between them according to the needs of each workshop	Solidarity by the loan of personnel between supervisors when there is a delay in production	
Individual skills		The capacity to direct several factories	Skills to carry out an exceptionally thorny meeting with METAPLAN method	Know-how on a manufacturing machine	Emergency know-how with the means available in production	Aptitude to repair any breakdown on a manufacturing machine	Ability of a person to create solutions for breakdowns (when the maintenance has not been carried regularly)	
			DECISION		PRODUCT or SERVICE		RESOURCES	

*Strategic or Tactic Axis

"Best practices" identification

The difficulties related to the realization of an internal benchmarking are not limited to problems of defining a best practice. The identification of the best practices is also one of the critical stages in any benchmarking process. From the typology of the best practices that we have established, it was thus necessary for us to propose a method which could help a company, on the one hand to locate its best practices for a given process, and on the other hand, to determine among these practices, those to transfer in priority at the moment of an internal benchmarking.

The customer's voice must play an essential role. It is indeed a question of making sure that the best practices which are identified have an effective contribution in terms of customer satisfaction for whom the outputs of the process considered are intended. The approach that we developed, baptized BPS (Best Practices Specification), is based on principles (see Figure 4) similar to those of a QFD (Quality Function Deployment) since it establishes, in the form of a successive deployment of matrices, a link between the customer's expectations of the process (WHAT) and the good practices used in this process (HOW). This link is built by the successive realization of four phases to lead to the specification of a series of practices (best practices) having a real and demonstrated effect on the customer's expectations of the process.

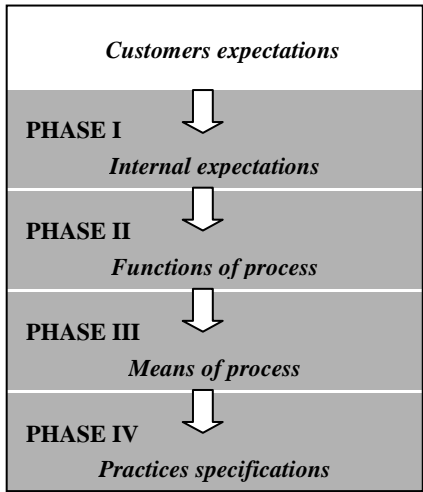


Figure 4 : principles of BPS

In the case of a QFD, customer expectations are transformed, at the time of the realization of functional specifications to technical specifications on the finished product. These specifications are then translated into specific parts (components, materials, information, etc) for which the characteristics which are essential to respect are defined. The processes necessary for obtaining these characteristics are then examined with the aim to represent customer expectations as manufacture operations. These operations are finally deployed into production or control specifications.

With BPS, it is on the process and not the finished product that the deployment takes place. Just like a product, the process must indeed be designed and must evolve so as to its customer's expectations as well as possible. The figures which follow illustrate the way in which the four phases of the deployment are connected.

Relationship between customer's expectations and internal expectations

The first phase of a BPS (see Figure 5) consists in creating the relationship between customer's expectations expressed by the final customers of the process and the group of specifications which have been defined in-house by the actors of the process. These specifications generally refer to requirements on outputs of the process, i.e. the results delivered by activities of the process. At this stage it is a question of making sure that these requirements are compatible with the voice of the customer of the process. It is then a question of establishing a hierarchy between these requirements so as to be able to then direct the research of the best practices towards those which have a significant incidence on the satisfaction of the customers of the process. The requirements considered to be fundamental, and which will guide the continuation of the deployment, are those which were declared as respected and whose relationship to the customer's expectations were declared as significant.

- Strong relationship
- ◎ Moderate relationship
- Weak relationship

		INTERNAL EXPECTATIONS		
		OUTPUT 1	O2	On
		Operative accomplished	Process controlled	
CUSTOMER'S EXPECTATIONS	...			
	No default on finished product	◎	●	
			
		Weighting		

Figure 5 : Phase I of BPS

PHASE II			FUNCTIONS		
			AXIS	ACTION	ASSISTANCE
INTERNAL EXPECTATIONS	...	Weighting
	Processus controlled		●	◎	○
	...				
			Weighting		

Figure 6 : Phase II of BPS

preceding phase, this phase leads to the description of the main functions, i.e. of the functions declared as performing well and whose interactions with the requirements defined in-house on the process were declared as significant.

Relationship between functions and means of process

The matrix built during the third phase (see Figure 7) describes the relationship between the fundamental functions of the process and all of the means required for this process. The latter are identified by traversing the axis Means defined by the typology of best practices : Assets (materials, organisational supports and methods which have been put into place to guarantee that the process runs smoothly), and Aptitudes (management techniques, individual or collective skills which, developed or acquired gradually, are useful for the improvement of the process). At the intersection of these functions and these means are the practices which have a significant link with the customer's expectations of the process examined. These practices will be specified in the next phase.

Relationship between internal expectations and functions of process

The second phase (see Figure 6) establishes the link between the fundamental specifications previously identified and the various functions to be assured by the process. The inventory of these functions takes place while following the axis Functions used in the typology of best practices: Axis (functions providing the strategic or tactical decisions of the process), Action (functions providing the products or services necessary to obtain the result of the process), Assistance (functions providing the resources useful for the realization of the process). On a principle similar to that of the

PHASE III			MEANS					
			ASSETS			ABILITIES		
FUNCTIONS	Weighting	To define the variation's process	◎		●			
							
			Weighting					

Figure 7 : Phase III of BPS

PHASE IV		PRACTICE SPECIFICATIONS						
		EVALUATION				PROCEDURE		
		Range	Incidence	Facility	Result	Plan A	Plan B	
MEANS	Methods	Methodology of measure	2	3	1	6	P1	P2
		Methodology of sampling	1	2	1	2
		...						

P1 : methodology with measuring instrument number c7b66

P2 : methodology with measuring instrument number b6h24

Figure 8 : Phase IV of BPS

Relationship between means and practices of process

First of all, the last phase (see Figure 8) makes it possible to describe the practices of the company within the framework of an operation routine in the process (Plan A) and/or within the framework of an exceptional or unusual operation in the process (Plan B). This stage then makes it possible to identify the best of these practices. Three measurements are used for that. The range (R) of a practice reveals the extent of its effect in the company : effect limited to the process

considered or, on the contrary, effect applying to the company's other processes. The incidence (I) reports the importance of the effects of the implementation of the practice on the global performance of the process. Finally Facility (F) gives an indication over time which separates the implementation of this practice from the observation of its first tangible results on the performance of the process. The practices considered to be best will thus be those which will maximize the value of $R \cdot I \cdot F$ between practices of comparable nature.

Conclusion

With the BPS method, the company thus has a system to help it to identify its "good" transferable practices within the framework of an internal benchmarking. This method is currently in the course of validation in TECUMSEH Europe on its Cessieu site (France). For the company it is a question of identifying the best practices currently put in place by the various sectors of manufacturing of the site on the process "To deploy progress effort (SPC and TPM)". The long term objective is for the company to apply these practices in all of the manufacturing sectors of the site, as well as those on the other three sites in the group.

Although the results of our research have to be improved and validated, the prospects for research currently relate to the acquisition of these best practices. Once identified, the company encounters some difficulties regarding the collection of information which will make its appropriation possible by others. Generally, this acquisition currently takes place starting from questionnaires, addressed to the whole entity which is at the origin of these best practices, and generally collecting values of indicators considered to be significant of the performance obtained. If these data are significant to collect, in no way do they describe the practices which are at the origin. It is a question in particular of seeing how these best practices could be represented so as to be more easily transferable, with the objective, if possible, to go beyond a simple textual statement of these practices, as is generally the case.

It is obvious that most of the information that people require to implement a new practice cannot be transcribed and even less codified. The access to common data bases, just as a limited transmission of the "explicit" information is not enough. Many methods of knowledge acquisition have been proposed, particularly in the field of cognitive genius. As an example, GAMETH (Grunstein, 2000), KADS (Hickman, 1989), MKSM (Ermine, 2001), MACAO (Aussenac, 1989) and MEREX (Dieng, 2000). However these models appear badly adapted to a context of transferring knowledge within a company. The models suggested in the field of Artificial Intelligence very largely exceed for example the original aim, since they try to represent knowledge, not only in order to clarify them, but more with the objective of being able to use them in an automated way (automatic decision-making, automatic generation of new knowledge...).

The next objective of our work will be to propose a method of assistance to the acquisition and the representation of these practices with the aim of facilitating their transfer. From the definition of the principal characteristics of industrial knowledge to exchange, it will be a question in particular of studying if certain models currently proposed to represent knowledge can be used for the acquisition and the formalization of these best industrial practices within the framework of an internal benchmarking. It will also be a question of studying the mechanisms likely to support the appropriation and the training of these best practices.

REFERENCES

Aussenac, N. (1989), *Conception d'une méthodologie et d'un outil d'acquisition de connaissances expertes*, Ph.D. Thesis, Université Paul Sabatier, Toulouse.

Balm, G.J (1994), *Evaluer et améliorer ses performances - Le Benchmarking*, Afnor Gestion Qualité (pour l'édition française), Paris.

- Brilman J. (1998), *Les meilleures pratiques de management - Au cœur de la performance*, Les Editions d'Organisation, Paris.
- Bronet, V., and Maire, J.L. (2003), *Best practices for processes improvement*, 5^{ème} Congrès International Interdisciplinaire -Qualité et Sûreté de Fonctionnement - Qualita, Nancy.
- Camp, R.C. (1989), *Benchmarking : The Search for Industry Best Practices that Lead to Superior Performance*, Quality Press/ASQC, Milwaukee, Wisconsin, 299 p.
- Camp, R.C. (1995), *Business Process Benchmarking - Finding and Implementing Best Practices*, ASQC Quality Press, 464 p.
- CCI, Chambre de Commerce et d'Industrie (2003), *Le benchmarking*, available at: <http://www.troyes.cci.fr/fr/strategies/innov/benchmarking.html>
- Zahorsky, D. (2003), *Small Business Best Practice Benchmarking – How to effectively borrow ideas, strategies and tactics*, available at: <http://sbinformation.about.com/library/weekly/aa011903a.htm>
- Dieng, R., Corby, O., Gibain, A., Golbiowska, J., Matta, N. (2000), *Méthodes et outils pour la gestion des connaissances*, Editions Dunod, Paris.
- Ermine, J.L. (2001), *Ingénierie et capitalisation des connaissances*, Editions Hermes.
- Grunstein M. (2000), *Repérer et mettre en valeur les connaissances cruciales pour l'entreprise*, 10^{ème} Congrès International de l'AFAV, Paris.
- Hickman, F.R. (1989), *Analysis for knowledge based systems*, A practical guide to the KADS methodology, Ellis Horwood, New York.
- Maire, J.L. and Büyüközkan G. (1998), *Benchmarking Process Formalization and a Case Study*, MCB University Press, *Benchmarking for Quality Management and Technology : An International Journal*, Vol. 5, Issue 2, pp. 101-125.
- Maire J.L. (2002), *A model of characterization of the performance for a process of benchmarking*, *BENCHMARKING : An International Journal (BIJ)*, MCB University Press, Vol 9, Issue 5, pp. 506-520.
- O'Dell, C., Jackson Grayson, C. (1998), *If we only knew what we know*, The free press.
- Prax J.Y. (2000), *Le guide du Knowledge Management*, Editions Dunod, Paris.
- Rahman, S. (2002), *Leadership and HR focus in TQM research in Australia: an assessment and agenda*, *BENCHMARKING : An International Journal (BIJ)*, MCB University Press, Vol 9, Issue 5, pp. 485-505.
- Rao, L.P., Dambolena, I., Kapp, R.J., Martin, J., Rafii F. and Schlesinger P.F. (1996), *Total Quality Management: A Cross Functional Perspective*, John Wiley and Sons, New York.
- EQQP (1998), *The European Quality Promotion Policy (European Commission DGIII Industry) (1998), Benchmarking Introduction and main principles*, Quality series, number 7.
- Vokurka, R and Stading, G.L. and Brazeal, J. (2000), *A comparative analysis of national and regional quality awards*, Quality Progress, August 2000.