EXCHANGE FOR POLICIES

FOR HIGHER PRODUCTIVITY OF ENTERPRISES THROUGH APPLICATION OF ADVANCED MANAGEMENT SYSTEMS AND TOOLS

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Abstract:

In global context of economic crisis and regional political instability, we are observing shrunk consuming markets, lower purchase power and scarce material supplying sources which lead to increasing pressure of competition on Vietnamese enterprises. Innovation of mind-set in order to enhance productivity, quality and efficiency of activities through implementation of advanced management technologies is found out among effective measures applied by successful enterprises to pass over the crisis time.

In Vietnam, since 1996, in line with a large mobilization for the first Decade for Quality, enterprises have got familiar with the basic quality enhancement of management systems and tools and this application had set up a background for higher awareness and a good pre-condition for improving and enhancing the productivity. The national program "Enhancing productivity and quality of Vietnam goods up to 2020" made a large mark stone in promotion of diversified application of systems, models and tools for higher productivity and quality over the whole country. The program attracted the participation of thousands of enterprises of various sizes in numerous sectors and achieved considerable results. The application of improved systems, models and tools has made contributions to enhance productivity, quality and competitiveness of Vietnamese enterprises which are natural demands in context of global economic integration.

Keywords: *Enterprise; Management technology; Management model; Improved tool; Productivity.*

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1. Introduction

In global context of economic crisis and regional political instability, we are observing shrunk consuming markets, lower purchase power and scarce material supplying sources which lead to increase pressure of competition on Vietnamese enterprises. Domestic financial difficulties, incomplete

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economic institutional framework, low investment efficiency and weak competitiveness, all of these being gathered in context of intensified entry of globally strong trade names into local markets, rise higher than ever the competition pressure on local enterprises.

Experiences of developed countries as well as successful multi-national groups to cope with and to pass over crisis show that the development requirements force enterprises to adapt pre-actively to changes and to choose wisely their own ways and to use optimally their available resources.

Innovation of mind-set oriented to get higher productivity, quality and efficiency of activities through implementation of advanced management technologies of the world is one of effective solutions which were applied by successful enterprises.

Productivity-quality campaigns implemented by many nations in the region, such as Japan (since 1955), Singapore (since 1981), Malaysia and others made contributions enhance competitiveness of enterprises and to increase national productivity considerably. These results were achieved by enterprises as outcomes of a process of studies and application of advanced management methods and productivity improvement on basis of international experiences which were adjusted and adapted to fit their own business culture and specific features. In Asia, Asian Productivity Organization (APO) is a pioneer in activities of study and promotion of application of models gained in the above noted nations for other countries in the region. Studies made by APO are highly practical since they gather experiences of real application of the world leading organizations in member states such as Japan, South Korea, Singapore and others.

In Vietnam, since 1996, in line with large mobilization for the first Decade for Quality (1996-2005), the community of enterprises gets familiar with many novelties such as ISO 9000, 5S and others. International business environment requires more attention for application of international standard management models and tools, in particular in those enterprises who export goods to markets with tough standards of quality, health safety and environment protection.

However, the rate of those enterprises who apply these models and tools remains low. Over the whole country, only 10,000 organizations get the certificates of ISO 9001. The integration of systems and the use of combined tools for continuous improvement of systems and for higher efficiency of activities are modestly applied in some enterprises during recent years. This paper targets to present an overview of management systems, models and tools, and actions to improve productivity and quality among enterprises in the world today as well as preliminary results gained

through the Government's support programs for higher productivity and quality. The paper also delivers some recommendations for promotion of application of improved management systems and tools for higher productivity and quality in future time.

2. Enhancement of productivity of enterprises through application of improved management systems, models and tools

The productivity is a notion to indicate the relation between inputs and outputs of a process. In mathematical form, the productivity is presented as

$$\text{Productivity} = \frac{\text{Outputs}}{\text{Inputs}}$$

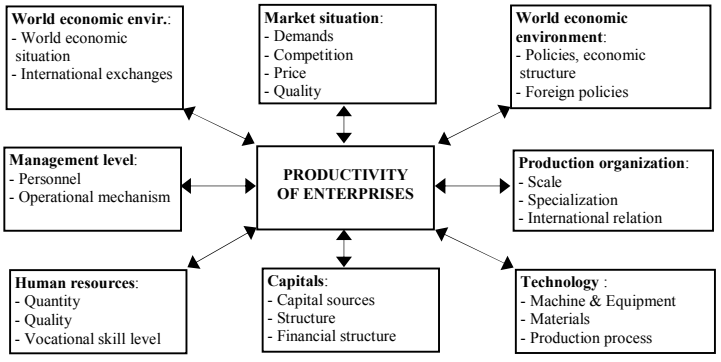
This notion indicates well the volume of outputs (in units) produced from one unit of inputs. In this presentation, outputs are understood as final products of a process which may be goods or services. Inputs are resources used for manufacture of goods or provision of services such as labors (human resources), lands, capitals (machines, equipment) and etc.

Since there exist diversified types of inputs, then, in practice of calculation, productivity is reflected in two categories of indices: (i) partial productivity index (which is the rate between outputs and a single type of inputs such as labor productivity, capital productivity), and (ii) total productivity index (which is the rate between outputs and a combination of certain inputs such as TFP). Various productivity indices reflect different internal aspects and have different advantages-disadvantages through process of calculation and use. It is worth to note that productivity indices are not independent each from other, e.g. it is possible to note that the growth rate of TFP has dominating roles in impacts to labor productivity. There also exists a close link between capital productivity and labor productivity, namely the efficiency rate of capital use reflects not only a higher or lower rate of achieved capital productivity but also achieved labor productivity. In fact, an additional investment of capitals for production might lead to higher capital productivity or, even, lower one but clearly the additional capitals and their use for labors would increase considerably labor productivity. However, the index which is considered as easily computed and largely used one is labor productivity.

In this optics, the productivity reflects the competitiveness of enterprises. The higher productivity the higher is the market competitiveness of enterprises. Therefore, in context of tough competition, the enhancement of productivity would help enterprises not only to survive market disturbances but also to develop more strongly.

A higher productivity of enterprises can come through numerous and various ways including policies from State authority agencies and efforts of enterprises. The following scheme is focused on main channels where enterprises easily enhance their own productivity.

In global, the productivity of enterprises gets impact from many different factors as described in the following scheme.



Source: UNIDO, 2003

- Labor: It is the first and most important factor to impact productivity. Productivity is subject to many elements including cultural level, vocational level, skills and capacities of labor forces. Without having well developed human resources, we face difficulties to get successful and effective application of capitals and technologies;
- Capitals and technology: Capitals are seen through elements such as technologies, machines, equipment and materials. The capitals well secured, timely provided and effectively used play important roles to impact productivity;
- Management level: The high productivity would be more important in its full and effective coordination with management, labors and technologies. This can be understood as needs to create the best environment for coordination between management and labors;
- Level and capacities to organize production processes of every enterprise: They cause strong impacts to productivity through the identification of development directions, investment alternatives, selection of technologies, management structure and reasonable arrangement of production lines for maximal benefits of advantages, reduction of costs and enhancement of productivity.

So, the above scheme shows that the innovation of organizational structure, management systems and production systems would promote highly the

productivity of enterprises. One of the ways to intensify the innovation is the application of improved models, systems and tools for higher productivity and quality.

3. Overview of improved models, systems and tools for higher productivity and quality

During recent years, management systems as well as models and tools for higher productivity and quality were continuously developed in the world. Management systems, models and tools can be divided into 4 basic groups as follows: (i) management systems on basis of international standards, (ii) improved tools for productivity and quality, (iii) management systems integrating standards, improved tools for productivity and quality, and (iv) models of excellent activities and sustainable development. The following presentation shows an overview summary of systems, models and tools for higher productivity and quality.

3.1. Management systems on basis of international standards

Management systems on basis of ISO issued international standards include: ISO 9001 for quality management systems in sectors of production and service, ISO 29001 for quality management systems in oil-gas industry sector, ISO/TS 16949 in sector of car production industry and support industries, TL 9000 for sector of telecommunication, ISO 13485 for medical equipment, ISO/IEC 17025 for quality management systems of laboratories, ISO 22000 for management systems in sector of food safety, HACCP and GMP, ISO 26000/SA 8000 for social responsibilities, OHSAS 18001 for management systems in sector of vocational safety and health, ISO 31000 for management systems of risks, ISO 14001 for management systems of environment, ISO 27001 for management systems of information safety, ISO 50001 for management systems in sector of energy and etc.

Management systems on basis of international standards were introduced largely in Vietnam since 1995 with the kick-off by ISO 9000 and then followed by other standard systems such as ISO 14000, ISO 22000 and others. According to non-official statistic data, in Vietnam there are almost 10,000 organizations granted with the certificates for standards of management systems. ISO 9000 certificates make the majority among these standard management systems. During recent 20 years, many enterprises get familiar with ISO 9000 and successful in its application. ISO 9000 is considered as background for management activities of many enterprises, business services and public services. Certificate granting organizations, consulting experts, evaluating experts of quality management systems and environment management systems, local and foreign, experience a fast

growth in number and an improvement in quality. These moves made important contributions to escalating and guiding the application, providing and sharing information and experience through forums, books, articles, electronic information pages and etc. However, if comparing the number of enterprises which get granted with certificates of management systems to the number of existing enterprises, we would see a low rate (about 300,000 according to non-official statistical data) which does not exceed 3.5%. Majority of certificate granted enterprises are among large-medium size enterprises and FDI enterprises. Small-medium enterprises keep a minor rate.

Other management systems on basis of standards such as ISO 14000, ISO 22000, ISO/TS 16949, ISO 27000, ISO 13485 do not yet get large attention and application by enterprises and then the number of enterprises who get grated with these certificates remains very limited. According to statistic data by International Standards Organization (ISO) gathered during the 12th survey (2011) of application of standards, 500 enterprises were granted with ISO 14000, 198 enterprises were granted with ISO 22000, 96 enterprises were granted with ISO/TS 16949, 14 enterprises were granted with ISO 13485 and no enterprises were granted with ISO 50001.

3.2. Improved tools for higher productivity and quality

The group of improved tools for higher productivity and quality includes 5S, Kaizen and QCC/IQC. Statistic tools are used for quality control and improvement, improvement recommendation (KSS), diagnostic techniques for enterprises, lean production, reduction of defects (Six Sigma), balance score cards (BSC), key performance indicators (KPI), maintenance of total equipment efficiency (TPM), evaluation of efficiency of employees, client relation management (CRM), knowledge management (KM) and etc.

Tools for higher productivity and quality were introduced in Vietnam since 1996 together with standards based management systems. While indicators of management systems were accepted by Vietnamese enterprises and then tested and applied largely in line with the set up of certificate granting organizations and local-foreign consulting organizations, tools for higher productivity and quality were introduced mainly through training courses and pilot projects supported by international experts (initial stages) and domestic experts (actual time).

Some tools most largely introduced and pilot applied in Vietnam include 5S, QCC and 7 statistic tools. However, the implementation of application remains very modest. Programs of application conducted in actual pilot projects remain in a few enterprises and localities. In addition, the

collection of statistic data of enterprises remains also limited due to related problems such as the data were not collected fully in terms of quantity and efficiency level as well as capacities to maintain activities.

During recent time, some tools for higher productivity and quality were also introduced such as KPI, Lean Six Sigma, TPM and others through workshops to propagate documentation as well as pilot projects. Some enterprises which have FDI capitals in Vietnam introduced the application being supported by mother companies and overseas experts such as Ford Vietnam, Adidas, Samsung Vietnam, Unilever and others while local enterprises do not yet get information and training guidelines for these effective tools for higher productivity and quality.

3.3. Integrated management systems

Actually, due to management requirements to meet simultaneously increasing needs, more and more organizations have applied at the same time many standards and management systems such as ISO 9001 for quality management systems, management systems for specific sectors, e.g. ISO/TS 16949 for car production industry, ISO/TS 29001 for oil-gas industry, ISO 13485 for medical equipment; ISO 14001 for environment management systems, ISO/IEC 27001 for information security, ISO 22000 for food safety, OHSAS 18001 for vocational safety and health, ISO/IEC 17025 for management systems of laboratories and re-calibration, ISO 15189 for medical laboratories and etc.

In addition, many organizations still apply tools for higher productivity and quality including some typical tools such as good practice of 5S, maintenance of total equipment efficiency (TPM), lean production systems, key performance indicators system (KPIs) and etc. Now many organizations apply and operate on basis of two or more management systems and tools for higher productivity and quality and they have needs for an integrated management system which can be run in simple and effective way but has to meet related requirements.

Integrated management systems can bring in many benefits. From strategy and management vision, an integrated management system means a clear and consistent platform for all the aspects of the organization where its functional units get focused on effective improvement of activities of the organization. The organization has also clearly indicated financial benefits when it applies the integrated management systems, namely simplified operation, lower bureaucracy, reduction of overlapping individual systems, reduction of waste, reduction of human resources required for construction, maintenance and operation of the system.

The level of integration of management systems of different enterprises depends on needs and capacities for application of the organizations. The main forms of integration of management systems can be summarized as follows:

a) Integration of standards based management systems

This form of integration can be made from 2 or more standard systems, e.g., from 2 systems: ISO 9001&ISO 27001, ISO 90001&ISO 140001, or from 3 systems: ISO 9001&ISO 140001&ISO 27001, or from 4 systems: ISO 9001&ISO 140001&ISO 27001&ISO50001.

In order to meet increasing interests for integrating management systems and risk management systems of organizations, Standard system PAS 99 needs to identify common requirements of management systems. PAS 99 can be used as framework for realization of common requirements of standards applied to management systems or technical norms in terms of ways to integrate. PAS 99 is designed to target organizations which apply 2 or more standard management systems. The application of PAS 99 is oriented to simplify the simultaneous application of multiple management systems as well as related assessment of compatibility.

Actually, PAS 99 is still quite novel for Vietnamese enterprises. In close future, it is required to conduct training courses to propagate and guide enterprises for access and implementation of these international standards. Training courses are also required for preparation of consulting experts as well as compatibility assessment of management systems.

b) Integration of standard based management systems with models and tools for higher productivity and quality

Standard based management systems and models and tools for higher productivity and quality (such as 5S, 7 statistical tools, TPM, Lean, Six Sigma, KPIs and etc.) applied at the same time would support each other in management and operation processes of organizations. Standard based management systems are background for implementation of non-standard management systems and the tools would make management systems more improved.

We are experiencing a rising trend of needs to integrate standard based management systems and models and tools for higher productivity and quality since actually enterprises are oriented to the optimal use of resources and high efficiency of activities. However, this integration requires the availability of experts experienced and enriched with professional knowledge of management models and tools. Actually

Vietnam experiences a lack of these experts and remains dependent on high cost overseas experts. In close future, the productivity and quality programs should be focused on training and developing this team of experts and on building methods for integration of management systems for the coming years.

3.4. Models of excellent activities and sustainable development

Business Excellence Models (BE) were set up and applied largely in many countries. National quality awards are granted in order to honour organizations/enterprises which give major contributions for higher quality. As example, some of these excellent models and quality awards delivered in leading countries can be listed here including Deming Award, Malcolm Baldrige Award (US National quality awards), European Quality Award and International Asia-Pacific Quality Award.

Quality awards are granted on basis of criteria and models of advanced management principles and methods. Particularly, quality awards remain consistent with principles of national quality policies (which may be already officially set up or preliminarily introduced in strategic plans of socio-economic development of the countries). Practical activities of BE models and quality awards in various countries and regions show that quality awards which go beyond limits of quality contests (which are numerous actually) are effective tools to assist enterprises in their self-assessment of activities. The comparison to BE models would help enterprises to set up their own road-maps for better improvement and higher competitiveness, and then application of best practices.

Models and selection criteria of quality awards are all oriented to enhance management quality. The criteria are divided into two groups of categories:

- Group 1 includes those categories which reflect capacities, namely: i) Roles of leaders, ii) Policies and strategies, iii) Human resources, iv) Partnership and resources, and v) Processes;
- Group 2 includes those categories which reflect results, namely: i) Satisfaction of consumers, ii) Satisfaction of workers, iii) Influences to the society, and iv) Main results of activities.

The contents of criteria and the principles of model setting-up of a quality award reflect the philosophy of management quality and, on basis of studies and consideration of that, enterprises would make decisions to select them as tools for management and improvement of their activities.

When building their management systems on basis of models or quality awards, enterprises would mobilize maximally their own resources to meet

the criteria of awards. For a better streamlined implementation of improvement process, every award criterion should be clearly indicated and quantitatively valuated. As usual, the criteria would be concretized by items and valuated by scores (the total scores can be 1,000 points).

In Vietnam, enterprises get familiar with BE models since 1996 through the National Quality Award. It is an annual national award delivered by the Prime Minister to honour organizations and enterprises for outstanding achievements of quality in production, business and services to enhance the market position of Vietnamese products. However, in order to make the BE models promote the roles of integrated management systems for higher productivity and quality we need to conduct more activities to share experiences, to train application methods and to enhance the roles of enterprises in planning, applying and valuating their own activities in line with award criteria.

Regarding Vietnamese enterprises as well as other enterprises in the world, BE models are considered as orientations for sustainable development and background for advanced management. Actually, majority of enterprises in Vietnam which apply for awards are of big and medium size. They have already their own backgrounds for management and application of basic management systems and tools for higher productivity and quality. Vietnamese small and medium size enterprises, if wanting to enhance their competitiveness and integration with international markets, have no ways other than approaching them internationally. BE models would be one of solutions to help enterprises to get backgrounds to identify orientations and to set up plans, methods and benchmarks with regional and international level enterprises. By this way they could enhance the productivity and quality of their own products.

4. Support programs of the Government for enterprises to apply systems, models and tools for higher productivity and quality

For purpose to enhance productivity and quality and competitiveness of enterprises, the Prime Minister had issued, on 21st May 2010, Decision No. 712/QD-TTg for approval of the National Program "Enhancing productivity and quality of Vietnam goods up to 2020" (called shortly Program 712), and on 22nd February 2012, Decision No. 225/QD-TTg for approval of the Project "Promoting activities for productivity and quality", a component of Program 712. The promotion and support for enterprises to apply scientific-technical progresses and technological innovation, and systems, models and tools for higher productivity and quality are one of the main contents of Program 712 which put targets to have 40,000 enterprises (by 2015) and 60,000 (by 2020) to be trained for application.

Program 712 gets implemented since 2012 and 1,000 enterprises over the whole country received guidelines for application of systems, models and tools for higher productivity and quality[2]. The application of systems, models and tools for higher productivity and quality gained in initial stages certain active results with the growth rate of 10-30% of productivity after 3-6 months of implementation. In addition to the evidence of productivity growth (through measurements made before and after application of improvement solutions), enterprises have built core teams of specialists with full knowledge and skills to maintain and improve continuously management systems and to enhance awareness by workers on improvement of productivity and quality[3].

Some actual results of enterprises which apply systems, models and tools of higher productivity and quality can be listed as follows:

4.1. Projects for higher productivity in textile-garment sector

The common situation observed in this sector is low productivity, high rate of defects and inefficient use of resources. The main reasons come from the fact that production managers of textile-garment enterprises are not well trained and fully instructed about production management procedure and application of tools such as ISO 9001, SA8000 and etc. Within 3 months, the implementation and application of lean management methods conducted in Hung Nhan Garment Ltd. Co. (Subsidiary of Duc Giang Garment Corporation, Thai Binh Province), Hanoi Textile-Garment Corporation (HANOSIMEX), Nam Ha Garment JSC (Nam Dinh Province) produced the following results:

1) Hung Nhan Garment Ltd. Co.

- Clearance time for detected defects was reduced from 20 second down to 3 second; stocks on production lines were reduced from 2,000 products down to less than 400 products;
- Production time from entry to production lines to entry to warehouses was reduced from 2.5 days down to 0.5 day; no stocks was observed at end of production lines;
- Productivity growth was increased by 15% - 30%.

2) Nam Ha Garment JSC

[2] Report, Implementing Committee Conference, National Program 712, Nov. 2013

[3] Final Report, Application and propagation of systems, models and tools for higher productivity and quality, 2012-2013 and 2013-2014 periods.

- Project 01 "Improvement of time and quality of check procedure": Higher productivity of tissue check was achieved from a rate of 7.6 m/min down to 10.14 m/min. Before implementation of the project, averagely 10 tissue rolls remain partially used at end of shifts and then workers have regularly to work extra-time to meet production schedules. After implementation of the project, with no change made in number of workers, all the rolls were used fully and then no extra-time works of workers were needed to meet production schedules;
- Project 02 "Shorted time for prototype fabrication": Time for prototype fabrication was reduced from 44 hours down to 32 hours, with no change made in number of workers;
- Project 03 "Shorted time for cutting semi-products": Time to cut semi-products was reduced from 320 min/cutting table to 226 min/cutting table, the number of workers was reduced by 2 full-time workers and 8 part-time workers;
- Project 04 "Enhanced labor productivity": Labor productivity in sewing workshops was increased by 20-30%, defective rate was reduced from 10% down to 5%, with no change made in number of workers. Defective rate of finished products was lower than 2%. Uncompleted semi-products seen at end of working days were limited and reduced from 1,000 items down to 670 items (equivalent to planned one-working day volume).

4.2. Projects for higher productivity in supporting industry sector

Enterprises in supporting industry sector of Vietnam are private owned and small-medium sized ones in majority of cases. They experience strong competition pressure when entering supply chain markets, particularly in some aspects such as respected delivery time, restricted PPM rate (Parts per Million Defective) and annually reduced prices. For purpose of survival and development, many enterprises took pre-active investment measures for technological innovation and applied management methods for optimization of human resources. Hereunder some initial improvement results of the 3 enterprises which took part in the program are listed.

1) CNC-ViNa Company, Hanoi:

- Rate of schedule respected delivery of goods was increased by 19%;
- Rate of schedule respected assembly of machines was increased from 22% up to 64% ;

- Rate of schedule respected assembly of electrical items was increased from 11% up to 55%;
- Rate of warehouse stocks got lower than 20% and the value of warehouse stocks was reduced from VND1,586 billion/month down to VND1,216 billion/month.

2) Duc Viet Manufacturing Company (DVC), Bac Ninh Province:

- Efficiency rate of offset print lines was increased from 47 % up to 70%;
- Efficiency rate of OEM packaging unit was increased from 45% up to 87%;
- Efficiency rate of duplicating lines was increased from 78.09% up to 86.7%;
- Labor productivity was increased more than 80%. Average production volume of an individual worker of the packaging unit was increased from 3,252 items/8h up to 5,957 items/8h with the annual save of VND600 million.

3) Giai Phong Rubber Company, Hung Yen Province:

- Average manufacturing time of one plate was reduced from 68.7 min./plate down to 42.4 min./plate;
- Average mould setting time was reduced from 21.63 min./mould down to 14.15 min./mould;
- Main material stocks were reduced by 50% y-o-y (converted to equivalent demand level y-o-y).

4.3. Projects for higher productivity and quality in service sector

In service sector, the application of advanced solutions produces also very considerable results for higher productivity and quality. Some of them can be listed here, namely Northern Area Office, Vietnam Airlines and Thu Duc Hospital, Hochiminh City.

1) Northern Area Offices, Vietnam Airlines

- Activities for preparation of internal reports have got improved. The rate of respected deadline for submission of reports was recorded as 98%, in comparison to the initially marked target of 100% and the Sigma level was raised from 0.32 to 2.59. The time for preparation of weekly reports comes down from 251 minutes to 251 minutes (the initially marked target was 250 minutes) and the Sigma level was raised from 1.32 up to

1.42. The number of reports was also reduced from 2 reports/week (before implementation) down to 1 report/week (after implementation)

- Ticketing offices No. 1 and No. 2: Before implementation of the project, the average waiting time of passengers was 4 -5 minutes, in some particular cases the waiting time came up to 30 minutes. The service quality was not uniformly observed. After implementation of the project, there were no more passengers to have to wait more than 30 minutes. The rate of passengers to have to wait less than 4 minutes was increased from 70% up to 80% which makes 82% of the initially marked targets. The rate of passengers to be served within 17 minutes was increased from 67% up to 80% which makes 83% of the initially marked targets;
- Cargo office: The rate of no-bill export errors leading to CCA procedure was reduced from 1.44% down to 0.4% (the initially marked target was 0.8%). The annual saving volume was VND45,812,256 in comparison to the initially marked targets to reduce CCA fees from VND1,334,000 per month (79 CCA) down to VND1,934,000 per month (47 CCA) which is equivalent to VND26,178,432 per year. There are higher accuracy and information for AWB issue, namely the achieved rate was 79/6,701 in comparison to initially marked target 107/6,616. The highest time of AWB issue was also reduced from 21 minute level to the average level of 4 minutes;
- Rate of 96.5% of recorded calls with all the indicators of Client Care had been achieved in comparison to the previously noted rate of 88%. Client Care and operation errors were detected and recovered in time without causing troubles to clients and other misunderstandings between clients and operational staff;

2) Thu Duc Hospital, Hochiminh City

After 3 months of implementation of the project, numerous improvements were made in process of provision of clinic and treatment services.

- The time for drug delivery was reduced from 29 minutes down to 20 minutes and 15 minutes respectively for the two types of prescriptions.
- The number of completed prescriptions was increased from 1,904 up to 2,476 with the unchanged number of 18 service staffs per day.
- The time for patients to pass from emergency entry to operational services at departments was reduced from 123 minutes to 60 minutes per patient;
- The waiting time for results of biochemical-immunological analysis was reduced from 120 minutes down to 60 minutes.

In line with achieved positive results, the application of systems, models and tools for higher productivity and quality in enterprises has certain shortages and not that every enterprise can be successful in application without having right preparation and awareness. Some difficulties enterprises may face can be listed as follows:

- Shortage of necessary knowledge to select systems, models and tools for higher productivity and quality to fit conditions of enterprises;
- Impossibility to keep leaders of enterprises committed and interested further after the end of projects which leads to difficulties to maintain the application and improvement of systems, models and tools for higher productivity and quality. Regarding standard based management systems, many leaders of enterprises are interested to guide closely the implementation only up to the delivery of certificates and therefore it is difficult to hold on successfully regular operation of introduced systems, models and tools. Regarding non-standard models and tools, it is quite difficult to escalate largely them for extended application in all aspects of activities of enterprises;
- Improvement activities are not really bound to strategic focuses, priorities and routine business activities of enterprises then they could not lead to large escalation;
- No personnel is clearly appointed to be in charge and then well trained for knowledge, methods and skills of application, maintenance and improvement of systems. Teams which were set up for initial stages of application have various functions and duties and then dissolved upon completion of projects (normally 10 - 12 months) did not do properly the transfer of received knowledge and skills;
- Clear understanding is absent for improvement and integration of systems, models and tools to meet multiple targets of enterprises;
- Mechanisms are missed for actual control, assessment and supervision of application, maintenance and improvement of systems, models and tools in enterprises;
- No mechanisms were applied to record, encourage and award adequately the application, maintenance and improvement of systems;
- Many enterprises do not raise funds for development and investment for technological innovation which lead to limited implementation and application of improving solutions, particularly technical ones.

5. Conclusions and recommendation

The application of systems, models and tools for higher productivity, quality and competiveness of Vietnamese enterprises in context of global international integration is a natural demand. The application made properly and in time would assist enterprises to use more efficiently their available resources. Improved results achieved by successful enterprises have important roles in building methods for implementation of each models and tools in enterprises, developing right examples for further escalations, training and enhancing skills for local experts.

Some recommendations for successful implementation of systems, models and tools for higher productivity and quality in enterprises in next future can be listed as follows:

5.1. For enterprises

- Keeping on the application, maintenance and improvement of systems, models and tools implemented in enterprises. Namely: i) Appointment of contact points (units or individual staffs) for management of productivity and quality, enhancement of activities for education and awareness of laborers on importance of higher productivity and quality in enterprises, education and training for methods and skills of core staffs for implementation activities, establishment of mechanisms of control, assessment and supervision of implementation activities, preparation of mechanisms to record and to encourage contributions of collectives and individuals for application and improvement of higher productivity and quality in enterprises;
- Conducting pre-actively the integration of systems, models and tools to continuously improve and enhance productivity and quality;
- Raising funds for development and application of scientific-technological advances to support the continuous process in enterprises;
- Learning and visiting successful organizations and best practice of systems, models and tools, locally and abroad. It is important to share successful experiences of application among Vietnam community of enterprises through workshops, conferences, study tours and interviews and etc.;

5.2. For units which host and coordinate the implementation of tasks

- Holding on the update and improvement of training documents, methods and guidelines for application in enterprises to adapt systems, models

and tools to actual conditions (level, scale, type and etc.) of various groups of enterprises;

- Coaching and enhancing qualification level and skills of trainers and consulting experts for project management, particularly developing experts to be deeply specialized in various groups of sectors;
- Improving and standardizing procedures to guide the implementation of systems, models and tools for higher productivity and quality in enterprises;
- Completing the system of criteria for selection of enterprises to participate in programs in line with requirements in every stages of projects/programs;
- Taking pre-active measures to build up plans and to carry out control and supervision of schedules as well as quality of consulting services for enterprises, adjustments being taken if needed.

5.3. For organizations which control the management duties

- Building, standardizing and guiding the application of report sheets, filing works and financial files of tasks;
- Releasing support funds in line with approved schedules.

5.4. For the Steering Committee of Program 712

- Enhancing and diversifying the dissemination of information of Program 712 and related activities to enhance productivity and quality over the whole country;
- Holding on the application of pilot projects of tasks during the coming years of the Program with more enterprises to be involved and selected for different sectors and scales to complete further methods for application and escalation largely over the whole country;
- Holding on the escalation of pilot models with priorities reserved for small and medium enterprises. The efforts would be imposed to integrate multiple basic tools with more strong impacts for higher productivity and quality of enterprises;
- Coordinating with local programs of productivity and quality to select the best local enterprises for larger application of models and tools for higher productivity and quality. This would be crucial for provincial level organizations when they participate in the National Program;

- Training and developing a nationwide network of consulting experts for productivity and quality (with resources from local and overseas consulting organizations, universities, research institutes and enterprises);
- Proposing and drafting mechanisms, policies and documents to legalize the application of management technologies for higher productivity and quality;
- Holding activities to share experience with, to learn from and to visit units which have participated in the Program to build up a community of the enterprises of the Program over the whole country;
- Building measures to honour and to record results and contributions of organizations, individuals and enterprises which have successfully participated and produced good results in the Program./.

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